

02_modeling

January 27, 2024

1 Modelling

```
[2]: from octis.evaluation_metrics.diversity_metrics import WordEmbeddingsInvertedRBOCentroid, TopicDiversity
    from octis.evaluation_metrics.coherence_metrics import Coherence, WECOherenceCentroid
    from octis.models.model import load_model_output, save_model_output
    from octis.preprocessing.preprocessing import Preprocessing
    from octis.optimization.optimizer import Optimizer
    from octis.optimization.optimizer_tool import plot_bayesian_optimization, convergence_res
    from nltk.sentiment.vader import SentimentIntensityAnalyzer
    from skopt.space import Integer, Real, Categorical
    from octis.dataset.dataset import Dataset
    from gensim.models import Word2Vec
    from IPython.display import Image
    from octis.models.LDA import LDA
    from octis.models.CTM import CTM
    from octis.models.LSI import LSI
    from octis.models.ETM import ETM
    from gensim.models import Word2Vec
    from gensim.models import Word2Vec
    import matplotlib.pyplot as plt
    from collections import Counter
    from joblib import load, dump
    import pandas as pd
    import numpy as np
    import shutil
    import gensim
    import string
    import spacy
    import nltk
    import time
    import os
    import re
```

Three different variants of OCTIS models will be optimized and trained: The standard Latent Dirichlet Allocation (LDA) in its Gensim Implementation, a Contextualized Topic Model (CTM)

relying heavily on the use of contextualized transformer models like Bert, as well as a Topic Model with which draws its topics and words from the embedding space of the original corpus (ETM) using word2vec.

```
[4]: word2vec_model = Word2Vec.load("./word2vec/word2vec_model")
df_ref=pd.read_csv('./preprocessing/results/df_books_prep.csv')
df_input=pd.read_csv('./preprocessing/results/df_books_chunk.csv')
```

```
[20]: #df_input['tokenized_text'] = df_input['preprocessed_text'].apply(lambda text:
↳text.split())
```

In order to improve the salience of the results Mimno et al have argued for the importance of filtering a corpus to remove the most frequent, as well as the most rare terms in order to make for more meaningful results. As thresholds they have proposed removing the top 5 to 10 percent of most frequent terms, as well as removing everything that doesn't appear at least 5-10 times in the whole corpus.

```
[21]: # # Create a frequency distribution
# word_freq = Counter(word for doc in df_input['tokenized_text'] for word in
↳doc)

# # Identify words to filter
# total_words = len(word_freq)
# top_5_percent = int(total_words * 0.05)
# most_common_words = set(word for word, freq in word_freq.
↳most_common(top_5_percent))
# least_frequent_words = set(word for word, freq in word_freq.items() if freq <
↳5)

# # Combine the sets of words to remove
# words_to_remove = most_common_words.union(least_frequent_words)

# # Filter words from each document
# df_input['filtered_tokens'] = df_input['tokenized_text'].apply(lambda doc:
↳[word for word in doc if word not in words_to_remove])

# # Optionally, rejoin tokens into a single string
# df_input['filtered_text'] = df_input['filtered_tokens'].apply(' '.join)
```

We start with transforming the corpus in the necessary input format required for the octis model topic modeling implementations.

```
[22]: # Writing 'filtered_text' column to 'corpus.txt'
with open('./octis/corpus.txt', 'w', encoding='utf-8') as corpus_file:
    for preprocessed_text in df_input['filtered_text']:
        corpus_file.write(preprocessed_text + '\n')

#creating an input vocabulary file
```

```

vocabulary = set()

for text in df_input['filtered_text']:
    vocabulary.update(text.split())

with open('./octis/vocabulary.txt', 'w') as vocab_file:
    for word in sorted(vocabulary):
        vocab_file.write(word + '\n')

```

```

[24]: #octis expects a binary, not a model object
#word2vec_model.wv.save_word2vec_format('./word2vec/word2vec_model.bin',
    ↪binary=True)

```

Latent Dirichlet Allocation, LDA is yet another transformation from bag-of-words counts into a topic space of lower dimensionality. LDA is a probabilistic extension of LSA (also called multinomial PCA), so LDA's topics can be interpreted as probability distributions over words. These distributions are, just like with LSA, inferred automatically from a training corpus. Documents are in turn interpreted as a (soft) mixture of these topics (again, just like with LSA).

The variant of the dataset for model training and the variant for final later use only differ by the former carrying a split into training, test and validation set.

```

[25]: # preprocessor = Preprocessing(vocabulary=None, save_original_indexes=True,
    ↪max_features=None,
#                                     remove_punctuation=True, punctuation=string.
    ↪punctuation,
#                                     lemmatize=False, stopword_list='english',
#                                     min_chars=1, min_words_docs=0)
# # preprocess
# dataset = Dataset()
# dataset = preprocessor.preprocess_dataset(documents_path=r'/Storage/Studium/
    ↪DigitalHumanities/Semester5/Thesis/code_notebooks/octis/corpus.txt')

# # # #save the preprocessed dataset

# dump(dataset, './octis/dataset.joblib')
dataset=load('./octis/dataset.joblib')

```

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```

```
created vocab
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13198
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```

[5]: # preprocessor = Preprocessing(vocabulary=None, save_original_indexes=True,
    ↪max_features=None,
#                                     remove_punctuation=True, punctuation=string.
    ↪punctuation,

```

```

#                                     lemmatize=False,
↳stopword_list='english',split=False,
#                                     min_chars=1, min_words_docs=0)
# # preprocess
# dataset_final = Dataset()
# dataset_final = preprocessor.preprocess_dataset(documents_path=r'/Storage/
↳Studium/DigitalHumanities/Semester5/Thesis/code_notebooks/octis/corpus.txt')

# dump(dataset_final, './octis/dataset_final.joblib')
dataset_final=load('./octis/dataset_final.joblib')

```

2 Model Training

LDA OCTIS - intrinsic optimization pipeline with skopt. All three models are optimized on the basis of on Word Embedding Coherence Centroid, a normalized metric which draws from an embedding space drawn from the original corpus in order to allow for a more domain specific and closer fit to the texts in use. In addition, as a secondary metric Diversity Centroid was chosen to influence the choice of model parameters towards a broader coverage of content inherent in the texts. The optimization method chosen by OCTIS by default is bayesian, which is a resource intensive stochastic approach well suited for otherwise difficult to optimize or evaluate models, which are taken as a black-box input.

```

[27]: # Define the hyperparameter space
parameter_space = {
    'num_topics': Integer(50, 101), # Range of topics as integer
    'alpha': Real(0.001, 10, prior='uniform'), # Dirichlet hyperparameter for
↳document-topic distribution
    'eta': Real(0.001, 10, prior='uniform') # Dirichlet hyperparameter for
↳topic-word distribution
}

# Define the model
lda_model = LDA(num_topics=60, alpha=0.09, eta=5.0)

optimization_runs=200
model_runs=3

#npmi = Coherence(texts=dataset.get_corpus())
coherence_centroid = WECOherenceCentroid(topk=20, word2vec_path='./word2vec/
↳word2vec_model.bin', binary=True)
#topic_diversity = TopicDiversity(topk=10)
DiversityCentroid=WordEmbeddingsInvertedRBOCentroid(topk=20, weight=0.9,
↳normalize=True, word2vec_path='./word2vec/word2vec_model.bin', binary=True)
#coherece_score = metric_coherence.score(dataset.get_corpus())
# Run the hyperparameter optimization
start = time.time()

```

```

optimizer=Optimizer()
optimizer_results_LDA = optimizer.optimize(model=lda_model, dataset=dataset,␣
↳metric=coherence_centroid,
        search_space=parameter_space,␣
↳number_of_call=optimization_runs,
        n_random_starts=5,surrogate_model='RF',
        model_runs=model_runs, save_models=True, topk=20,
        extra_metrics=[DiversityCentroid],save_path='./octis/
↳results/', plot_best_seen=True)

end = time.time()
duration = end - start

# Save the results
optimizer_results_LDA.save_to_csv("./octis/results/Opt_LDAResults.csv")

print('Optimizing model took: ' + str(round(duration)) + ' seconds.')

```

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```

Optimizing model took: 12472 seconds.

```
[28]: dump(optimizer_results_LDA, './octis/models/optimizer_results_LDA_long.joblib',  
      ↪compress=('lzma', 9))
```

```
[28]: ['./octis/models/optimizer_results_LDA_long.joblib']
```

```
[3]: optimizer_results_LDA=load('./octis/models/optimizer_results_LDA_long.joblib')
```

```
[29]: # the optimization process here is one of maximization, yet the provided  
      ↪function for plotting  
      # assumes the oposite, so we shall invert the result.  
  
      values_to_plot_LDA = [-x for x in optimizer_results_LDA.info['f_val']]  
  
      plot_bayesian_optimization(values=values_to_plot_LDA,  
                                name_plot="LDA_Optimization_Convergence",  
                                log_scale=False,  
                                conv_max=True)
```

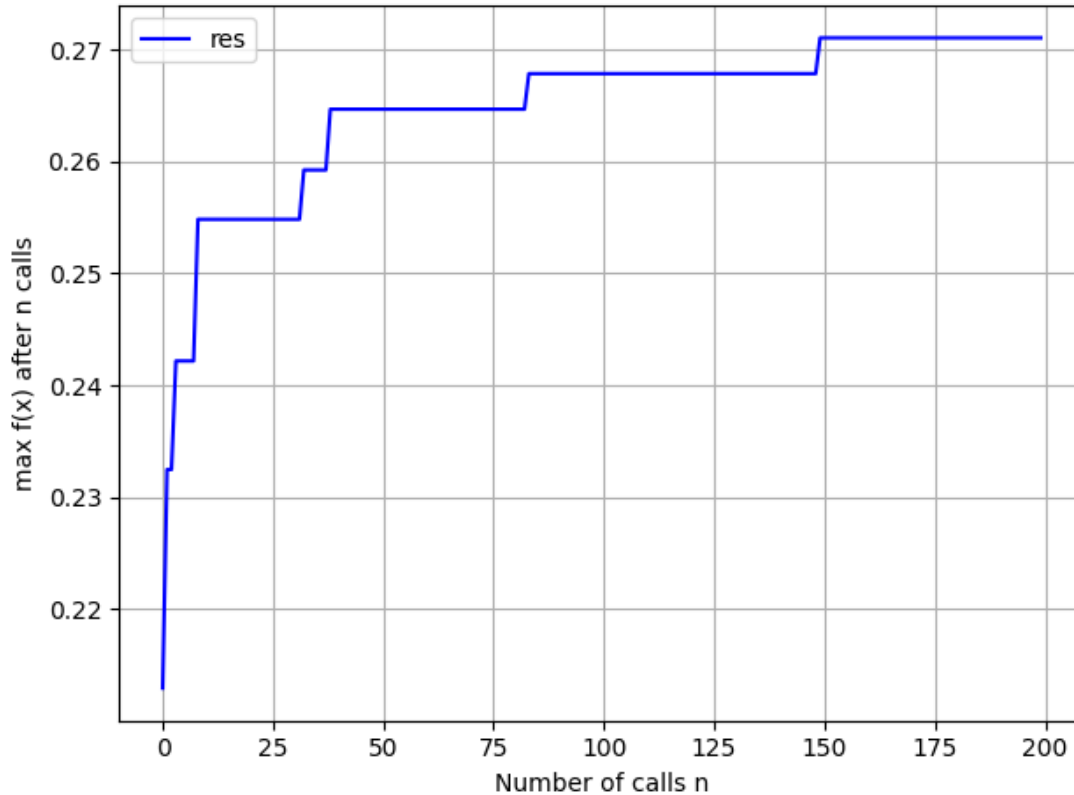
The optimization was successful

```
[30]: #The image is just dumped into the working directory, we shall move it_
      ↪somewhere more fitting

shutil.move('./LDA_Optimization_Convergence.png', './octis/results/
      ↪LDA_Optimization_Convergence.png')

Image(filename='./octis/results/LDA_Optimization_Convergence.png')
```

[30]:



```
[31]: # Plotting WECOherenceCentroid' and 'WordEmbeddingsInvertedRBOCentroid' our two_
      ↪metrics

coherence_scores_LDA = [max(run) for run in optimizer_results_LDA.
      ↪info['dict_model_runs']['WECOherenceCentroid'].values()]

diversity_scores_LDA = [max(run) for run in optimizer_results_LDA.
      ↪info['dict_model_runs']['O_WordEmbeddingsInvertedRBOCentroid'].values()]

# Create a figure with twin y-axis for the second metric
fig, ax1 = plt.subplots(figsize=(10, 6))

ax1.set_xlabel('Iteration')
```

```

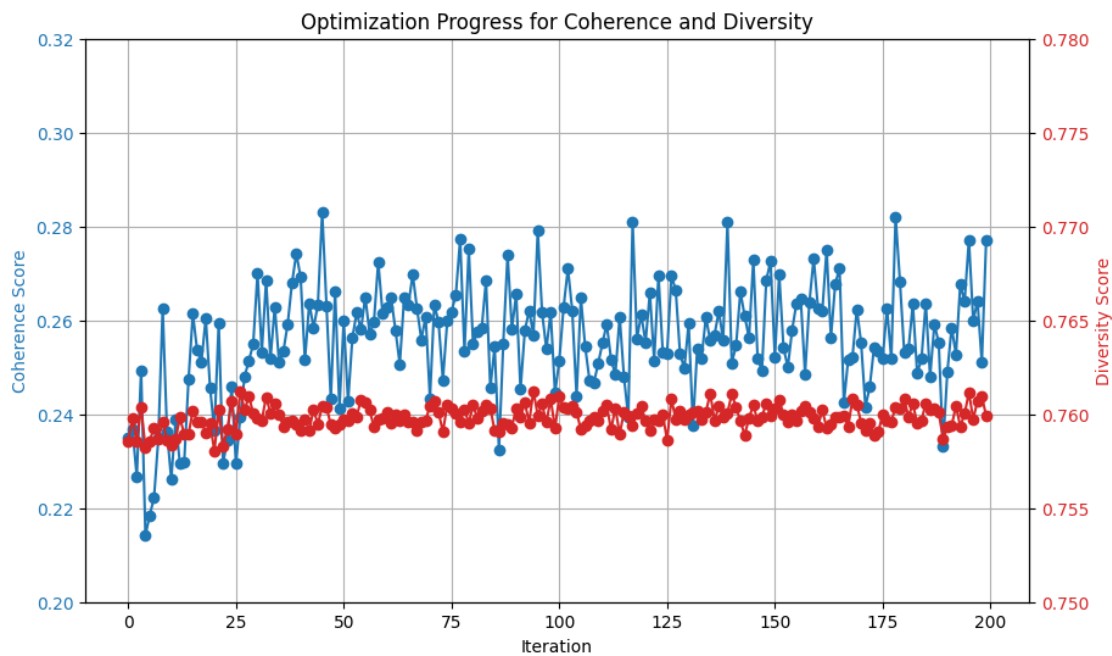
ax1.set_ylabel('Coherence Score', color='tab:blue')
ax1.plot(coherence_scores_LDA, marker='o', color='tab:blue')
ax1.tick_params(axis='y', labelcolor='tab:blue')
ax1.set_ylim(0.20, 0.32)

ax2 = ax1.twinx()
ax2.set_ylabel('Diversity Score', color='tab:red')
ax2.plot(diversity_scores_LDA, marker='o', color='tab:red')
ax2.tick_params(axis='y', labelcolor='tab:red')
ax2.set_ylim(0.75, 0.78)

plt.title('Optimization Progress for Coherence and Diversity')
ax1.grid(True)

plt.show()

```



for the choice of the best hyperparameters, we primarily take the coherence values into account, but use diversity as a form of secondary criterion. Of the ten best coherence scores we shall select the parameter set with the highest diversity score.

```

[32]: # Extract the best configurations based on coherence scores
coherence_scores_LDA = optimizer_results_LDA.
      ↪ info['dict_model_runs']['WECOherenceCentroid']
diversity_scores_LDA = optimizer_results_LDA.
      ↪ info['dict_model_runs']['O_WordEmbeddingsInvertedRBOCentroid']

```

```

# Extracting scores and hyperparameter configurations
combined_scores = []
for i, (coherence_run, diversity_run) in enumerate(zip(coherence_scores_LDA.
    ↪values(), diversity_scores_LDA.values())):
    max_coherence = max(coherence_run)
    max_diversity = max(diversity_run)
    alpha = optimizer_results_LDA.info['x_iters']['alpha'][i]
    eta = optimizer_results_LDA.info['x_iters']['eta'][i]
    num_topics = optimizer_results_LDA.info['x_iters']['num_topics'][i]
    combined_scores.append((max_coherence, max_diversity, alpha, eta,
    ↪num_topics))

# Sort by coherence score first and take the top ten
top_ten_by_coherence = sorted(combined_scores, key=lambda x: x[0],
    ↪reverse=True)[:10]

# Select the configuration with the highest diversity score from the top ten
best_overall_LDA = max(top_ten_by_coherence, key=lambda x: x[1])

# Print the best configuration
print("Best Coherence Score:", best_overall_LDA[0])
print("Corresponding Diversity Score:", best_overall_LDA[1])
print("Best Configuration: num_topics =", best_overall_LDA[4], ", alpha =",
    ↪best_overall_LDA[2], ", eta =", best_overall_LDA[3])

```

Best Coherence Score: 0.27711903966818585
 Corresponding Diversity Score: 0.7611531671767668
 Best Configuration: num_topics = 73 , alpha = 0.06460320991688963 , eta =
 2.9415645388839033

```

[33]: best_num_topics = best_overall_LDA[4]
      best_alpha = best_overall_LDA[2]
      best_eta = best_overall_LDA[3]

# Now instantiate the LDA model with the best hyperparameters
best_model_LDA = LDA(num_topics=best_num_topics,
                    alpha=best_alpha,
                    eta=best_eta)

# Disable partitioning to use the entire dataset
best_model_LDA.partitioning(use_partitions=False)

# Train the model with the dataset
best_model_LDA = best_model_LDA.train_model(dataset_final)

```

```

[3]: #dump(best_model_LDA, './octis/models/best_model_LDA.joblib', compress=('lzma',
    ↪9))

```

```
best_model_LDA = load('./octis/models/best_model_LDA.joblib')
```

```
[27]: #dump(best_model_LDA, './octis/models/best_model_LDA_overall.joblib',  
      ↪compress=('lzma', 9))  
#best_model_LDA = load('./octis/models/best_model_LDA_overall.joblib')
```

The topic output for the optimal model

```
[35]: top_words_per_topic_LDA = best_model_LDA['topics']  
  
# Display the top words for each topic  
for topic_id, words in enumerate(top_words_per_topic_LDA):  
    print("Topic", topic_id + 1, ":", words)
```

```
Topic 1 : ['relation', 'sex', 'pressure', 'driver', 'delicacy', 'arranged',  
'ruins', 'curtains', 'impatient', 'willing']  
Topic 2 : ['plague', 'louder', 'motives', 'foreign', 'travel', 'examined',  
'disappointment', 'prince', 'authority', 'prisoner']  
Topic 3 : ['toll', 'winds', 'roar', 'tide', 'stage', 'lovers', 'er', 'sits',  
'represented', 'wheels']  
Topic 4 : ['milk', 'outline', 'fountain', 'staff', 'sunset', 'yonder',  
'obtained', 'splendid', 'entire', 'fruit']  
Topic 5 : ['abbot', 'assist', 'virtues', 'revenge', 'sons', 'labour',  
'agitation', 'harm', 'delivered', 'amiable']  
Topic 6 : ['abode', 'examined', 'obtained', 'gallery', 'disappointment',  
'travel', 'ice', 'mile', 'arranged', 'that']  
Topic 7 : ['beast', 'purple', 'lid', 'rare', 'camp', 'monster', 'the',  
'marvellous', 'fashionable', 'merry']  
Topic 8 : ['prophet', 'inspired', 'cavern', 'kings', 'ridiculous', 'yonder',  
'crimson', 'wave', 'glare', 'lamps']  
Topic 9 : ['the', 'quality', 'park', 'prince', 'guilt', 'disappointment',  
'magnificent', 'entire', 'willing', 'rapid']  
Topic 10 : ['kingdom', 'maiden', 'darling', 'willows', 'tent', 'angels',  
'stronger', 'camp', 'older', 'reward']  
Topic 11 : ['cigar', 'understanding', 'pleasures', 'severe', 'impatient',  
'agitation', 'prisoner', 'chapel', 'housekeeper', 'willing']  
Topic 12 : ['paw', 'earliest', 'major', 'silk', 'knock', 'harm', 'warning',  
'nephew', 'ing', 'examined']  
Topic 13 : ['the', 'paw', 'major', 'afterward', 'endeavour', 'sergeant', 'that',  
'mistake', 'distinguish', 'fairy']  
Topic 14 : ['er', 'lord', 'elder', 'cavern', 'staff', 'lightly', 'rival',  
'terrific', 'faintly', 'milk']  
Topic 15 : ['housekeeper', 'ocean', 'wave', 'prophet', 'flying', 'prisoner',  
'clearly', 'noon', 'ice', 'date']  
Topic 16 : ['lid', 'destined', 'contained', 'respectable', 'bushes', 'inside',  
'mistake', 'flood', 'sisters', 'quality']  
Topic 17 : ['prince', 'jealous', 'furnished', 'picked', 'chimney', 'savage',  
'the', 'hint', 'italian', 'college']
```

Topic 18 : ['louder', 'honourable', 'cavern', 'rope', 'landlady', 'stillness', 'occasioned', 'bones', 'level', 'gods']

Topic 19 : ['abbot', 'yard', 'er', 'picked', 'echoed', 'crimson', 'lightly', 'visits', 'curtain', 'pattern']

Topic 20 : ['merry', 'captain', 'named', 'camp', 'wagon', 'showman', 'advance', 'bade', 'relations', 'earliest']

Topic 21 : ['pattern', 'gods', 'careful', 'ice', 'stir', 'rope', 'yard', 'queen', 'dressing', 'nice']

Topic 22 : ['conducted', 'endeavour', 'gallery', 'singer', 'absorbed', 'turns', 'prince', 'principal', 'officers', 'ceiling']

Topic 23 : ['student', 'honourable', 'paw', 'accents', 'earliest', 'merit', 'attendants', 'mischief', 'beard', 'disappointment']

Topic 24 : ['milk', 'traveller', 'relations', 'chimney', 'staff', 'nice', 'dogs', 'amiable', 'consent', 'pitcher']

Topic 25 : ['priests', 'honourable', 'foreign', 'system', 'temple', 'student', 'agitation', 'italian', 'revenge', 'attendants']

Topic 26 : ['abbot', 'monster', 'rope', 'obscurity', 'harbor', 'rat', 'beating', 'camp', 'severe', 'frequent']

Topic 27 : ['abbot', 'basket', 'exposed', 'yonder', 'sisters', 'bushes', 'afterward', 'amazement', 'cavern', 'burned']

Topic 28 : ['painter', 'galley', 'wounded', 'maiden', 'pardon', 'student', 'points', 'passionate', 'er', 'lord']

Topic 29 : ['dismal', 'milk', 'traveller', 'staff', 'hearth', 'stately', 'nice', 'marvellous', 'vampire', 'elder']

Topic 30 : ['enemies', 'milk', 'parent', 'abode', 'destruction', 'pattern', 'the', 'minister', 'prisoner', 'abbot']

Topic 31 : ['toll', 'verse', 'sex', 'forgive', 'remote', 'poem', 'maiden', 'warmth', 'torn', 'priests']

Topic 32 : ['guilty', 'louder', 'impatient', 'thrust', 'wounded', 'mistake', 'beating', 'agreed', 'endeavour', 'contempt']

Topic 33 : ['vampire', 'fruit', 'stately', 'suspected', 'muttered', 'recollect', 'ruined', 'astonished', 'hide', 'stricken']

Topic 34 : ['fountain', 'wedding', 'wave', 'hearth', 'heap', 'noon', 'breathed', 'housekeeper', 'flat', 'pressure']

Topic 35 : ['abbot', 'student', 'pattern', 'dwelling', 'blessed', 'onward', 'gallery', 'hearth', 'gates', 'advance']

Topic 36 : ['onward', 'poem', 'surrounding', 'yonder', 'glided', 'forwards', 'porch', 'verse', 'angels', 'numerous']

Topic 37 : ['tent', 'plague', 'bag', 'poem', 'lift', 'relations', 'wept', 'profound', 'trifle', 'sole']

Topic 38 : ['housekeeper', 'distinguish', 'wounded', 'endeavour', 'reflections', 'labour', 'folly', 'er', 'poverty', 'assist']

Topic 39 : ['prophet', 'lord', 'fruit', 'beating', 'prisoner', 'swiftly', 'agreed', 'dressing', 'fatigue', 'terrace']

Topic 40 : ['guilt', 'widow', 'dagger', 'poured', 'haired', 'reward', 'impatient', 'yard', 'assumed', 'mirth']

Topic 41 : ['merry', 'lord', 'the', 'that', 'abbot', 'funeral', 'fairy', 'poem', 'authority', 'smooth']

Topic 42 : ['milk', 'staff', 'chill', 'stir', 'torn', 'quality', 'bowed', 'pattern', 'knife', 'yonder']

Topic 43 : ['abbot', 'er', 'reputation', 'mistake', 'yield', 'guilt', 'maiden', 'fatigue', 'chimney', 'poured']

Topic 44 : ['louder', 'beating', 'lantern', 'groan', 'ray', 'bade', 'sexton', 'ocean', 'sum', 'cautiously']

Topic 45 : ['wave', 'dwelling', 'er', 'innocence', 'hearth', 'mode', 'elder', 'mummy', 'driver', 'ruined']

Topic 46 : ['knife', 'yes', 'stair', 'forgive', 'jumped', 'rode', 'didn', 'goblins', 'officers', 'rapid']

Topic 47 : ['monster', 'painter', 'sum', 'wave', 'captain', 'religion', 'employment', 'expectation', 'prince', 'rang']

Topic 48 : ['abbot', 'science', 'bade', 'ice', 'nobleman', 'deadly', 'guide', 'signs', 'ashamed', 'current']

Topic 49 : ['abbot', 'paw', 'major', 'sergeant', 'rat', 'rope', 'motionless', 'knock', 'starting', 'captain']

Topic 50 : ['sergeant', 'paw', 'examined', 'driver', 'afterward', 'plague', 'match', 'major', 'knock', 'chill']

Topic 51 : ['tent', 'bushes', 'beings', 'expectation', 'willows', 'flood', 'yes', 'revenge', 'canoe', 'behaviour']

Topic 52 : ['throne', 'th', 'st', 'hide', 'clergyman', 'wedding', 'yonder', 'roar', 'kings', 'guide']

Topic 53 : ['plague', 'artist', 'date', 'stage', 'abode', 'represented', 'absent', 'prophet', 'destined', 'military']

Topic 54 : ['the', 'beds', 'scarce', 'gun', 'candles', 'destruction', 'hath', 'warning', 'torn', 'queen']

Topic 55 : ['student', 'captain', 'hanging', 'accordingly', 'parent', 'foreign', 'coach', 'seeking', 'lord', 'examined']

Topic 56 : ['lid', 'dismal', 'lovers', 'housekeeper', 'slender', 'camp', 'enemies', 'prisoner', 'thrust', 'lamps']

Topic 57 : ['nice', 'abbot', 'carrying', 'didn', 'suspect', 'crying', 'fruit', 'prisoner', 'merry', 'monster']

Topic 58 : ['abbot', 'milk', 'staff', 'elder', 'sons', 'housekeeper', 'priests', 'marry', 'bones', 'th']

Topic 59 : ['er', 'nice', 'didn', 'stair', 'wave', 'monster', 'isn', 'yes', 'guide', 'that']

Topic 60 : ['milk', 'nice', 'traveller', 'tent', 'mischievous', 'priests', 'fruit', 'prince', 'obtained', 'request']

Topic 61 : ['abbot', 'nice', 'sum', 'hath', 'afterward', 'mistake', 'earlier', 'heir', 'date', 'paw']

Topic 62 : ['relate', 'remote', 'bushes', 'dressing', 'furnished', 'monster', 'guilty', 'invited', 'reward', 'splendid']

Topic 63 : ['beating', 'enthusiasm', 'reputation', 'affections', 'guide', 'stage', 'stole', 'gods', 'louder', 'breathed']

Topic 64 : ['student', 'didn', 'lid', 'that', 'driver', 'yes', 'knot', 'heavily', 'goblins', 'naughty']

Topic 65 : ['haired', 'obscurity', 'guilty', 'monimia', 'degrees', 'frequent', 'remorse', 'heir', 'galley', 'trifling']

```

Topic 66 : ['poem', 'the', 'college', 'attachment', 'contained', 'older',
'principal', 'hearth', 'rare', 'misfortunes']
Topic 67 : ['pattern', 'purple', 'crying', 'coroner', 'clad', 'savage', 'cease',
'reputation', 'clearly', 'faintly']
Topic 68 : ['student', 'dwelling', 'enthusiasm', 'pointing', 'disappointment',
'rat', 'rope', 'marchioness', 'honourable', 'delicacy']
Topic 69 : ['wedding', 'hath', 'tent', 'ice', 'rope', 'minister', 'rat',
'energy', 'noon', 'bushes']
Topic 70 : ['earthly', 'fairy', 'dismal', 'lovers', 'gallery', 'didn',
'lightly', 'hide', 'burden', 'funeral']
Topic 71 : ['ocean', 'bones', 'hearth', 'funeral', 'beds', 'minister', 'fish',
'sexton', 'milk', 'beach']
Topic 72 : ['the', 'ice', 'mistake', 'afterward', 'serve', 'appeal', 'gates',
'chill', 'splendid', 'gift']
Topic 73 : ['the', 'mistake', 'dressing', 'understanding', 'housekeeper',
'angels', 'religion', 'chimney', 'hearth', 'relations']

```

```
[36]: dump(top_words_per_topic_LDA, './analysis/top_words_per_topic_LDA.joblib')
```

```
[36]: ['./analysis/top_words_per_topic_LDA.joblib']
```

Preparing the results for further analysis

```
[11]: def get_document_topic_percentages(topic_document_matrix):

    num_docs = topic_document_matrix.shape[1]
    num_topics = topic_document_matrix.shape[0]
    data = []

    # Iterate over each document
    for doc_index in range(topic_document_matrix.shape[1]):
        # Get topic distribution for the document
        topic_distribution = topic_document_matrix[:, doc_index]

        data.append([round(percentage * 100, 2) for percentage in
↳topic_distribution])

    column_names = [f"Topic {i+1}" for i in range(num_topics)]
    df = pd.DataFrame(data, columns=column_names)
    df.index.name = "Document ID"
    return df
```

```
[12]: topic_document_matrix_LDA = best_model_LDA["topic-document-matrix"]
topic_distribution_df_LDA =
↳get_document_topic_percentages(topic_document_matrix_LDA)
topic_distribution_df_LDA.head(10)
```


[12]:

	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6	Topic 7	\
Document ID								
0	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
1	0.19	2.68	0.36	1.12	2.18	1.21	0.34	
2	0.25	0.49	0.91	1.05	7.00	1.43	0.54	
3	0.00	0.43	0.00	0.18	8.61	0.83	0.00	
4	0.21	0.01	0.01	2.16	11.04	4.61	3.06	
5	0.39	0.01	0.39	0.26	2.53	8.84	1.24	
6	0.00	0.71	0.87	0.68	10.97	4.35	0.34	
7	0.01	0.01	1.24	1.06	2.34	0.07	0.45	
8	0.07	0.45	1.86	2.02	16.63	2.75	1.95	
9	0.37	0.29	0.85	1.55	7.01	0.78	1.69	

	Topic 8	Topic 9	Topic 10	...	Topic 64	Topic 65	Topic 66	\
Document ID				...				
0	0.03	0.03	0.03	...	0.03	0.03	0.03	
1	1.00	0.50	0.67	...	0.31	1.17	0.00	
2	1.57	1.35	2.61	...	0.65	2.13	0.54	
3	1.36	0.01	0.43	...	0.23	0.37	0.00	
4	0.33	3.96	1.46	...	0.82	6.64	0.56	
5	0.89	1.15	2.87	...	0.11	8.06	0.59	
6	0.82	3.14	1.12	...	0.15	8.92	1.84	
7	1.49	0.01	5.21	...	0.01	1.88	2.63	
8	0.93	1.02	0.58	...	1.07	2.36	1.64	
9	2.14	2.56	0.45	...	0.41	1.16	1.68	

	Topic 67	Topic 68	Topic 69	Topic 70	Topic 71	Topic 72	\
Document ID							
0	0.03	0.03	0.03	36.64	0.03	0.03	
1	0.00	0.35	0.89	2.27	0.24	0.00	
2	0.43	0.18	2.91	12.59	0.84	0.00	
3	0.00	0.00	0.23	0.22	0.11	0.00	
4	0.01	1.11	3.25	3.79	0.50	0.01	
5	0.13	0.00	0.25	1.97	1.10	0.08	
6	0.17	0.85	4.13	2.10	0.29	0.00	
7	0.01	0.01	1.35	11.11	0.12	0.40	
8	0.02	0.17	1.51	3.10	1.34	0.00	
9	0.00	0.95	0.61	1.45	0.83	0.39	

	Topic 73
Document ID	
0	0.03
1	0.85
2	0.90
3	0.00
4	0.80
5	0.00

```

6          1.26
7          0.01
8          2.48
9          0.00

```

```
[10 rows x 73 columns]
```

```
[13]: original_indexes = dataset_final._Dataset__original_indexes
      topic_distribution_df_LDA['Original Document Index'] = original_indexes
```

The rows of the original document are sampled in a random order when passed into octis as a dataset in case the default split=True parameter is set. A choice which is necessary to allow for hold out data in the parameter optimization. Thus the document order is scrambled. For the sake of retraining a model with optimal parameters on the full corpus, the parameter is set to False, the order of documents is maintained and can be easily rejoined. For safety's sake, we will join according to order of the indices function nonetheless.

In order to further enrich the data, we will add the sentiment to the dataframe using the default sentiment analysis standard VADER.

```
[14]: nltk.download('vader_lexicon')

def add_sentiment_scores(df, text_column):

    sia = SentimentIntensityAnalyzer()

    # Calculate sentiment scores
    df['sentiment'] = df[text_column].apply(lambda text: sia.
    ↪polarity_scores(text)['compound'])

    return df
```

```
[nltk_data] Downloading package vader_lexicon to
[nltk_data] /home/florian/nltk_data...
[nltk_data] Package vader_lexicon is already up-to-date!
```

```
[15]: add_sentiment_scores(df_input, 'preprocessed_text')
```

```
[15]:                                     preprocessed_text \
0    fragment adventure turned steed hoping cross d...
1    plague portion ensuing relating street manner ...
2    whatsoever away terms included language charac...
3    doll wangs leaving justice skill witches spea...
4    note text little work finished year intended i...
..
217  friend worth letters intimacies acquaintances ...
218  happened carriage crowd leaving ball begged go...
219  distinct reached ears henceforward distinctly ...
220  laugh came wonder wise man hippogriffs dragons...
```

221 forehead consultation left precisely walked gr...

	reference	sentiment
0	Aikin_SirBertran_1	-0.9201
1	Ainsworth_OldSaintPa_1	0.9773
2	Ainsworth_Rookwood_1	0.9989
3	Ainsworth_TheLancash_1	-0.9998
4	Austen_Northanger_1	1.0000
..
217	LeFanu_InaGlassDa_5	1.0000
218	LeFanu_InaGlassDa_6	0.9998
219	LeFanu_InaGlassDa_7	0.9999
220	LeFanu_InaGlassDa_8	1.0000
221	LeFanu_InaGlassDa_9	-0.9736

[222 rows x 3 columns]

```
[16]: df_input['input_index'] = df_input.index
df_input['ref'] = df_input['reference'].apply(lambda x: x.rsplit('_', 1)[0])
df_merge = df_input.merge(df_ref, left_on='ref', right_on='reference',
                           how='left')
df_merge['date'] = df_merge['date'].astype('Int64')
df_merge['birthdate'] = df_merge['birthdate'].astype('Int64')
df_merge.head()
```

```
[16]:                                     preprocessed_text_x      reference_x \
0  fragment adventure turned steed hoping cross d...      Aikin_SirBertran_1
1  plague portion ensuing relating street manner ...      Ainsworth_OldSaintPa_1
2  whatsoever away terms included language charac...      Ainsworth_Rookwood_1
3  doll wangs leaving justice skill witches spea...      Ainsworth_TheLancash_1
4  note text little work finished year intended i...      Austen_Northanger_1
```

	sentiment	input_index	ref	index	reference_y
0	-0.9201	0	Aikin_SirBertran	0	Aikin_SirBertran
1	0.9773	1	Ainsworth_OldSaintPa	1	Ainsworth_OldSaintPa
2	0.9989	2	Ainsworth_Rookwood	2	Ainsworth_Rookwood
3	-0.9998	3	Ainsworth_TheLancash	3	Ainsworth_TheLancash
4	1.0000	4	Austen_Northanger	5	Austen_Northanger

	title
0	Sir Bertrand, A Fragment
1	Old Saint Paul's: A Tale of the Plague and the...
2	Rookwood
3	The Lancashire Witches: A Romance of Pendle Fo...
4	Northanger Abbey

author	date	...	mode	genre	gender
--------	------	-----	------	-------	--------

0	Aikin, John and Anna Laetitia	1773	...	Fragment	Gothic	NaN
1	Ainsworth, William Harrison	1841	...	NaN	NaN	m
2	Ainsworth, William Harrison	1834	...	Novel	Gothic	m
3	Ainsworth, William Harrison	1848	...	NaN	NaN	m
4	Austen, Jane	1817	...	NaN	NaN	f

	birthdate	nationality	role (central/peripheral/influence)	\
0	<NA>	English		Central
1	1805	English		NaN
2	1805	English		Central
3	1805	English		NaN
4	1775	English		NaN

	text	source	\
0	SIR BERTRAND, A FRAGMENT:\n\nAFTER this advent...	colors	
1	OLD SAINT PAUL\'S\n\n _A TALE OF THE PLAGUE\n...	pb-manual	
2	\nThe Project Gutenberg EBook of Rookwood, by ...	colors	
3	Proofreading Team.\n\n\n\n\n\n\n[Illustration:...	pb-manual	
4	Northanger Abbey\n\n\nby Jane Austen\n\n\n(1803)...	gutenberg	

	preprocessed_text_y	\
0	fragment adventure turned steed hoping cross d...	
1	plague portion ensuing relating street manner ...	
2	whatsoever away terms included language charac...	
3	doll wangos leaving justice skill witches spea...	
4	note text little work finished year intended i...	

	tokenized_text
0	['fragment', 'adventure', 'turned', 'steed', '']
1	['plague', 'portion', 'ensuing', 'relating', '']
2	['whatsoever', 'away', 'terms', 'included', 'l...']
3	['doll', 'wangos', 'leaving', 'justice', 'skil...']
4	['note', 'text', 'little', 'work', 'finished', '']

[5 rows x 21 columns]

```
[17]: # merging of topic distribution with features
# reorganizing the order of columns and clean up
df_txt_features_LDA = df_merge.merge(topic_distribution_df_LDA,
    ↪right_on='Original Document Index', left_on='input_index')
df_txt_features_LDA=df_txt_features_LDA.drop(['text',
    ↪'preprocessed_text_y', 'tokenized_text', 'preprocessed_text_x', 'index',
    ↪'ref', 'Original Document Index'], axis=1)
df_txt_features_LDA.rename(columns={'reference_x': 'reference', 'reference_y':
    ↪'text_key'}, inplace=True)
df_txt_features_LDA = df_txt_features_LDA[['input_index'] + [col for col in
    ↪df_txt_features_LDA.columns if col != 'input_index']]
```

```
df_txt_features_LDA.rename(columns={'role (central/peripheral/influence)':  
↪'role'}, inplace=True)  
df_txt_features_LDA.head()
```

```
[17]:
```

	input_index	reference	sentiment	text_key \
0	0	Aikin_SirBertran_1	-0.9201	Aikin_SirBertran
1	1	Ainsworth_OldSaintPa_1	0.9773	Ainsworth_OldSaintPa
2	2	Ainsworth_Rookwood_1	0.9989	Ainsworth_Rookwood
3	3	Ainsworth_TheLancash_1	-0.9998	Ainsworth_TheLancash
4	4	Austen_Northanger_1	1.0000	Austen_Northanger

	title \
0	Sir Bertrand, A Fragment
1	Old Saint Paul's: A Tale of the Plague and the...
2	Rookwood
3	The Lancashire Witches: A Romance of Pendle Fo...
4	Northanger Abbey

	author	date	period	mode	genre	...	\
0	Aikin, John and Anna Laetitia	1773	Romantic	Fragment	Gothic	...	
1	Ainsworth, William Harrison	1841	NaN	NaN	NaN	...	
2	Ainsworth, William Harrison	1834	NaN	Novel	Gothic	...	
3	Ainsworth, William Harrison	1848	NaN	NaN	NaN	...	
4	Austen, Jane	1817	NaN	NaN	NaN	...	

	Topic 64	Topic 65	Topic 66	Topic 67	Topic 68	Topic 69	Topic 70	Topic 71 \
0	0.03	0.03	0.03	0.03	0.03	0.03	36.64	0.03
1	0.31	1.17	0.00	0.00	0.35	0.89	2.27	0.24
2	0.65	2.13	0.54	0.43	0.18	2.91	12.59	0.84
3	0.23	0.37	0.00	0.00	0.00	0.23	0.22	0.11
4	0.82	6.64	0.56	0.01	1.11	3.25	3.79	0.50

	Topic 72	Topic 73
0	0.03	0.03
1	0.00	0.85
2	0.00	0.90
3	0.00	0.00
4	0.01	0.80

[5 rows x 88 columns]

```
[18]: df_txt_features_LDA.to_csv('./analysis/df_txt_features_LDA.csv', index=False)
```

creating exportable model elements for use in pyLDAvis in a alter step

```
[19]: topic_term_dists_LDA= best_model_LDA["topic-word-matrix"]  
doc_topic_dists_LDA = best_model_LDA["topic-document-matrix"]  
doc_topic_dists_LDA = doc_topic_dists_LDA.T
```

```
vocab = dataset_final.get_vocabulary()
doc_lengths = [len(doc) for doc in dataset_final.get_corpus()]
```

```
[20]: corpus = dataset_final.get_corpus()

# Initialize term frequency dictionary
term_frequency_dict = {term: 0 for term in vocab}

# Count the frequency of each term in the corpus
for document in corpus:
    for word in document:
        if word in term_frequency_dict:
            term_frequency_dict[word] += 1

# Convert term frequencies to a list in the order of the vocabulary
term_frequency = [term_frequency_dict[word] for word in vocab]
```

Export for the analysis

```
[21]: dump(topic_term_dists_LDA, './analysis/topic_term_dists_LDA.joblib')
dump(doc_topic_dists_LDA, './analysis/doc_topic_dists_LDA.joblib')
dump(vocab, './analysis/vocab.joblib')
dump(doc_lengths, './analysis/doc_lengths.joblib')
dump(term_frequency, './analysis/term_frequency.joblib')
```

```
[21]: ['./analysis/term_frequency.joblib']
```

CTM

```
[49]: # Initialize the CTM model with some default parameters
ctm_model = CTM(batch_size=128, num_epochs=30, inference_type='zeroshot',
↳bert_model="bert-base-nli-mean-tokens")

# Define the hyperparameter space for CTM
parameter_space = {
    'num_topics': Integer(50, 100),
    'num_layers': Categorical([1, 2, 3]),
    'num_neurons': Categorical([100, 200, 300, 500, 750, 1000]),
    'learn_rate': Real(0.001, 0.1),
    'optimizer': Categorical(['adam', 'sgd', 'msprop']),
    'dropout': Real(0.0, 0.9, prior='uniform')
}

# Define the evaluation metric
coherence_centroid = WECoherecenceCentroid(topk=20, word2vec_path='./word2vec/
↳word2vec_model.bin', binary=True)
DiversityCentroid = WordEmbeddingsInvertedRBOCentroid(topk=20, weight=0.9,
↳normalize=True, word2vec_path='./word2vec/word2vec_model.bin', binary=True)
```

```

# Run the hyperparameter optimization
start = time.time()

optimizer = Optimizer()
optimizer_results_CTM = optimizer.optimize(model=ctm_model, dataset=dataset,
    ↪metric=coherence_centroid,
        search_space=parameter_space, number_of_call=200,
        n_random_starts=5, surrogate_model='RF',
        model_runs=3, save_models=True, topk=20,
        extra_metrics=[DiversityCentroid], save_path='./octis/
    ↪results/', plot_best_seen=True)

end = time.time()
duration = end - start

# Save the results
optimizer_results_CTM.save_to_csv("./octis/results/Opt_CTMresults.csv")

print('Optimizing model took: ' + str(round(duration)) + ' seconds.')

```

Current call: 0

Batches: 0%| | 0/2 [00:00<?, ?it/s]

Batches: 0%| | 0/1 [00:00<?, ?it/s]

Batches: 0%| | 0/1 [00:00<?, ?it/s]

Current call: 1

Current call: 2

Current call: 3

Current call: 4

Current call: 5

Current call: 6

Current call: 7

Current call: 8

Current call: 9

Current call: 10

Current call: 11

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```

Optimizing model took: 4692 seconds.

```
[50]: dump(optimizer_results_CTM, './octis/models/optimizer_results_CTM.joblib',  
        ↪compress=('lzma', 9))
```

```
[50]: ['./octis/models/optimizer_results_CTM.joblib']
```

```
[45]: optimizer_results_CTM = load('./octis/models/optimizer_results_CTM.joblib')
```

```
[51]: # the optimization process here is one of maximization, yet the provided  
        ↪function for plotting  
        # assumes the oposite, so we shall invert the result.
```

```

values_to_plot_CTM = [-x for x in optimizer_results_CTM.info['f_val']]

plot_bayesian_optimization(values=values_to_plot_CTM,
                           name_plot="CTM_Optimization_Convergence",
                           log_scale=False,
                           conv_max=True)

```

This optimization was less smooth and clear, additional runs could potentially still improve upon the model

[52]: *#The image is just dumped into the working directory, we shall move it ↪ somewhere more fitting*

```

shutil.move('./CTM_Optimization_Convergence.png', './octis/results/
↪CTM_Optimization_Convergence.png')

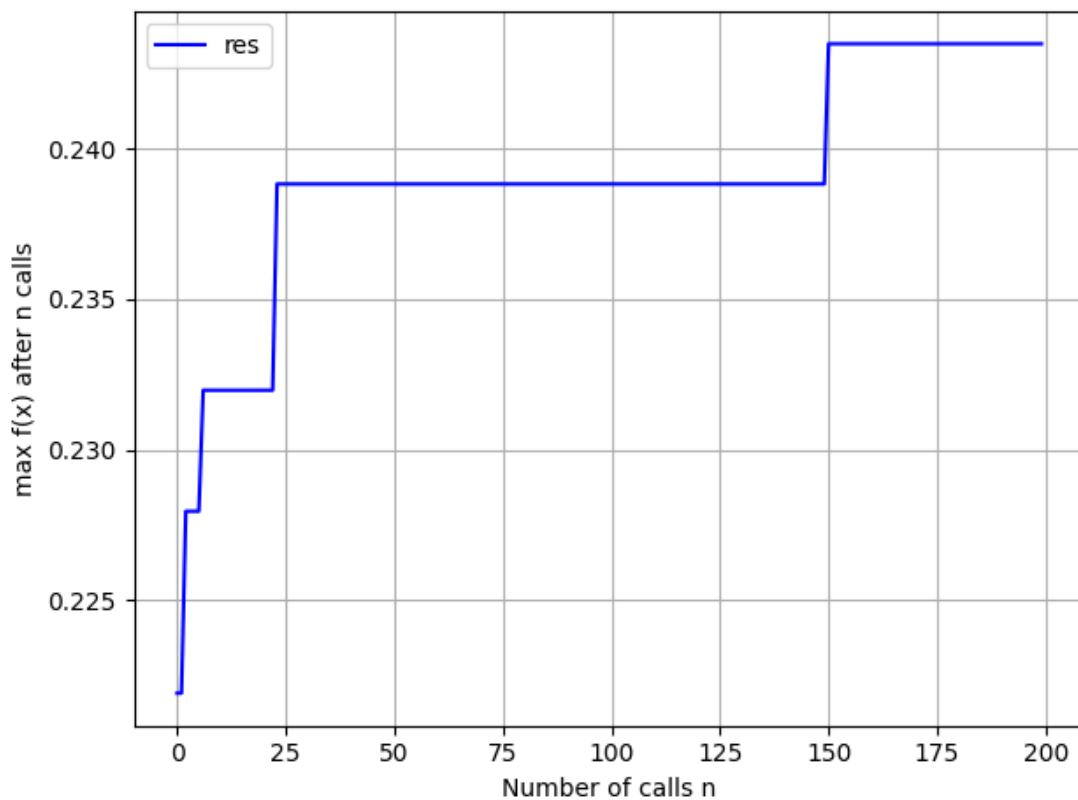
```

```

Image(filename='./octis/results/CTM_Optimization_Convergence.png')

```

[52]:



[46]: *# Plotting WECOherenceCentroid' and 'WordEmbeddingsInvertedRBOCentroid' our two ↪ metrics*

```

coherence_scores_CTM = [max(run) for run in optimizer_results_CTM.
    ↳info['dict_model_runs']['WECOherenceCentroid'].values()]
diversity_scores_CTM = [max(run) for run in optimizer_results_CTM.
    ↳info['dict_model_runs']['O_WordEmbeddingsInvertedRBOCentroid'].values()]

# Create a figure with twin y-axis for the second metric
fig, ax1 = plt.subplots(figsize=(10, 6))

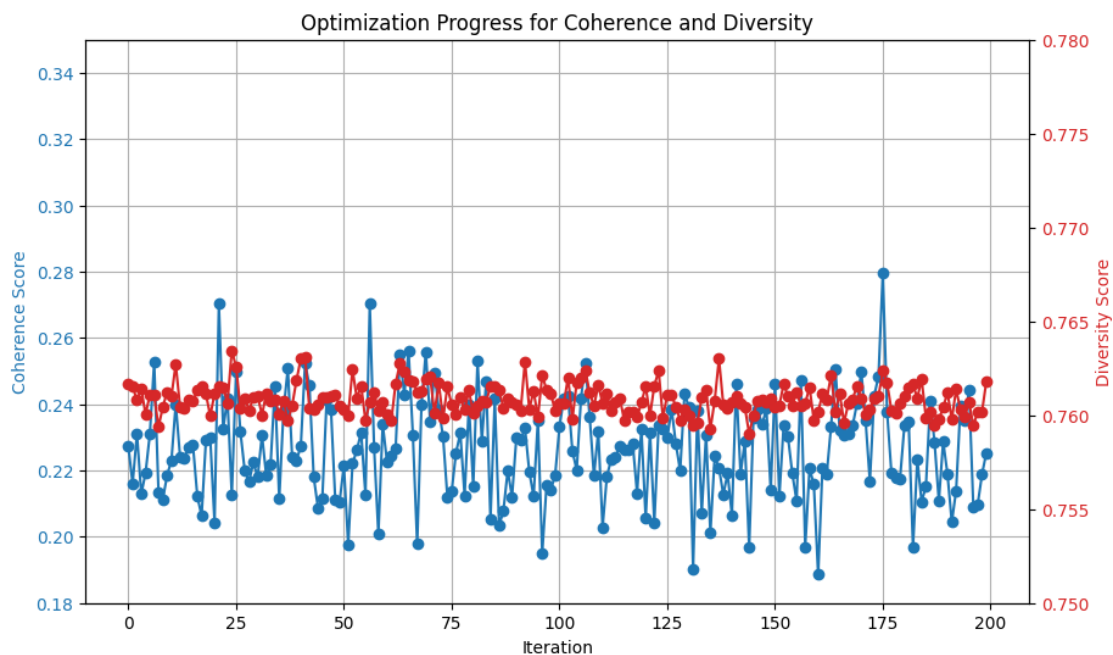
ax1.set_xlabel('Iteration')
ax1.set_ylabel('Coherence Score', color='tab:blue')
ax1.plot(coherence_scores_CTM, marker='o', color='tab:blue')
ax1.tick_params(axis='y', labelcolor='tab:blue')
ax1.set_ylim(0.18, 0.35)

ax2 = ax1.twinx()
ax2.set_ylabel('Diversity Score', color='tab:red')
ax2.plot(diversity_scores_CTM, marker='o', color='tab:red')
ax2.tick_params(axis='y', labelcolor='tab:red')
ax2.set_ylim(0.75, 0.78)

plt.title('Optimization Progress for Coherence and Diversity')
ax1.grid(True)

plt.show()

```



```
[48]: # Extract the best configurations based on coherence scores
coherence_scores_CTM = optimizer_results_CTM.
    ↳info['dict_model_runs']['WECOherenceCentroid']
diversity_scores_CTM = optimizer_results_CTM.
    ↳info['dict_model_runs']['O_WordEmbeddingsInvertedRBOCentroid']

# Extracting scores and hyperparameter configurations
combined_scores = []
for i, (coherence_run, diversity_run) in enumerate(zip(coherence_scores_CTM.
    ↳values(), diversity_scores_CTM.values())):
    max_coherence = max(coherence_run)
    max_diversity = max(diversity_run)
    num_topics = optimizer_results_CTM.info['x_iters']['num_topics'][i]
    num_layers = optimizer_results_CTM.info['x_iters']['num_layers'][i]
    num_neurons = optimizer_results_CTM.info['x_iters']['num_neurons'][i]
    learn_rate = optimizer_results_CTM.info['x_iters']['learn_rate'][i]
    optimizer_param = optimizer_results_CTM.info['x_iters']['optimizer'][i]
    dropout = optimizer_results_CTM.info['x_iters']['dropout'][i]

    combined_scores.append((max_coherence, max_diversity, num_topics,
    ↳num_layers, num_neurons, learn_rate, optimizer_param, dropout))

# Sort by coherence score first and take the top ten
top_ten_by_coherence = sorted(combined_scores, key=lambda x: x[0],
    ↳reverse=True)[:10]

# Select the configuration with the highest diversity score from the top ten
best_overall_CTM = max(top_ten_by_coherence, key=lambda x: x[1])

# Print the best configuration
print("Best Coherence Score:", best_overall_CTM[0])
print("Corresponding Diversity Score:", best_overall_CTM[1])
print("Best Configuration: num_topics =", best_overall_CTM[2], ", num_layers",
    ↳=", best_overall_CTM[3], ", num_neurons =", best_overall_CTM[4],
    ↳", learn_rate =", best_overall_CTM[5], ", optimizer =",
    ↳best_overall_CTM[6], ", dropout =", best_overall_CTM[7])
```

```
Best Coherence Score: 0.25242652543794375
Corresponding Diversity Score: 0.7631295026862059
Best Configuration: num_topics = 52 , num_layers = 1 , num_neurons = 1000 ,
learn_rate = 0.026875343602901114 , optimizer = SGD , dropout =
0.336284177347719
```

```
[50]: best_num_topics = best_overall_CTM[2]
best_num_layers = best_overall_CTM[3]
best_num_neurons = best_overall_CTM[4]
best_learn_rate = best_overall_CTM[5]
```

```

best_optimizer = best_overall_CTM[6]
best_dropout = best_overall_CTM[7]

# Now we instantiate the CTM model with the best hyperparameters
best_model_CTM = CTM(num_topics=best_num_topics,
                     num_layers=best_num_layers,
                     num_neurons=best_num_neurons,
                     solver=best_optimizer,
                     dropout=best_dropout,
                     batch_size=128,
                     use_partitions=False,
                     bert_path='./octis/models/'
                     #bert_path='.'
                     )

# Train the model with the dataset
best_model_CTM = best_model_CTM.train_model(dataset_final)

```

```

[51]: #dump(best_model_CTM, './octis/models/best_model_CTM.joblib', compress=('lzma', 9))
      ↪9))
best_model_CTM = load('./octis/models/best_model_CTM.joblib')

```

```

[52]: top_words_per_topic_CTM = best_model_CTM['topics']

# Display the top words for each topic
for topic_id, words in enumerate(top_words_per_topic_CTM):
    print("Topic", topic_id + 1, ":", words)

```

```

Topic 1 : ['driver', 'prophet', 'fruit', 'pit', 'royal', 'hither', 'queen',
'revenge', 'interview', 'consequences']
Topic 2 : ['driver', 'barn', 'marquis', 'marchioness', 'landlady', 'burrow',
'camels', 'vicar', 'farmer', 'crows']
Topic 3 : ['er', 'major', 'thro', 'evils', 'base', 'feeble', 'splendid',
'horrors', 'goodness', 'victims']
Topic 4 : ['curate', 'card', 'murdered', 'ceiling', 'punch', 'cornet', 'harbor',
'mill', 'treasure', 'cock']
Topic 5 : ['beds', 'crypt', 'lid', 'candles', 'lodged', 'honours', 'hath',
'daddy', 'trenchers', 'untied']
Topic 6 : ['lovers', 'build', 'dismal', 'site', 'earthly', 'suites', 'portal',
'brows', 'millions', 'slab']
Topic 7 : ['honourable', 'valid', 'reserving', 'vicar', 'arbours', 'partisan',
'sum', 'fashionable', 'crape', 'terrace']
Topic 8 : ['valid', 'mill', 'wagon', 'showman', 'vicar', 'hay', 'pinched',
'cabinets', 'barn', 'honourable']
Topic 9 : ['swiftly', 'churchyard', 'onward', 'ing', 'dressing', 'nobleman',
'con', 'woke', 'deliberately', 'brightly']
Topic 10 : ['honourable', 'harbor', 'toll', 'political', 'terrace',
'fashionable', 'sexton', 'auks', 'dismal', 'gills']

```

Topic 11 : ['column', 'recollections', 'marquis', 'frivolous', 'marchioness', 'fetch', 'meditation', 'deity', 'morbid', 'disorder']

Topic 12 : ['prophet', 'guilt', 'recollections', 'disgrace', 'remorse', 'sworn', 'heavens', 'cistern', 'nephew', 'ties']

Topic 13 : ['paw', 'sergeant', 'major', 'talisman', 'mask', 'abbot', 'knock', 'pinched', 'suites', 'examined']

Topic 14 : ['royal', 'galley', 'camp', 'proclaimed', 'steeple', 'tent', 'military', 'throne', 'queen', 'seclusion']

Topic 15 : ['beach', 'surf', 'weed', 'wave', 'pebbles', 'seclusion', 'precipice', 'chasm', 'tread', 'jammo']

Topic 16 : ['snaky', 'snakes', 'locks', 'wallet', 'sisters', 'slippers', 'helmet', 'shield', 'winged', 'fisherman']

Topic 17 : ['prophet', 'sworn', 'kings', 'beating', 'kingdom', 'queen', 'captain', 'sire', 'ridiculous', 'cistern']

Topic 18 : ['sorr', 'cavern', 'sez', 'cigar', 'spectre', 'loike', 'heat', 'gas', 'afterward', 'luncheon']

Topic 19 : ['camels', 'burrow', 'crows', 'wagon', 'showman', 'camp', 'brahmin', 'ledger', 'mummy', 'merry']

Topic 20 : ['mummy', 'congregation', 'unhappiness', 'vicar', 'galley', 'basely', 'steeple', 'fishermen', 'churchyard', 'fourth']

Topic 21 : ['fruit', 'gods', 'prince', 'ass', 'devotee', 'deity', 'throne', 'royal', 'religious', 'apple']

Topic 22 : ['governess', 'cheaile', 'brandy', 'gallery', 'link', 'background', 'slender', 'epitaph', 'm', 'housekeeper']

Topic 23 : ['crypt', 'sex', 'daddy', 'reserving', 'knack', 'valid', 'baby', 'vault', 'she', 'ride']

Topic 24 : ['mummy', 'flag', 'gods', 'harbor', 'hast', 'queen', 'gallery', 'singer', 'fourth', 'nobleman']

Topic 25 : ['honourable', 'willows', 'tent', 'vicar', 'housekeeper', 'fashionable', 'convict', 'sentry', 'poop', 'closet']

Topic 26 : ['crows', 'burrow', 'camels', 'valid', 'gas', 'arbours', 'portal', 'wedding', 'sails', 'chest']

Topic 27 : ['gallery', 'curate', 'helmet', 'military', 'emperor', 'punch', 'card', 'trap', 'encampment', 'camp']

Topic 28 : ['christabel', 'er', 'shield', 'prayed', 'spake', 'valid', 'sire', 'hath', 'doth', 'dove']

Topic 29 : ['sensibility', 'regiment', 'prince', 'stole', 'gaiety', 'continue', 'elegance', 'colonel', 'poverty', 'fort']

Topic 30 : ['rickshaw', 'mistake', 'farmer', 'harbor', 'bungalow', 'bonnet', 'auks', 'ride', 'gills', 'etched']

Topic 31 : ['snakes', 'shield', 'snaky', 'helmet', 'winged', 'locks', 'sisters', 'wallet', 'slippers', 'galley']

Topic 32 : ['ernest', 'album', 'snapped', 'isn', 'fountain', 'sculptor', 'audience', 'doesn', 'studio', 'grandfather']

Topic 33 : ['luck', 'club', 'goblins', 'miner', 'fun', 'millionaire', 'stake', 'players', 'if', 'copies']

Topic 34 : ['painter', 'convict', 'sentry', 'poop', 'canvass', 'paintings', 'cuddy', 'turret', 'main', 'painting']

Topic 35 : ['onnur', 'pinched', 'vault', 'revenge', 'chaise', 'disorder', 'size', 'crape', 'yard', 'minster']

Topic 36 : ['hay', 'barn', 'vicar', 'harbor', 'knife', 'realised', 'rope', 'pine', 'vivid', 'auks']

Topic 37 : ['flag', 'paint', 'gas', 'cart', 'singer', 'riding', 'bangle', 'purple', 'outline', 'attacked']

Topic 38 : ['rickshaw', 'mistake', 'bungalow', 'fan', 'sailor', 'wrist', 'verandah', 'whir', 'unhappiness', 'bungalows']

Topic 39 : ['toll', 'sergeant', 'captain', 'pirates', 'ice', 'now', 'fort', 'fishermen', 'science', 'cave']

Topic 40 : ['bushes', 'onnur', 'tent', 'pit', 'chasm', 'afterward', 'onward', 'structure', 'gun', 'continually']

Topic 41 : ['canoe', 'landing', 'cypresses', 'bespeak', 'sexton', 'ice', 'hath', 'betrothal', 'echoed', 'upstairs']

Topic 42 : ['onnur', 'pinched', 'rickshaw', 'mistake', 'bungalow', 'ing', 'con', 'chaise', 'tent', 'rode']

Topic 43 : ['wrist', 'mummy', 'wagon', 'showman', 'pinched', 'claws', 'camp', 'instructions', 'examined', 'bangle']

Topic 44 : ['monster', 'labyrinth', 'bull', 'housekeeper', 'royal', 'throne', 'goblet', 'sandals', 'closet', 'nephews']

Topic 45 : ['camp', 'canoe', 'bag', 'vacuum', 'landing', 'pistol', 'keyhole', 'realised', 'fireplace', 'whisky']

Topic 46 : ['curate', 'suites', 'knack', 'murdered', 'untied', 'cheaile', 'brig', 'chisel', 'editor', 'punch']

Topic 47 : ['youthful', 'ages', 'nunnery', 'lid', 'governor', 'untied', 'eldest', 'sensibility', 'gaiety', 'lively']

Topic 48 : ['canoe', 'nunnery', 'landing', 'upstairs', 'mask', 'verandah', 'governor', 'onnur', 'indian', 'rushing']

Topic 49 : ['plague', 'grocer', 'apprentice', 'willows', 'gallant', 'rejoined', 'lane', 'tent', 'pestilence', 'verger']

Topic 50 : ['mummy', 'singer', 'ceiling', 'swelling', 'gods', 'harpsichord', 'phrase', 'queen', 'hast', 'organ']

Topic 51 : ['sculptor', 'chisel', 'epitaph', 'wagon', 'showman', 'beds', 'earthly', 'slabs', 'slab', 'pirates']

Topic 52 : ['mill', 'abbot', 'gallery', 'helmet', 'sailor', 'godly', 'vault', 'lid', 'transformation', 'regent']

```
[53]: dump(top_words_per_topic_CTM, './analysis/top_words_per_topic_CTM.joblib')
```

```
[53]: ['./analysis/top_words_per_topic_CTM.joblib']
```

```
[54]: topic_document_matrix_CTM = best_model_CTM["topic-document-matrix"]
      topic_distribution_df_CTM =
        ↳get_document_topic_percentages(topic_document_matrix_CTM)
      topic_distribution_df_CTM.head(10)
```

[54]:

	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6	Topic 7	\
Document ID								
0	0.78	1.18	2.27	1.59	0.70	1.37	1.25	
1	2.97	1.33	1.90	3.48	1.10	1.64	1.85	
2	2.11	2.37	1.06	3.34	2.25	2.11	2.52	
3	0.58	0.92	1.63	0.73	0.29	0.67	0.41	
4	0.88	1.27	1.37	1.83	2.86	1.16	1.34	
5	1.27	0.82	1.26	1.07	3.70	2.22	1.25	
6	4.73	1.62	0.86	2.07	1.09	1.16	2.49	
7	3.19	2.26	1.36	2.19	4.39	1.96	1.61	
8	7.44	2.23	1.62	1.23	3.45	1.84	1.78	
9	2.79	2.82	1.06	3.18	2.21	1.62	2.52	

	Topic 8	Topic 9	Topic 10	...	Topic 43	Topic 44	Topic 45	\
Document ID				...				
0	4.50	1.59	2.67	...	0.91	0.98	1.23	
1	1.76	2.84	8.41	...	3.51	1.10	0.51	
2	2.24	0.66	2.45	...	6.01	1.54	1.61	
3	1.69	0.83	0.74	...	0.30	0.45	1.51	
4	1.29	1.35	1.67	...	4.09	1.60	0.87	
5	1.02	4.40	1.79	...	5.15	1.42	0.78	
6	1.82	0.56	1.84	...	1.02	0.79	1.59	
7	3.26	1.40	2.34	...	3.38	1.50	1.29	
8	1.19	1.02	2.62	...	1.44	1.26	0.94	
9	1.06	2.07	1.50	...	2.41	0.85	1.77	

	Topic 46	Topic 47	Topic 48	Topic 49	Topic 50	Topic 51	\
Document ID							
0	1.98	1.69	1.30	3.03	1.07	1.60	
1	2.30	1.73	1.40	0.78	3.97	0.98	
2	3.70	1.07	2.12	1.32	2.10	1.49	
3	1.10	2.33	0.88	0.54	4.56	0.52	
4	1.67	1.99	2.46	1.02	1.32	1.94	
5	1.79	0.89	0.59	1.14	1.85	1.42	
6	2.73	1.97	3.17	1.93	0.46	1.35	
7	1.79	1.93	1.70	1.02	0.69	1.67	
8	2.21	1.05	2.93	1.32	1.01	1.83	
9	2.93	1.59	1.19	1.04	0.88	2.11	

	Topic 52
Document ID	
0	6.30
1	2.00
2	0.65
3	25.20
4	1.39
5	0.31

```

6          2.75
7          0.52
8          1.17
9          1.65

```

[10 rows x 52 columns]

```

[55]: original_indexes = dataset_final._Dataset__original_indexes
      topic_distribution_df_CTM['Original Document Index'] = original_indexes

```

```

[56]: df_input['input_index'] = df_input.index
      df_input['ref'] = df_input['reference'].apply(lambda x: x.rsplit('_', 1)[0])
      df_merge = df_input.merge(df_ref, left_on='ref', right_on='reference',
                                how='left')
      df_merge['date'] = df_merge['date'].astype('Int64')
      df_merge['birthdate'] = df_merge['birthdate'].astype('Int64')
      df_merge.head()

```

```

[56]:                                     preprocessed_text_x      reference_x \
0  fragment adventure turned steed hoping cross d...      Aikin_SirBertran_1
1  plague portion ensuing relating street manner ...  Ainsworth_OldSaintPa_1
2  whatsoever away terms included language charac...  Ainsworth_Rookwood_1
3  doll wangos leaving justice skill witches spea...  Ainsworth_TheLancash_1
4  note text little work finished year intended i...  Austen_Northanger_1

```

```

      sentiment  input_index      ref  index      reference_y \
0    -0.9201          0      Aikin_SirBertran    0      Aikin_SirBertran
1     0.9773          1  Ainsworth_OldSaintPa    1  Ainsworth_OldSaintPa
2     0.9989          2  Ainsworth_Rookwood    2  Ainsworth_Rookwood
3    -0.9998          3  Ainsworth_TheLancash    3  Ainsworth_TheLancash
4     1.0000          4  Austen_Northanger    5  Austen_Northanger

```

```

                                     title \
0                                Sir Bertrand, A Fragment
1  Old Saint Paul's: A Tale of the Plague and the...
2                                Rookwood
3  The Lancashire Witches: A Romance of Pendle Fo...
4                                Northanger Abbey

```

```

      author  date  ...  mode  genre  gender \
0  Aikin, John and Anna Laetitia  1773  ...  Fragment  Gothic  NaN
1  Ainsworth, William Harrison  1841  ...    NaN    NaN    m
2  Ainsworth, William Harrison  1834  ...   Novel  Gothic    m
3  Ainsworth, William Harrison  1848  ...    NaN    NaN    m
4  Austen, Jane  1817  ...    NaN    NaN    f

```

```

      birthdate  nationality  role (central/peripheral/influence) \

```

0	<NA>	English	Central
1	1805	English	NaN
2	1805	English	Central
3	1805	English	NaN
4	1775	English	NaN

	text	source	\
0	SIR BERTRAND, A FRAGMENT:\n\nAFTER this advent...	colors	
1	OLD SAINT PAUL\'S\n\n _A TALE OF THE PLAGUE\n...	pb-manual	
2	\nThe Project Gutenberg EBook of Rookwood, by ...	colors	
3	Proofreading Team.\n\n\n\n\n\n\n[Illustration:...	pb-manual	
4	Northanger Abbey\n\n\nby Jane Austen\n\n\n(1803)...	gutenberg	

	preprocessed_text_y	\
0	fragment adventure turned steed hoping cross d...	
1	plague portion ensuing relating street manner ...	
2	whatsoever away terms included language charac...	
3	doll wangos leaving justice skill witches spea...	
4	note text little work finished year intended i...	

	tokenized_text
0	['fragment', 'adventure', 'turned', 'steed', '...
1	['plague', 'portion', 'ensuing', 'relating', '...
2	['whatsoever', 'away', 'terms', 'included', 'l...
3	['doll', 'wangos', 'leaving', 'justice', 'skil...
4	['note', 'text', 'little', 'work', 'finished', '...

[5 rows x 21 columns]

```
[57]: # merging of topic distribution with features
# reorganizing the order of columns and clean up
df_txt_features_CTM= df_merge.merge(topic_distribution_df_CTM,
    ↳right_on='Original Document Index', left_on='input_index')
df_txt_features_CTM=df_txt_features_CTM.drop(['text',
    ↳'preprocessed_text_y', 'tokenized_text', 'preprocessed_text_x', 'index',
    ↳'ref', 'Original Document Index'], axis=1)
df_txt_features_CTM.rename(columns={'reference_x': 'reference', 'reference_y':
    ↳'text_key'}, inplace=True)
df_txt_features_CTM = df_txt_features_CTM[['input_index'] + [col for col in
    ↳df_txt_features_CTM.columns if col != 'input_index']]
df_txt_features_CTM.rename(columns={'role (central/peripheral/influence)':
    ↳'role'}, inplace=True)
df_txt_features_CTM.head()
```

[57]:	input_index	reference	sentiment	text_key	\
0	0	Aikin_SirBertran_1	-0.9201	Aikin_SirBertran	
1	1	Ainsworth_OldSaintPa_1	0.9773	Ainsworth_OldSaintPa	

2	2	Ainsworth_Rookwood_1	0.9989	Ainsworth_Rookwood
3	3	Ainsworth_TheLancash_1	-0.9998	Ainsworth_TheLancash
4	4	Austen_Northanger_1	1.0000	Austen_Northanger

	title \
0	Sir Bertrand, A Fragment
1	Old Saint Paul's: A Tale of the Plague and the...
2	Rookwood
3	The Lancashire Witches: A Romance of Pendle Fo...
4	Northanger Abbey

	author	date	period	mode	genre	...	\
0	Aikin, John and Anna Laetitia	1773	Romantic	Fragment	Gothic	...	
1	Ainsworth, William Harrison	1841	NaN	NaN	NaN	...	
2	Ainsworth, William Harrison	1834	NaN	Novel	Gothic	...	
3	Ainsworth, William Harrison	1848	NaN	NaN	NaN	...	
4	Austen, Jane	1817	NaN	NaN	NaN	...	

	Topic 43	Topic 44	Topic 45	Topic 46	Topic 47	Topic 48	Topic 49	Topic 50	\
0	0.91	0.98	1.23	1.98	1.69	1.30	3.03	1.07	
1	3.51	1.10	0.51	2.30	1.73	1.40	0.78	3.97	
2	6.01	1.54	1.61	3.70	1.07	2.12	1.32	2.10	
3	0.30	0.45	1.51	1.10	2.33	0.88	0.54	4.56	
4	4.09	1.60	0.87	1.67	1.99	2.46	1.02	1.32	

	Topic 51	Topic 52
0	1.60	6.30
1	0.98	2.00
2	1.49	0.65
3	0.52	25.20
4	1.94	1.39

[5 rows x 67 columns]

```
[58]: df_txt_features_CTM.to_csv('./analysis/df_txt_features_CTM.csv', index=False)
# df_txt_features_CTM=pd.read_csv('./analysis/df_txt_features_CTM.csv')
```

pyLDAvis exports

```
[59]: topic_term_dists_CTM= best_model_CTM["topic-word-matrix"]
doc_topic_dists_CTM = best_model_CTM["topic-document-matrix"]
doc_topic_dists_CTM = doc_topic_dists_CTM.T
```

```
[60]: dump(topic_term_dists_CTM, './analysis/topic_term_dists_CTM.joblib')
dump(doc_topic_dists_CTM, './analysis/doc_topic_dists_CTM.joblib')
```

```
[60]: ['./analysis/doc_topic_dists_CTM.joblib']
```

ETM

```
[70]: # Initialize the CTM model with some default parameters
etm_model = ETM(batch_size=128, num_epochs=30, embeddings_path='word2vec_model.
    ↪bin')

# Define the hyperparameter space for CTM
parameter_space = {
    'num_topics': Integer(50, 100),
    'num_layers': Categorical([1, 2, 3]),
    'num_neurons': Categorical([100, 200, 300, 500, 750, 1000]),
    'learn_rate': Real(0.001, 0.1),
    'activation': Categorical(['sigmoid', 'softplus', 'selu']),
    'optimizer': Categorical(['adam', 'sgd', 'msprop']),
    'dropout': Real(0.0, 0.9, prior='uniform')
}

# Define the evaluation metric
coherence_centroid = WECOherenceCentroid(topk=20, word2vec_path='./word2vec/
    ↪word2vec_model.bin', binary=True)
DiversityCentroid = WordEmbeddingsInvertedRBOCentroid(topk=20, weight=0.9,
    ↪normalize=True, word2vec_path='./word2vec/word2vec_model.bin', binary=True)

# Run the hyperparameter optimization
start = time.time()

optimizer = Optimizer()
optimizer_results_ETM = optimizer.optimize(model=etm_model, dataset=dataset,
    ↪metric=coherence_centroid,
        search_space=parameter_space, number_of_call=200,
        n_random_starts=5, surrogate_model='RF',
        model_runs=3, save_models=True, topk=20,
        extra_metrics=[DiversityCentroid], save_path='./octis/
    ↪results/', plot_best_seen=True)

end = time.time()
duration = end - start

# Save the results
optimizer_results_ETM.save_to_csv("./octis/results/Opt_ETMresults.csv")

print('Optimizing model took: ' + str(round(duration)) + ' seconds.')
```

Current call: 0

```
model: ETM(
  (t_drop): Dropout(p=0.4555880049221471, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
```

```

(alphas): Linear(in_features=300, out_features=97, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=97, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=97, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 25.77 .. Rec_loss: 12265.32 .. NELBO:
12291.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.45 .. Rec_loss: 5448.24 .. NELBO: 5457.69
*****
*****
Validation loss decreased (inf --> 10915.387695). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 23.16 .. Rec_loss: 12265.32 .. NELBO:
12288.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.15 .. Rec_loss: 5448.24 .. NELBO: 5450.39
*****
*****
Validation loss decreased (10915.387695 --> 10900.763672). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 8.91 .. Rec_loss: 12265.32 .. NELBO:
12274.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5448.23 .. NELBO: 5448.43
*****
*****
Validation loss decreased (10900.763672 --> 10896.867188). Saving model ...
*****

```

```

*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 5.91 .. Rec_loss: 12265.32 .. NELBO:
12271.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5448.23 .. NELBO: 5448.38
*****
*****
Validation loss decreased (10896.867188 --> 10896.766602). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 5.5 .. Rec_loss: 12265.34 .. NELBO:
12270.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5448.23 .. NELBO: 5448.35
*****
*****
Validation loss decreased (10896.766602 --> 10896.697266). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 5.03 .. Rec_loss: 12265.3 .. NELBO:
12270.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.23 .. NELBO: 5448.32
*****
*****
Validation loss decreased (10896.697266 --> 10896.633789). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.79 .. Rec_loss: 12265.29 .. NELBO:
12270.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5448.22 .. NELBO: 5448.32
*****
*****
EarlyStopping counter: 1 out of 5
*****

```



```

*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.32 .. Rec_loss: 12265.27 .. NELBO:
12269.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.22 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.633789 --> 10896.561523). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 4.19 .. Rec_loss: 12265.29 .. NELBO:
12269.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.22 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.561523 --> 10896.554688). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 3.92 .. Rec_loss: 12265.29 .. NELBO:
12269.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.554688 --> 10896.520508). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.66 .. Rec_loss: 12265.26 .. NELBO:
12268.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.21 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.520508 --> 10896.499023). Saving model ...
*****

```

```

*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.52 .. Rec_loss: 12265.24 .. NELBO:
12268.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 3.36 .. Rec_loss: 12265.25 .. NELBO:
12268.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.21 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.499023 --> 10896.478516). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 3.19 .. Rec_loss: 12265.24 .. NELBO:
12268.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.2 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.478516 --> 10896.459961). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 2.97 .. Rec_loss: 12265.2 .. NELBO:
12268.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.2 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.459961 --> 10896.447266). Saving model ...
*****

```

```

*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 2.93 .. Rec_loss: 12265.2 .. NELBO:
12268.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.2 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.447266 --> 10896.441406). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 2.74 .. Rec_loss: 12265.18 .. NELBO:
12267.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.441406 --> 10896.429688). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 2.7 .. Rec_loss: 12265.2 .. NELBO:
12267.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.429688 --> 10896.422852). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 2.6 .. Rec_loss: 12265.23 .. NELBO:
12267.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.422852 --> 10896.408203). Saving model ...
*****

```

```

*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 2.44 .. Rec_loss: 12265.16 .. NELBO:
12267.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.408203 --> 10896.399414). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 2.41 .. Rec_loss: 12265.19 .. NELBO:
12267.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.18 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.399414 --> 10896.390625). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 2.27 .. Rec_loss: 12265.18 .. NELBO:
12267.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.18 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.390625 --> 10896.383789). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 2.23 .. Rec_loss: 12265.16 .. NELBO:
12267.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.383789 --> 10896.377930). Saving model ...
*****

```

```

*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 2.19 .. Rec_loss: 12265.15 .. NELBO:
12267.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.377930 --> 10896.366211). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 2.05 .. Rec_loss: 12265.12 .. NELBO:
12267.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.366211 --> 10896.360352). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 2.03 .. Rec_loss: 12265.11 .. NELBO:
12267.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.360352 --> 10896.356445). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 1.98 .. Rec_loss: 12265.11 .. NELBO:
12267.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.356445 --> 10896.345703). Saving model ...
*****

```

```

*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 1.91 .. Rec_loss: 12265.09 .. NELBO:
12267.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.345703 --> 10896.336914). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 1.84 .. Rec_loss: 12265.06 .. NELBO:
12266.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.336914 --> 10896.325195). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 12265.1 .. NELBO:
12266.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.325195 --> 10896.323242). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.4555880049221471, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=97, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=97, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=97, bias=True)

```

```

)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 27.31 .. Rec_loss: 12265.31 .. NELBO:
12292.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.33 .. Rec_loss: 5448.24 .. NELBO:
5458.57
*****
*****
Validation loss decreased (inf --> 10917.142578). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 24.1 .. Rec_loss: 12265.33 .. NELBO:
12289.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.86 .. Rec_loss: 5448.24 .. NELBO: 5450.1
*****
*****
Validation loss decreased (10917.142578 --> 10900.194336). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 8.13 .. Rec_loss: 12265.31 .. NELBO:
12273.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5448.24 .. NELBO: 5448.42
*****
*****
Validation loss decreased (10900.194336 --> 10896.830078). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 5.73 .. Rec_loss: 12265.31 .. NELBO:
12271.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5448.23 .. NELBO: 5448.38

```

```

*****
*****
Validation loss decreased (10896.830078 --> 10896.756836). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 5.33 .. Rec_loss: 12265.3 .. NELBO:
12270.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5448.23 .. NELBO: 5448.37
*****
*****
Validation loss decreased (10896.756836 --> 10896.734375). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 4.91 .. Rec_loss: 12265.27 .. NELBO:
12270.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.23 .. NELBO: 5448.32
*****
*****
Validation loss decreased (10896.734375 --> 10896.641602). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.57 .. Rec_loss: 12265.28 .. NELBO:
12269.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.22 .. NELBO: 5448.31
*****
*****
Validation loss decreased (10896.641602 --> 10896.615234). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.33 .. Rec_loss: 12265.24 .. NELBO:
12269.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.22 .. NELBO: 5448.29

```



```

*****
*****
Validation loss decreased (10896.615234 --> 10896.582031). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 4.09 .. Rec_loss: 12265.23 .. NELBO:
12269.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.22 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.582031 --> 10896.549805). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 3.86 .. Rec_loss: 12265.24 .. NELBO:
12269.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.549805 --> 10896.523438). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.62 .. Rec_loss: 12265.23 .. NELBO:
12268.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.21 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.523438 --> 10896.501953). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.39 .. Rec_loss: 12265.19 .. NELBO:
12268.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26

```

```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 3.29 .. Rec_loss: 12265.24 .. NELBO:
12268.53
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.2 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.501953 --> 10896.476562). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 3.13 .. Rec_loss: 12265.21 .. NELBO:
12268.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.2 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.476562 --> 10896.462891). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 2.95 .. Rec_loss: 12265.21 .. NELBO:
12268.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.2 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.462891 --> 10896.447266). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 2.92 .. Rec_loss: 12265.19 .. NELBO:
12268.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.2 .. NELBO: 5448.23

```

```

*****
*****
Validation loss decreased (10896.447266 --> 10896.442383). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 2.73 .. Rec_loss: 12265.19 .. NELBO:
12267.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.442383 --> 10896.426758). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 2.67 .. Rec_loss: 12265.21 .. NELBO:
12267.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.426758 --> 10896.413086). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 2.56 .. Rec_loss: 12265.15 .. NELBO:
12267.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.413086 --> 10896.407227). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 2.45 .. Rec_loss: 12265.15 .. NELBO:
12267.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2

```

```

*****
*****
Validation loss decreased (10896.407227 --> 10896.397461). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 2.4 .. Rec_loss: 12265.13 .. NELBO:
12267.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.18 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.397461 --> 10896.385742). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 2.27 .. Rec_loss: 12265.14 .. NELBO:
12267.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.385742 --> 10896.381836). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 2.21 .. Rec_loss: 12265.13 .. NELBO:
12267.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.381836 --> 10896.374023). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 2.12 .. Rec_loss: 12265.11 .. NELBO:
12267.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18

```

```

*****
*****
Validation loss decreased (10896.374023 --> 10896.359375). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 2.06 .. Rec_loss: 12265.11 .. NELBO:
12267.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.359375 --> 10896.351562). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 2.01 .. Rec_loss: 12265.1 .. NELBO:
12267.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.351562 --> 10896.346680). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 1.91 .. Rec_loss: 12265.09 .. NELBO:
12267.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.346680 --> 10896.335938). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 12265.08 .. NELBO:
12266.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16

```

```

*****
*****
Validation loss decreased (10896.335938 --> 10896.327148). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 1.84 .. Rec_loss: 12265.06 .. NELBO:
12266.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.327148 --> 10896.320312). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 1.81 .. Rec_loss: 12265.04 .. NELBO:
12266.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.320312 --> 10896.308594). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.4555880049221471, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=97, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=97, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=97, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 26.87 .. Rec_loss: 12265.38 .. NELBO:
12292.25
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.42 .. Rec_loss: 5448.25 .. NELBO: 5457.67
*****
*****
Validation loss decreased (inf --> 10915.334961). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 23.27 .. Rec_loss: 12265.34 .. NELBO:
12288.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.02 .. Rec_loss: 5448.24 .. NELBO: 5450.26
*****
*****
Validation loss decreased (10915.334961 --> 10900.516602). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 8.37 .. Rec_loss: 12265.36 .. NELBO:
12273.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5448.23 .. NELBO: 5448.46
*****
*****
Validation loss decreased (10900.516602 --> 10896.922852). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 5.94 .. Rec_loss: 12265.36 .. NELBO:
12271.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5448.22 .. NELBO: 5448.36
*****
*****
Validation loss decreased (10896.922852 --> 10896.735352). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 5.37 .. Rec_loss: 12265.32 .. NELBO:
12270.69
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5448.22 .. NELBO: 5448.36
*****
*****
Validation loss decreased (10896.735352 --> 10896.711914). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 5.05 .. Rec_loss: 12265.31 .. NELBO:
12270.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.22 .. NELBO: 5448.3
*****
*****
Validation loss decreased (10896.711914 --> 10896.597656). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.75 .. Rec_loss: 12265.31 .. NELBO:
12270.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.21 .. NELBO: 5448.29
*****
*****
Validation loss decreased (10896.597656 --> 10896.585938). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.4 .. Rec_loss: 12265.31 .. NELBO:
12269.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.21 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.585938 --> 10896.557617). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 4.1 .. Rec_loss: 12265.33 .. NELBO:
12269.43
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.557617 --> 10896.504883). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 3.98 .. Rec_loss: 12265.29 .. NELBO:
12269.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.72 .. Rec_loss: 12265.28 .. NELBO:
12269.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.2 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.504883 --> 10896.503906). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.47 .. Rec_loss: 12265.24 .. NELBO:
12268.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.2 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.503906 --> 10896.460938). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 3.42 .. Rec_loss: 12265.27 .. NELBO:
12268.69
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.19 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.460938 --> 10896.447266). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 3.19 .. Rec_loss: 12265.25 .. NELBO:
12268.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.19 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.447266 --> 10896.440430). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 3.05 .. Rec_loss: 12265.24 .. NELBO:
12268.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.19 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.440430 --> 10896.430664). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 2.88 .. Rec_loss: 12265.23 .. NELBO:
12268.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.18 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.430664 --> 10896.424805). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 2.78 .. Rec_loss: 12265.22 .. NELBO:
12268.0
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.424805 --> 10896.399414). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 2.71 .. Rec_loss: 12265.2 .. NELBO:
12267.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.399414 --> 10896.388672). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 2.61 .. Rec_loss: 12265.22 .. NELBO:
12267.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.388672 --> 10896.385742). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 2.51 .. Rec_loss: 12265.2 .. NELBO:
12267.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.385742 --> 10896.382812). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 2.36 .. Rec_loss: 12265.18 .. NELBO:
12267.54
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.382812 --> 10896.361328). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 2.35 .. Rec_loss: 12265.14 .. NELBO:
12267.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.16 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.361328 --> 10896.360352). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 2.18 .. Rec_loss: 12265.14 .. NELBO:
12267.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.360352 --> 10896.348633). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 2.18 .. Rec_loss: 12265.14 .. NELBO:
12267.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.348633 --> 10896.335938). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 2.1 .. Rec_loss: 12265.17 .. NELBO:
12267.27
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.335938 --> 10896.324219). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 1.99 .. Rec_loss: 12265.13 .. NELBO:
12267.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.324219 --> 10896.313477). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 1.92 .. Rec_loss: 12265.12 .. NELBO:
12267.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.313477 --> 10896.309570). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 1.87 .. Rec_loss: 12265.13 .. NELBO:
12267.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.309570 --> 10896.298828). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 1.83 .. Rec_loss: 12265.09 .. NELBO:
12266.92
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.298828 --> 10896.290039). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 1.81 .. Rec_loss: 12265.09 .. NELBO:
12266.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.290039 --> 10896.281250). Saving model ...
Current call: 1
model: ETM(
  (t_drop): Dropout(p=0.8566522514169307, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 25.07 .. Rec_loss: 12264.02 .. NELBO:
12289.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5443.64 .. NELBO: 5444.17
*****
*****
Validation loss decreased (inf --> 10888.331055). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.08 .. Rec_loss: 12245.27 .. NELBO:

```

```

12246.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5428.8 .. NELB0: 5428.82
*****
*****
Validation loss decreased (10888.331055 --> 10857.649414). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12197.03 .. NELB0:
12197.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5402.29 .. NELB0: 5402.3
*****
*****
Validation loss decreased (10857.649414 --> 10804.614258). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12117.12 .. NELB0:
12117.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5367.09 .. NELB0: 5367.1
*****
*****
Validation loss decreased (10804.614258 --> 10734.200195). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12013.07 .. NELB0:
12013.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5330.9 .. NELB0: 5330.92
*****
*****
Validation loss decreased (10734.200195 --> 10661.837891). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11905.36 .. NELB0:

```

```

11905.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5305.83 .. NELB0: 5305.85
*****
*****
Validation loss decreased (10661.837891 --> 10611.698242). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11822.05 .. NELB0:
11822.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5302.68 .. NELB0: 5302.7
*****
*****
Validation loss decreased (10611.698242 --> 10605.405273). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11783.47 .. NELB0:
11783.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5320.34 .. NELB0: 5320.37
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11785.43 .. NELB0:
11785.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5342.17 .. NELB0: 5342.2
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11795.98 .. NELB0:

```



```

11796.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.64 .. NELBO: 5352.67
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11793.03 .. NELBO:
11793.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5350.85 .. NELBO: 5350.88
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11779.19 .. NELBO:
11779.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.88 .. NELBO: 5343.9
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.8566522514169307, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)

```

```

*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 26.91 .. Rec_loss: 12264.06 .. NELBO:
12290.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 5443.83 .. NELBO: 5444.42
*****
*****
Validation loss decreased (inf --> 10888.828125). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 1.15 .. Rec_loss: 12246.14 .. NELBO:
12247.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5429.42 .. NELBO: 5429.44
*****
*****
Validation loss decreased (10888.828125 --> 10858.880859). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12199.22 .. NELBO:
12199.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5403.39 .. NELBO: 5403.4
*****
*****
Validation loss decreased (10858.880859 --> 10806.805664). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12120.16 .. NELBO:
12120.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5368.37 .. NELBO: 5368.38
*****
*****
Validation loss decreased (10806.805664 --> 10736.764648). Saving model ...

```

```

*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12017.23 .. NELBO:
12017.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5331.92 .. NELBO: 5331.93
*****
*****
Validation loss decreased (10736.764648 --> 10663.876953). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11908.97 .. NELBO:
11909.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5306.17 .. NELBO: 5306.19
*****
*****
Validation loss decreased (10663.876953 --> 10612.375000). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11823.79 .. NELBO:
11823.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5302.33 .. NELBO: 5302.35
*****
*****
Validation loss decreased (10612.375000 --> 10604.705078). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.88 .. NELBO:
11783.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5319.82 .. NELBO: 5319.85
*****
*****
EarlyStopping counter: 1 out of 5

```

```

*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11785.43 .. NELBO:
11785.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5342.08 .. NELBO: 5342.11
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.25 .. NELBO:
11796.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.95 .. NELBO: 5352.98
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.46 .. NELBO:
11793.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.26 .. NELBO: 5351.28
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.42 .. NELBO:
11779.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.2 .. NELBO: 5344.22
*****
*****
EarlyStopping counter: 5 out of 5

```

Early stopping

```
model: ETM(
  (t_drop): Dropout(p=0.8566522514169307, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 25.05 .. Rec_loss: 12264.12 .. NELBO:
12289.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5443.81 .. NELBO: 5444.32
*****
*****
Validation loss decreased (inf --> 10888.652344). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 0.99 .. Rec_loss: 12245.76 .. NELBO:
12246.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5428.96 .. NELBO: 5428.98
*****
*****
Validation loss decreased (10888.652344 --> 10857.956055). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12197.15 .. NELBO:
12197.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5402.31 .. NELBO: 5402.32
```

```

*****
*****
Validation loss decreased (10857.956055 --> 10804.645508). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12116.75 .. NELBO:
12116.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5366.83 .. NELBO: 5366.84
*****
*****
Validation loss decreased (10804.645508 --> 10733.683594). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12012.85 .. NELBO:
12012.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5330.43 .. NELBO: 5330.45
*****
*****
Validation loss decreased (10733.683594 --> 10660.890625). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11904.02 .. NELBO:
11904.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5305.46 .. NELBO: 5305.48
*****
*****
Validation loss decreased (10660.890625 --> 10610.955078). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11820.74 .. NELBO:
11820.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5302.86 .. NELBO: 5302.88

```

```

*****
*****
Validation loss decreased (10610.955078 --> 10605.763672). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11783.24 .. NELBO:
11783.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5321.11 .. NELBO: 5321.14
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11785.91 .. NELBO:
11785.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5343.07 .. NELBO: 5343.1
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.89 .. NELBO:
11796.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.14 .. NELBO: 5353.16
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.85 .. NELBO:
11792.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.95 .. NELBO: 5350.97

```

```

*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11778.5 .. NELBO:
11778.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.83 .. NELBO: 5343.85
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 2
model: ETM(
  (t_drop): Dropout(p=0.23214308260042685, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=56, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=56, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=56, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.37 .. NELBO:
12265.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.22 .. NELBO: 5448.23
*****
*****
Validation loss decreased (inf --> 10896.470703). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.33 .. NELBO:
12265.36

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.22 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.470703 --> 10896.457031). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.3 .. NELBO:
12265.33
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.21 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.457031 --> 10896.444336). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.29 .. NELBO:
12265.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.2 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.444336 --> 10896.431641). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.28 .. NELBO:
12265.31
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.2 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.431641 --> 10896.420898). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.27 .. NELBO:
12265.3

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.19 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.420898 --> 10896.407227). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.23 .. NELBO:
12265.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.19 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.407227 --> 10896.392578). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.25 .. NELBO:
12265.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.18 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.392578 --> 10896.380859). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.19 .. NELBO:
12265.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.380859 --> 10896.368164). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.17 .. NELBO:
12265.19

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.368164 --> 10896.355469). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.2 .. NELBO:
12265.22
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.355469 --> 10896.343750). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.21 .. NELBO:
12265.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.343750 --> 10896.330078). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.14 .. NELBO:
12265.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.330078 --> 10896.317383). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.12 .. NELBO:
12265.14

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.317383 --> 10896.305664). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.11 .. NELBO:
12265.13
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.305664 --> 10896.291016). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.1 .. NELBO:
12265.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.291016 --> 10896.278320). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.04 .. NELBO:
12265.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.278320 --> 10896.265625). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.04 .. NELBO:
12265.06

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```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.12 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.265625 --> 10896.250977). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.04 .. NELBO:
12265.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.11 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.250977 --> 10896.237305). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.0 .. NELBO:
12265.02
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.11 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.237305 --> 10896.224609). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.0 .. NELBO:
12265.02
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.1 .. NELBO: 5448.11
*****
*****
Validation loss decreased (10896.224609 --> 10896.210938). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12265.02 .. NELBO:
12265.03

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*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.09 .. NELBO: 5448.1
*****
*****
Validation loss decreased (10896.210938 --> 10896.197266). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.95 .. NELBO:
12264.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.09 .. NELBO: 5448.1
*****
*****
Validation loss decreased (10896.197266 --> 10896.181641). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.93 .. NELBO:
12264.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.08 .. NELBO: 5448.09
*****
*****
Validation loss decreased (10896.181641 --> 10896.166992). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.93 .. NELBO:
12264.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.07 .. NELBO: 5448.07
*****
*****
Validation loss decreased (10896.166992 --> 10896.153320). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.92 .. NELBO:
12264.93

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```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.06 .. NELBO: 5448.06
*****
*****
Validation loss decreased (10896.153320 --> 10896.139648). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.87 .. NELBO:
12264.88
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.06 .. NELBO: 5448.06
*****
*****
Validation loss decreased (10896.139648 --> 10896.122070). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.86 .. NELBO:
12264.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.05 .. NELBO: 5448.05
*****
*****
Validation loss decreased (10896.122070 --> 10896.107422). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.85 .. NELBO:
12264.86
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.04 .. NELBO: 5448.04
*****
*****
Validation loss decreased (10896.107422 --> 10896.091797). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.85 .. NELBO:
12264.86

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*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.03 .. NELBO: 5448.03
*****
*****
Validation loss decreased (10896.091797 --> 10896.076172). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.23214308260042685, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=56, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=56, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=56, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.32 .. NELBO:
12265.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.23 .. NELBO: 5448.24
*****
*****
Validation loss decreased (inf --> 10896.484375). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.35 .. NELBO:
12265.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.22 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.484375 --> 10896.471680). Saving model ...
*****

```



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*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.33 .. NELBO:
12265.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.22 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.471680 --> 10896.458984). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.29 .. NELBO:
12265.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.21 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.458984 --> 10896.449219). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.29 .. NELBO:
12265.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.21 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.449219 --> 10896.437500). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.29 .. NELBO:
12265.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.2 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.437500 --> 10896.423828). Saving model ...
*****

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```

*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.28 .. NELBO:
12265.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.2 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.423828 --> 10896.413086). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.24 .. NELBO:
12265.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.19 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.413086 --> 10896.400391). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.25 .. NELBO:
12265.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.19 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.400391 --> 10896.388672). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.2 .. NELBO:
12265.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.18 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.388672 --> 10896.376953). Saving model ...
*****

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```

*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.22 .. NELBO:
12265.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.376953 --> 10896.366211). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.18 .. NELBO:
12265.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.366211 --> 10896.353516). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.16 .. NELBO:
12265.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.353516 --> 10896.340820). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.15 .. NELBO:
12265.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.340820 --> 10896.329102). Saving model ...
*****

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```

*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.14 .. NELBO:
12265.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.329102 --> 10896.318359). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.12 .. NELBO:
12265.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.318359 --> 10896.306641). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.13 .. NELBO:
12265.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.306641 --> 10896.292969). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.11 .. NELBO:
12265.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.292969 --> 10896.280273). Saving model ...
*****

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*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.1 .. NELBO:
12265.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.280273 --> 10896.267578). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.08 .. NELBO:
12265.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.12 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.267578 --> 10896.254883). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12265.07 .. NELBO:
12265.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.12 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.254883 --> 10896.242188). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12265.04 .. NELBO:
12265.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.11 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.242188 --> 10896.228516). Saving model ...
*****

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*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12265.03 .. NELBO:
12265.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.1 .. NELBO: 5448.11
*****
*****
Validation loss decreased (10896.228516 --> 10896.214844). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.99 .. NELBO:
12265.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.1 .. NELBO: 5448.1
*****
*****
Validation loss decreased (10896.214844 --> 10896.204102). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12265.0 .. NELBO:
12265.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.09 .. NELBO: 5448.09
*****
*****
Validation loss decreased (10896.204102 --> 10896.188477). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.95 .. NELBO:
12264.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.08 .. NELBO: 5448.08
*****
*****
Validation loss decreased (10896.188477 --> 10896.176758). Saving model ...
*****

```

```

*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.95 .. NELBO:
12264.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.08 .. NELBO: 5448.08
*****
*****
Validation loss decreased (10896.176758 --> 10896.161133). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.92 .. NELBO:
12264.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.07 .. NELBO: 5448.07
*****
*****
Validation loss decreased (10896.161133 --> 10896.146484). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.89 .. NELBO:
12264.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.06 .. NELBO: 5448.06
*****
*****
Validation loss decreased (10896.146484 --> 10896.132812). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.92 .. NELBO:
12264.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.06 .. NELBO: 5448.06
*****
*****
Validation loss decreased (10896.132812 --> 10896.119141). Saving model ...
model: ETM(

```

```

(t_drop): Dropout(p=0.23214308260042685, inplace=False)
(theta_act): SELU()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=56, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): SELU()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=56, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=56, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12265.39 .. NELBO:
12265.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.27 .. NELBO: 5448.29
*****
*****
Validation loss decreased (inf --> 10896.572266). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12265.4 .. NELBO:
12265.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.26 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.572266 --> 10896.560547). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12265.36 .. NELBO:
12265.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.26 .. NELBO: 5448.28
*****
*****

```



```

*****
Validation loss decreased (10896.560547 --> 10896.547852). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12265.35 .. NELBO:
12265.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.25 .. NELBO: 5448.27
*****
*****
Validation loss decreased (10896.547852 --> 10896.535156). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.32 .. NELBO:
12265.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.25 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.535156 --> 10896.523438). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.32 .. NELBO:
12265.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.24 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.523438 --> 10896.511719). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.33 .. NELBO:
12265.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.24 .. NELBO: 5448.25
*****

```

```

*****
Validation loss decreased (10896.511719 --> 10896.500000). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.31 .. NELBO:
12265.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.23 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.500000 --> 10896.489258). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.29 .. NELBO:
12265.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.23 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.489258 --> 10896.477539). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.24 .. NELBO:
12265.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.22 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.477539 --> 10896.465820). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.25 .. NELBO:
12265.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.22 .. NELBO: 5448.23
*****

```

```

*****
Validation loss decreased (10896.465820 --> 10896.454102). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12265.26 .. NELBO:
12265.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.21 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.454102 --> 10896.443359). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.22 .. NELBO:
12265.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.21 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.443359 --> 10896.431641). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.22 .. NELBO:
12265.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.2 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.431641 --> 10896.420898). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.19 .. NELBO:
12265.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.2 .. NELBO: 5448.21
*****

```

```

*****
Validation loss decreased (10896.420898 --> 10896.409180). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.19 .. NELBO:
12265.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.19 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.409180 --> 10896.396484). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.16 .. NELBO:
12265.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.18 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.396484 --> 10896.385742). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.12 .. NELBO:
12265.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.18 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.385742 --> 10896.373047). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.11 .. NELBO:
12265.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****

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```

*****
Validation loss decreased (10896.373047 --> 10896.362305). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.1 .. NELBO:
12265.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.362305 --> 10896.349609). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.1 .. NELBO:
12265.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.349609 --> 10896.337891). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.05 .. NELBO:
12265.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.337891 --> 10896.325195). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.09 .. NELBO:
12265.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****

```

```

*****
Validation loss decreased (10896.325195 --> 10896.313477). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.06 .. NELBO:
12265.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.313477 --> 10896.301758). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.04 .. NELBO:
12265.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.301758 --> 10896.287109). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12265.02 .. NELBO:
12265.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.287109 --> 10896.276367). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12265.03 .. NELBO:
12265.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****

```

```

*****
Validation loss decreased (10896.276367 --> 10896.262695). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.97 .. NELBO:
12264.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.12 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.262695 --> 10896.250977). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.99 .. NELBO:
12265.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.11 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.250977 --> 10896.236328). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 12264.95 .. NELBO:
12264.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.11 .. NELBO: 5448.11
*****
*****
Validation loss decreased (10896.236328 --> 10896.223633). Saving model ...
Current call: 3
model: ETM(
  (t_drop): Dropout(p=0.5503350599444883, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)

```

```

    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 7.68 .. Rec_loss: 12265.34 .. NELBO:
12273.02
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5448.23 .. NELBO: 5448.35
*****
*****
Validation loss decreased (inf --> 10896.682617). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 5.53 .. Rec_loss: 12265.34 .. NELBO:
12270.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5448.22 .. NELBO: 5448.33
*****
*****
Validation loss decreased (10896.682617 --> 10896.669922). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 5.61 .. Rec_loss: 12265.31 .. NELBO:
12270.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5448.22 .. NELBO: 5448.34
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 5.51 .. Rec_loss: 12265.32 .. NELBO:
12270.83
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5448.21 .. NELBO: 5448.31
*****
*****
Validation loss decreased (10896.669922 --> 10896.619141). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 5.4 .. Rec_loss: 12265.28 .. NELBO:
12270.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5448.21 .. NELBO: 5448.32
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 5.2 .. Rec_loss: 12265.27 .. NELBO:
12270.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5448.21 .. NELBO: 5448.31
*****
*****
Validation loss decreased (10896.619141 --> 10896.605469). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.17 .. Rec_loss: 12265.31 .. NELBO:
12270.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.2 .. NELBO: 5448.27
*****
*****
Validation loss decreased (10896.605469 --> 10896.549805). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 5.06 .. Rec_loss: 12265.25 .. NELBO:
12270.31
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5448.2 .. NELBO: 5448.3
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 4.94 .. Rec_loss: 12265.23 .. NELBO:
12270.17
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.19 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.549805 --> 10896.532227). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 4.75 .. Rec_loss: 12265.24 .. NELBO:
12269.99
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.19 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.532227 --> 10896.530273). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.68 .. Rec_loss: 12265.23 .. NELBO:
12269.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.19 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.530273 --> 10896.501953). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 4.67 .. Rec_loss: 12265.19 .. NELBO:
12269.86
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.18 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.501953 --> 10896.482422). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 4.57 .. Rec_loss: 12265.2 .. NELBO:
12269.77
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.18 .. NELBO: 5448.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 4.55 .. Rec_loss: 12265.16 .. NELBO:
12269.71
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.17 .. NELBO: 5448.24
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 4.35 .. Rec_loss: 12265.19 .. NELBO:
12269.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.17 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.482422 --> 10896.449219). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 4.42 .. Rec_loss: 12265.13 .. NELBO:
12269.55
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.16 .. NELBO: 5448.23
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 4.34 .. Rec_loss: 12265.15 .. NELBO:
12269.49
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.16 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.449219 --> 10896.427734). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 4.19 .. Rec_loss: 12265.13 .. NELBO:
12269.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.16 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.427734 --> 10896.424805). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 4.1 .. Rec_loss: 12265.12 .. NELBO:
12269.22
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.15 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.424805 --> 10896.398438). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 4.02 .. Rec_loss: 12265.14 .. NELBO:
12269.16
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.15 .. NELBO: 5448.2
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 4.05 .. Rec_loss: 12265.11 .. NELBO:
12269.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.14 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.398438 --> 10896.374023). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 3.88 .. Rec_loss: 12265.09 .. NELBO:
12268.97
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.14 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.374023 --> 10896.363281). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 3.88 .. Rec_loss: 12265.09 .. NELBO:
12268.97
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.14 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.363281 --> 10896.352539). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 3.75 .. Rec_loss: 12265.04 .. NELBO:
12268.79
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.13 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.352539 --> 10896.348633). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 3.78 .. Rec_loss: 12265.05 .. NELBO:
12268.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.13 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.348633 --> 10896.348633). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 3.68 .. Rec_loss: 12265.05 .. NELBO:
12268.73
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.12 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.348633 --> 10896.321289). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 3.59 .. Rec_loss: 12265.03 .. NELBO:
12268.62
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.12 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.321289 --> 10896.291016). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 3.54 .. Rec_loss: 12264.98 .. NELBO:
12268.52
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.11 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.291016 --> 10896.281250). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 3.54 .. Rec_loss: 12264.98 .. NELBO:
12268.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.11 .. NELBO: 5448.15
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 3.44 .. Rec_loss: 12265.0 .. NELBO:
12268.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.1 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.281250 --> 10896.265625). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.5503350599444883, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 7.88 .. Rec_loss: 12265.37 .. NELBO:
12273.25
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5448.24 .. NELBO: 5448.4
*****
*****
Validation loss decreased (inf --> 10896.797852). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 5.73 .. Rec_loss: 12265.35 .. NELBO:
12271.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5448.24 .. NELBO: 5448.35
*****
*****
Validation loss decreased (10896.797852 --> 10896.694336). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 5.51 .. Rec_loss: 12265.33 .. NELBO:
12270.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5448.23 .. NELBO: 5448.33
*****
*****
Validation loss decreased (10896.694336 --> 10896.667969). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 5.41 .. Rec_loss: 12265.31 .. NELBO:
12270.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.23 .. NELBO: 5448.32
*****
*****
Validation loss decreased (10896.667969 --> 10896.642578). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 5.41 .. Rec_loss: 12265.3 .. NELBO:
12270.71
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.22 .. NELBO: 5448.31
*****
*****
Validation loss decreased (10896.642578 --> 10896.623047). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 5.21 .. Rec_loss: 12265.28 .. NELBO:
12270.49
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.22 .. NELBO: 5448.31
*****
*****
Validation loss decreased (10896.623047 --> 10896.615234). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.98 .. Rec_loss: 12265.3 .. NELBO:
12270.28
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.21 .. NELBO: 5448.29
*****
*****
Validation loss decreased (10896.615234 --> 10896.585938). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.98 .. Rec_loss: 12265.28 .. NELBO:
12270.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.21 .. NELBO: 5448.29
*****
*****
Validation loss decreased (10896.585938 --> 10896.570312). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 4.88 .. Rec_loss: 12265.25 .. NELBO:
12270.13
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.21 .. NELBO: 5448.29
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 4.81 .. Rec_loss: 12265.26 .. NELBO:
12270.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.2 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.570312 --> 10896.564453). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.59 .. Rec_loss: 12265.21 .. NELBO:
12269.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.2 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.564453 --> 10896.519531). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 4.68 .. Rec_loss: 12265.26 .. NELBO:
12269.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.19 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.519531 --> 10896.514648). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 4.6 .. Rec_loss: 12265.21 .. NELBO:
12269.81
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.19 .. NELBO: 5448.27
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 4.51 .. Rec_loss: 12265.23 .. NELBO:
12269.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.18 .. NELBO: 5448.25
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 4.3 .. Rec_loss: 12265.2 .. NELBO:
12269.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.18 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.514648 --> 10896.485352). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 4.24 .. Rec_loss: 12265.18 .. NELBO:
12269.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.18 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.485352 --> 10896.464844). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 4.23 .. Rec_loss: 12265.15 .. NELBO:
12269.38
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.17 .. NELBO: 5448.23
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 4.13 .. Rec_loss: 12265.15 .. NELBO:
12269.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.17 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.464844 --> 10896.426758). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 4.01 .. Rec_loss: 12265.11 .. NELBO:
12269.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.16 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.426758 --> 10896.423828). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 3.95 .. Rec_loss: 12265.1 .. NELBO:
12269.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.16 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.423828 --> 10896.416992). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 3.88 .. Rec_loss: 12265.11 .. NELBO:
12268.99
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.15 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.416992 --> 10896.399414). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 3.91 .. Rec_loss: 12265.09 .. NELBO:
12269.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.15 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.399414 --> 10896.371094). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 3.83 .. Rec_loss: 12265.11 .. NELBO:
12268.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.14 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.371094 --> 10896.364258). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 3.77 .. Rec_loss: 12265.03 .. NELBO:
12268.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.14 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.364258 --> 10896.362305). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 3.67 .. Rec_loss: 12265.05 .. NELBO:
12268.72
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.13 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.362305 --> 10896.340820). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 3.62 .. Rec_loss: 12265.05 .. NELBO:
12268.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.13 .. NELBO: 5448.18
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 3.51 .. Rec_loss: 12265.02 .. NELBO:
12268.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.12 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.340820 --> 10896.313477). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 3.52 .. Rec_loss: 12264.99 .. NELBO:
12268.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.12 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.313477 --> 10896.307617). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 3.48 .. Rec_loss: 12264.97 .. NELBO:
12268.45
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.11 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.307617 --> 10896.297852). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 3.3 .. Rec_loss: 12264.97 .. NELBO:
12268.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.11 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.297852 --> 10896.279297). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.5503350599444883, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 8.73 .. Rec_loss: 12265.32 .. NELBO:
12274.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5448.22 .. NELBO: 5448.41
*****
*****
Validation loss decreased (inf --> 10896.828125). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 5.8 .. Rec_loss: 12265.25 .. NELBO:

```

```
12271.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5448.22 .. NELB0: 5448.32
*****
*****
Validation loss decreased (10896.828125 --> 10896.641602). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 5.64 .. Rec_loss: 12265.27 .. NELB0:
12270.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5448.21 .. NELB0: 5448.31
*****
*****
Validation loss decreased (10896.641602 --> 10896.627930). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 5.32 .. Rec_loss: 12265.28 .. NELB0:
12270.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.21 .. NELB0: 5448.3
*****
*****
Validation loss decreased (10896.627930 --> 10896.598633). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 5.22 .. Rec_loss: 12265.28 .. NELB0:
12270.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.21 .. NELB0: 5448.3
*****
*****
Validation loss decreased (10896.598633 --> 10896.596680). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 5.25 .. Rec_loss: 12265.25 .. NELB0:
```



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12270.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.2 .. NELB0: 5448.29
*****
*****
Validation loss decreased (10896.596680 --> 10896.583008). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.0 .. Rec_loss: 12265.26 .. NELB0:
12270.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.2 .. NELB0: 5448.28
*****
*****
Validation loss decreased (10896.583008 --> 10896.564453). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.91 .. Rec_loss: 12265.21 .. NELB0:
12270.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.2 .. NELB0: 5448.29
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 5.0 .. Rec_loss: 12265.23 .. NELB0:
12270.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.19 .. NELB0: 5448.28
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 4.79 .. Rec_loss: 12265.22 .. NELB0:

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```

12270.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.19 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.564453 --> 10896.523438). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.68 .. Rec_loss: 12265.21 .. NELBO:
12269.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.18 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.523438 --> 10896.509766). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 4.66 .. Rec_loss: 12265.15 .. NELBO:
12269.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.18 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.509766 --> 10896.500000). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 4.53 .. Rec_loss: 12265.16 .. NELBO:
12269.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.18 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.500000 --> 10896.461914). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 4.37 .. Rec_loss: 12265.16 .. NELBO:

```

```

12269.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.17 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.461914 --> 10896.452148). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 4.37 .. Rec_loss: 12265.18 .. NELBO:
12269.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.17 .. NELBO: 5448.23
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 4.36 .. Rec_loss: 12265.13 .. NELBO:
12269.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.17 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.452148 --> 10896.446289). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 4.23 .. Rec_loss: 12265.12 .. NELBO:
12269.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.16 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.446289 --> 10896.404297). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 4.16 .. Rec_loss: 12265.15 .. NELBO:

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```
12269.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.16 .. NELBO: 5448.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 4.14 .. Rec_loss: 12265.12 .. NELBO:
12269.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.15 .. NELBO: 5448.2
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 4.12 .. Rec_loss: 12265.09 .. NELBO:
12269.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.15 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.404297 --> 10896.389648). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 3.93 .. Rec_loss: 12265.07 .. NELBO:
12269.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.14 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.389648 --> 10896.373047). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 3.94 .. Rec_loss: 12265.04 .. NELBO:
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```
12268.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.14 .. NELBO: 5448.19
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 3.74 .. Rec_loss: 12265.03 .. NELBO:
12268.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.14 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.373047 --> 10896.356445). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 3.74 .. Rec_loss: 12265.04 .. NELBO:
12268.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.13 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.356445 --> 10896.332031). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 3.68 .. Rec_loss: 12265.04 .. NELBO:
12268.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.13 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.332031 --> 10896.331055). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 3.68 .. Rec_loss: 12265.03 .. NELBO:
```

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12268.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.12 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.331055 --> 10896.327148). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 3.53 .. Rec_loss: 12265.02 .. NELBO:
12268.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.12 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.327148 --> 10896.320312). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 3.55 .. Rec_loss: 12265.02 .. NELBO:
12268.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.11 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.320312 --> 10896.300781). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 3.45 .. Rec_loss: 12264.98 .. NELBO:
12268.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.11 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.300781 --> 10896.279297). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 3.49 .. Rec_loss: 12264.97 .. NELBO:

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```

12268.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.1 .. NELBO: 5448.14
*****
*****
EarlyStopping counter: 1 out of 5
Current call: 4
model: ETM(
  (t_drop): Dropout(p=0.06765616884135095, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=61, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=61, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=61, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 8.8 .. Rec_loss: 12265.33 .. NELBO:
12274.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.2 .. Rec_loss: 5448.22 .. NELBO: 5454.42
*****
*****
Validation loss decreased (inf --> 10908.836914). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 14.06 .. Rec_loss: 12265.29 .. NELBO:
12279.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.25 .. Rec_loss: 5448.21 .. NELBO: 5454.46
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 10.46 .. Rec_loss: 12265.27 .. NELBO:
12275.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.71 .. Rec_loss: 5448.2 .. NELBO: 5449.91
*****
*****
Validation loss decreased (10908.836914 --> 10899.823242). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 2.74 .. Rec_loss: 12265.27 .. NELBO:
12268.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5448.2 .. NELBO: 5448.42
*****
*****
Validation loss decreased (10899.823242 --> 10896.837891). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12265.28 .. NELBO:
12265.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.19 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.837891 --> 10896.445312). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 12265.24 .. NELBO:
12265.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****

```



```

Validation loss decreased (10896.445312 --> 10896.412109). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 12265.25 .. NELBO:
12265.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.412109 --> 10896.400391). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 12265.24 .. NELBO:
12265.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.400391 --> 10896.391602). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 12265.23 .. NELBO:
12265.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.391602 --> 10896.372070). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 12265.22 .. NELBO:
12265.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.16 .. NELBO: 5448.18
*****
*****

```

```

Validation loss decreased (10896.372070 --> 10896.363281). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 12265.15 .. NELBO:
12265.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.363281 --> 10896.351562). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 12265.15 .. NELBO:
12265.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.15 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.351562 --> 10896.350586). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 12265.14 .. NELBO:
12265.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.15 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.350586 --> 10896.336914). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12265.11 .. NELBO:
12265.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.14 .. NELBO: 5448.16
*****
*****

```

```

Validation loss decreased (10896.336914 --> 10896.324219). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 12265.14 .. NELBO:
12265.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.14 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.324219 --> 10896.307617). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12265.11 .. NELBO:
12265.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.13 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.307617 --> 10896.294922). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12265.06 .. NELBO:
12265.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.13 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.294922 --> 10896.286133). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12265.09 .. NELBO:
12265.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.12 .. NELBO: 5448.13
*****
*****

```

```

Validation loss decreased (10896.286133 --> 10896.263672). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.03 .. NELBO:
12265.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.11 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.263672 --> 10896.256836). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.04 .. NELBO:
12265.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.11 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.256836 --> 10896.241211). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.02 .. NELBO:
12265.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.1 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.241211 --> 10896.234375). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.01 .. NELBO:
12265.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.1 .. NELBO: 5448.11
*****
*****

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```

Validation loss decreased (10896.234375 --> 10896.220703). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12264.98 .. NELBO:
12265.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.09 .. NELBO: 5448.11
*****
*****
Validation loss decreased (10896.220703 --> 10896.212891). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12264.94 .. NELBO:
12265.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.08 .. NELBO: 5448.1
*****
*****
Validation loss decreased (10896.212891 --> 10896.196289). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 12264.95 .. NELBO:
12265.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.08 .. NELBO: 5448.09
*****
*****
Validation loss decreased (10896.196289 --> 10896.173828). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12264.95 .. NELBO:
12265.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.07 .. NELBO: 5448.08
*****
*****

```

```

Validation loss decreased (10896.173828 --> 10896.165039). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12264.92 .. NELBO:
12265.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.06 .. NELBO: 5448.07
*****
*****
Validation loss decreased (10896.165039 --> 10896.148438). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12264.87 .. NELBO:
12265.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.05 .. NELBO: 5448.06
*****
*****
Validation loss decreased (10896.148438 --> 10896.129883). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12264.92 .. NELBO:
12265.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.05 .. NELBO: 5448.06
*****
*****
Validation loss decreased (10896.129883 --> 10896.123047). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 12264.86 .. NELBO:
12265.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.04 .. NELBO: 5448.05
*****
*****

```

Validation loss decreased (10896.123047 --> 10896.104492). Saving model ...
model: ETM(

```
(t_drop): Dropout(p=0.06765616884135095, inplace=False)
(theta_act): Softplus(beta=1, threshold=20)
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=61, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=61, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=61, bias=True)
)
```

Defaulting to vanilla SGD

Epoch---->1 .. LR: 0.005 .. KL_theta: 12.5 .. Rec_loss: 12265.32 .. NELBO:
12277.82

VALIDATION .. LR: 0.005 .. KL_theta: 10.72 .. Rec_loss: 5448.22 .. NELBO:
5458.94

Validation loss decreased (inf --> 10917.879883). Saving model ...

Epoch---->2 .. LR: 0.005 .. KL_theta: 23.21 .. Rec_loss: 12265.32 .. NELBO:
12288.53

VALIDATION .. LR: 0.005 .. KL_theta: 8.12 .. Rec_loss: 5448.2 .. NELBO: 5456.32

Validation loss decreased (10917.879883 --> 10912.655273). Saving model ...

Epoch---->3 .. LR: 0.005 .. KL_theta: 11.39 .. Rec_loss: 12265.32 .. NELBO:
12276.71


```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 5448.19 .. NELBO: 5448.79
*****
*****
Validation loss decreased (10912.655273 --> 10897.572266). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 1.06 .. Rec_loss: 12265.24 .. NELBO:
12266.3
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.18 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10897.572266 --> 10896.423828). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 12265.26 .. NELBO:
12265.66
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.18 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.423828 --> 10896.381836). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.25 .. NELBO:
12265.63
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.381836 --> 10896.373047). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.22 .. NELBO:
12265.6
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.373047 --> 10896.364258). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.22 .. NELBO:
12265.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.16 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.364258 --> 10896.361328). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 12265.21 .. NELBO:
12265.58
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.16 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.361328 --> 10896.348633). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 12265.18 .. NELBO:
12265.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.348633 --> 10896.332031). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12265.17 .. NELBO:
12265.53
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.332031 --> 10896.320312). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12265.15 .. NELBO:
12265.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.320312 --> 10896.302734). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 12265.14 .. NELBO:
12265.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.302734 --> 10896.290039). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12265.16 .. NELBO:
12265.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.290039 --> 10896.284180). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12265.12 .. NELBO:
12265.47
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.284180 --> 10896.275391). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12265.09 .. NELBO:
12265.45
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.12 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.275391 --> 10896.271484). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12265.07 .. NELBO:
12265.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.12 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.271484 --> 10896.251953). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12265.08 .. NELBO:
12265.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.11 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.251953 --> 10896.240234). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12265.06 .. NELBO:
12265.41
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.1 .. NELBO: 5448.11
*****
*****
Validation loss decreased (10896.240234 --> 10896.237305). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12265.04 .. NELBO:
12265.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.1 .. NELBO: 5448.11
*****
*****
Validation loss decreased (10896.237305 --> 10896.218750). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12265.03 .. NELBO:
12265.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.09 .. NELBO: 5448.1
*****
*****
Validation loss decreased (10896.218750 --> 10896.205078). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12265.0 .. NELBO:
12265.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.09 .. NELBO: 5448.1
*****
*****
Validation loss decreased (10896.205078 --> 10896.191406). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12265.01 .. NELBO:
12265.36
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.08 .. NELBO: 5448.09
*****
*****
Validation loss decreased (10896.191406 --> 10896.183594). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12265.01 .. NELBO:
12265.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.07 .. NELBO: 5448.08
*****
*****
Validation loss decreased (10896.183594 --> 10896.162109). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 12264.96 .. NELBO:
12265.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.07 .. NELBO: 5448.08
*****
*****
Validation loss decreased (10896.162109 --> 10896.158203). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 12264.94 .. NELBO:
12265.28
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.06 .. NELBO: 5448.07
*****
*****
Validation loss decreased (10896.158203 --> 10896.142578). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12264.93 .. NELBO:
12265.28
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.06 .. NELBO: 5448.07
*****
*****
Validation loss decreased (10896.142578 --> 10896.130859). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 12264.91 .. NELBO:
12265.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.05 .. NELBO: 5448.06
*****
*****
Validation loss decreased (10896.130859 --> 10896.117188). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 12264.91 .. NELBO:
12265.24
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.04 .. NELBO: 5448.05
*****
*****
Validation loss decreased (10896.117188 --> 10896.109375). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12264.89 .. NELBO:
12265.24
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.04 .. NELBO: 5448.05
*****
*****
Validation loss decreased (10896.109375 --> 10896.086914). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.06765616884135095, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=61, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)

```

```

    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=61, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=61, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 10.42 .. Rec_loss: 12265.32 .. NELBO:
12275.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.16 .. Rec_loss: 5448.2 .. NELBO: 5455.36
*****
*****
Validation loss decreased (inf --> 10910.708984). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 15.93 .. Rec_loss: 12265.36 .. NELBO:
12281.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.89 .. Rec_loss: 5448.2 .. NELBO: 5455.09
*****
*****
Validation loss decreased (10910.708984 --> 10910.164062). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 10.9 .. Rec_loss: 12265.32 .. NELBO:
12276.22
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.31 .. Rec_loss: 5448.19 .. NELBO: 5449.5
*****
*****
Validation loss decreased (10910.164062 --> 10899.008789). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 2.08 .. Rec_loss: 12265.29 .. NELBO:
12267.37

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5448.18 .. NELBO: 5448.3
*****
*****
Validation loss decreased (10899.008789 --> 10896.606445). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12265.27 .. NELBO:
12265.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.606445 --> 10896.396484). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 12265.26 .. NELBO:
12265.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.396484 --> 10896.374023). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 12265.27 .. NELBO:
12265.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.374023 --> 10896.368164). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12265.23 .. NELBO:
12265.62

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*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.368164 --> 10896.352539). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12265.2 .. NELBO:
12265.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.352539 --> 10896.343750). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.22 .. NELBO:
12265.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.343750 --> 10896.339844). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12265.18 .. NELBO:
12265.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.15 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.339844 --> 10896.333008). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 12265.16 .. NELBO:
12265.56

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```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.333008 --> 10896.321289). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 12265.16 .. NELBO:
12265.56
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.14 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.321289 --> 10896.320312). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12265.15 .. NELBO:
12265.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.320312 --> 10896.302734). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 12265.15 .. NELBO:
12265.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.302734 --> 10896.291992). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 12265.12 .. NELBO:
12265.49

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*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.291992 --> 10896.274414). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.11 .. NELBO:
12265.49
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.12 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.274414 --> 10896.273438). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.07 .. NELBO:
12265.45
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.12 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.273438 --> 10896.260742). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12265.08 .. NELBO:
12265.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.11 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.260742 --> 10896.250000). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.05 .. NELBO:
12265.43

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*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.11 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.250000 --> 10896.245117). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.03 .. NELBO:
12265.41
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.1 .. NELBO: 5448.11
*****
*****
Validation loss decreased (10896.245117 --> 10896.227539). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12265.01 .. NELBO:
12265.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.1 .. NELBO: 5448.11
*****
*****
Validation loss decreased (10896.227539 --> 10896.209961). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12265.02 .. NELBO:
12265.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.09 .. NELBO: 5448.1
*****
*****
Validation loss decreased (10896.209961 --> 10896.202148). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12264.99 .. NELBO:
12265.34

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.08 .. NELBO: 5448.09
*****
*****
Validation loss decreased (10896.202148 --> 10896.188477). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12265.0 .. NELBO:
12265.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.08 .. NELBO: 5448.1
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 12264.99 .. NELBO:
12265.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.07 .. NELBO: 5448.08
*****
*****
Validation loss decreased (10896.188477 --> 10896.178711). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12264.97 .. NELBO:
12265.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.07 .. NELBO: 5448.08
*****
*****
Validation loss decreased (10896.178711 --> 10896.158203). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12264.91 .. NELBO:
12265.26

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*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.06 .. NELBO: 5448.07
*****
*****
Validation loss decreased (10896.158203 --> 10896.151367). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12264.9 .. NELBO:
12265.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.06 .. NELBO: 5448.08
*****
*****
Validation loss decreased (10896.151367 --> 10896.145508). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 12264.9 .. NELBO:
12265.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.05 .. NELBO: 5448.06
*****
*****
Validation loss decreased (10896.145508 --> 10896.120117). Saving model ...
Current call: 5
model: ETM(
  (t_drop): Dropout(p=0.3454648946388247, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=89, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=89, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=89, bias=True)
)
Defaulting to vanilla SGD

```

```

*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 18.92 .. Rec_loss: 12265.34 .. NELBO:
12284.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.27 .. Rec_loss: 5448.24 .. NELBO: 5456.51
*****
*****
Validation loss decreased (inf --> 10913.021484). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 18.92 .. Rec_loss: 12265.37 .. NELBO:
12284.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.63 .. Rec_loss: 5448.24 .. NELBO: 5450.87
*****
*****
Validation loss decreased (10913.021484 --> 10901.738281). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 7.24 .. Rec_loss: 12265.33 .. NELBO:
12272.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5448.24 .. NELBO: 5448.52
*****
*****
Validation loss decreased (10901.738281 --> 10897.045898). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 4.01 .. Rec_loss: 12265.33 .. NELBO:
12269.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5448.24 .. NELBO: 5448.35
*****
*****
Validation loss decreased (10897.045898 --> 10896.689453). Saving model ...

```

```

*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.56 .. Rec_loss: 12265.32 .. NELBO:
12268.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5448.23 .. NELBO: 5448.33
*****
*****
Validation loss decreased (10896.689453 --> 10896.671875). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.5 .. Rec_loss: 12265.32 .. NELBO:
12268.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.23 .. NELBO: 5448.32
*****
*****
Validation loss decreased (10896.671875 --> 10896.645508). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.35 .. Rec_loss: 12265.28 .. NELBO:
12268.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.23 .. NELBO: 5448.31
*****
*****
Validation loss decreased (10896.645508 --> 10896.608398). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.17 .. Rec_loss: 12265.27 .. NELBO:
12268.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.22 .. NELBO: 5448.29
*****
*****
Validation loss decreased (10896.608398 --> 10896.592773). Saving model ...

```



```

*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.98 .. Rec_loss: 12265.27 .. NELBO:
12268.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.22 .. NELBO: 5448.27
*****
*****
Validation loss decreased (10896.592773 --> 10896.542969). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.88 .. Rec_loss: 12265.29 .. NELBO:
12268.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.22 .. NELBO: 5448.27
*****
*****
Validation loss decreased (10896.542969 --> 10896.534180). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.77 .. Rec_loss: 12265.29 .. NELBO:
12268.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.534180 --> 10896.529297). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.67 .. Rec_loss: 12265.27 .. NELBO:
12267.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.529297 --> 10896.523438). Saving model ...

```

```

*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 2.64 .. Rec_loss: 12265.24 .. NELBO:
12267.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.523438 --> 10896.516602). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 2.4 .. Rec_loss: 12265.25 .. NELBO:
12267.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.2 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.516602 --> 10896.468750). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 2.35 .. Rec_loss: 12265.22 .. NELBO:
12267.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.2 .. NELBO: 5448.24
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 2.33 .. Rec_loss: 12265.23 .. NELBO:
12267.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.2 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.468750 --> 10896.455078). Saving model ...

```

```

*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 2.25 .. Rec_loss: 12265.19 .. NELBO:
12267.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.455078 --> 10896.431641). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 2.16 .. Rec_loss: 12265.17 .. NELBO:
12267.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.431641 --> 10896.427734). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 2.05 .. Rec_loss: 12265.24 .. NELBO:
12267.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.19 .. NELBO: 5448.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 2.05 .. Rec_loss: 12265.2 .. NELBO:
12267.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.427734 --> 10896.416016). Saving model ...

```

```

*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 1.97 .. Rec_loss: 12265.18 .. NELBO:
12267.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.416016 --> 10896.406250). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 1.89 .. Rec_loss: 12265.16 .. NELBO:
12267.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.406250 --> 10896.398438). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 1.81 .. Rec_loss: 12265.15 .. NELBO:
12266.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.398438 --> 10896.383789). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 1.8 .. Rec_loss: 12265.11 .. NELBO:
12266.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.383789 --> 10896.375000). Saving model ...

```

```

*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 1.78 .. Rec_loss: 12265.14 .. NELBO:
12266.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.375000 --> 10896.363281). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 1.72 .. Rec_loss: 12265.13 .. NELBO:
12266.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.363281 --> 10896.360352). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 1.63 .. Rec_loss: 12265.12 .. NELBO:
12266.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.360352 --> 10896.348633). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 1.62 .. Rec_loss: 12265.1 .. NELBO:
12266.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.348633 --> 10896.337891). Saving model ...

```

```

*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 1.56 .. Rec_loss: 12265.09 .. NELBO:
12266.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.337891 --> 10896.326172). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 1.57 .. Rec_loss: 12265.09 .. NELBO:
12266.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.326172 --> 10896.318359). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.3454648946388247, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=89, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=89, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=89, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 19.4 .. Rec_loss: 12265.37 .. NELBO:
12284.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.5 .. Rec_loss: 5448.25 .. NELBO: 5455.75

```

```

*****
*****
Validation loss decreased (inf --> 10911.502930). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 17.82 .. Rec_loss: 12265.37 .. NELBO:
12283.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.95 .. Rec_loss: 5448.25 .. NELBO: 5451.2
*****
*****
Validation loss decreased (10911.502930 --> 10902.388672). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 7.88 .. Rec_loss: 12265.4 .. NELBO:
12273.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5448.24 .. NELBO: 5448.62
*****
*****
Validation loss decreased (10902.388672 --> 10897.237305). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 4.18 .. Rec_loss: 12265.35 .. NELBO:
12269.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5448.24 .. NELBO: 5448.35
*****
*****
Validation loss decreased (10897.237305 --> 10896.688477). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.69 .. Rec_loss: 12265.36 .. NELBO:
12269.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.23 .. NELBO: 5448.32

```

```

*****
*****
Validation loss decreased (10896.688477 --> 10896.649414). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.48 .. Rec_loss: 12265.32 .. NELBO:
12268.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5448.23 .. NELBO: 5448.34
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.36 .. Rec_loss: 12265.31 .. NELBO:
12268.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.23 .. NELBO: 5448.32
*****
*****
Validation loss decreased (10896.649414 --> 10896.631836). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.15 .. Rec_loss: 12265.33 .. NELBO:
12268.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.22 .. NELBO: 5448.29
*****
*****
Validation loss decreased (10896.631836 --> 10896.589844). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 3.04 .. Rec_loss: 12265.32 .. NELBO:
12268.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.22 .. NELBO: 5448.29

```



```

*****
*****
Validation loss decreased (10896.589844 --> 10896.575195). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.93 .. Rec_loss: 12265.31 .. NELBO:
12268.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.22 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.575195 --> 10896.561523). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.86 .. Rec_loss: 12265.29 .. NELBO:
12268.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.561523 --> 10896.526367). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.69 .. Rec_loss: 12265.3 .. NELBO:
12267.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.526367 --> 10896.513672). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 2.61 .. Rec_loss: 12265.26 .. NELBO:
12267.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.21 .. NELBO: 5448.25

```

```

*****
*****
Validation loss decreased (10896.513672 --> 10896.493164). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 2.48 .. Rec_loss: 12265.27 .. NELBO:
12267.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.2 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.493164 --> 10896.478516). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 2.43 .. Rec_loss: 12265.25 .. NELBO:
12267.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.2 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.478516 --> 10896.467773). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 2.35 .. Rec_loss: 12265.23 .. NELBO:
12267.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.19 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.467773 --> 10896.456055). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 2.29 .. Rec_loss: 12265.23 .. NELBO:
12267.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.19 .. NELBO: 5448.22

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```

*****
*****
Validation loss decreased (10896.456055 --> 10896.436523). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 2.16 .. Rec_loss: 12265.22 .. NELBO:
12267.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.19 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.436523 --> 10896.424805). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 2.08 .. Rec_loss: 12265.2 .. NELBO:
12267.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.424805 --> 10896.408203). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 2.06 .. Rec_loss: 12265.2 .. NELBO:
12267.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.408203 --> 10896.397461). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 1.98 .. Rec_loss: 12265.18 .. NELBO:
12267.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19

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*****
*****
Validation loss decreased (10896.397461 --> 10896.378906). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 1.92 .. Rec_loss: 12265.17 .. NELBO:
12267.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.378906 --> 10896.374023). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 1.86 .. Rec_loss: 12265.15 .. NELBO:
12267.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.374023 --> 10896.363281). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 1.86 .. Rec_loss: 12265.12 .. NELBO:
12266.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.363281 --> 10896.350586). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 1.78 .. Rec_loss: 12265.13 .. NELBO:
12266.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17

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```

*****
*****
Validation loss decreased (10896.350586 --> 10896.342773). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 1.7 .. Rec_loss: 12265.11 .. NELBO:
12266.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.342773 --> 10896.332031). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 1.69 .. Rec_loss: 12265.09 .. NELBO:
12266.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.332031 --> 10896.327148). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 1.63 .. Rec_loss: 12265.12 .. NELBO:
12266.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.327148 --> 10896.318359). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 12265.09 .. NELBO:
12266.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15

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```

*****
*****
Validation loss decreased (10896.318359 --> 10896.305664). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 1.58 .. Rec_loss: 12265.08 .. NELBO:
12266.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.305664 --> 10896.298828). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.3454648946388247, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=89, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=89, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=89, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 22.63 .. Rec_loss: 12265.31 .. NELBO:
12287.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.68 .. Rec_loss: 5448.23 .. NELBO: 5456.91
*****
*****
Validation loss decreased (inf --> 10913.821289). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 19.03 .. Rec_loss: 12265.36 .. NELBO:
12284.39
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.36 .. Rec_loss: 5448.22 .. NELBO: 5450.58
*****
*****
Validation loss decreased (10913.821289 --> 10901.162109). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 6.77 .. Rec_loss: 12265.29 .. NELBO:
12272.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5448.22 .. NELBO: 5448.43
*****
*****
Validation loss decreased (10901.162109 --> 10896.846680). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.87 .. Rec_loss: 12265.32 .. NELBO:
12269.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5448.21 .. NELBO: 5448.34
*****
*****
Validation loss decreased (10896.846680 --> 10896.681641). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.53 .. Rec_loss: 12265.29 .. NELBO:
12268.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.21 .. NELBO: 5448.3
*****
*****
Validation loss decreased (10896.681641 --> 10896.609375). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.33 .. Rec_loss: 12265.3 .. NELBO:
12268.63
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.21 .. NELBO: 5448.29
*****
*****
Validation loss decreased (10896.609375 --> 10896.580078). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.25 .. Rec_loss: 12265.3 .. NELBO:
12268.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.2 .. NELBO: 5448.27
*****
*****
Validation loss decreased (10896.580078 --> 10896.544922). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.11 .. Rec_loss: 12265.27 .. NELBO:
12268.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.2 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.544922 --> 10896.519531). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.96 .. Rec_loss: 12265.25 .. NELBO:
12268.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.2 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.519531 --> 10896.491211). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.84 .. Rec_loss: 12265.24 .. NELBO:
12268.08
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.19 .. NELBO: 5448.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.75 .. Rec_loss: 12265.24 .. NELBO:
12267.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.19 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.491211 --> 10896.478516). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.62 .. Rec_loss: 12265.19 .. NELBO:
12267.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.18 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.478516 --> 10896.445312). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 2.55 .. Rec_loss: 12265.2 .. NELBO:
12267.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.18 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.445312 --> 10896.434570). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 2.44 .. Rec_loss: 12265.19 .. NELBO:
12267.63
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.18 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.434570 --> 10896.426758). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 2.35 .. Rec_loss: 12265.19 .. NELBO:
12267.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.17 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.426758 --> 10896.421875). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 2.28 .. Rec_loss: 12265.21 .. NELBO:
12267.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.17 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.421875 --> 10896.407227). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 2.26 .. Rec_loss: 12265.16 .. NELBO:
12267.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.17 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.407227 --> 10896.386719). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 2.16 .. Rec_loss: 12265.16 .. NELBO:
12267.32
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.16 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.386719 --> 10896.375000). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 2.08 .. Rec_loss: 12265.15 .. NELBO:
12267.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.16 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.375000 --> 10896.363281). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 2.02 .. Rec_loss: 12265.13 .. NELBO:
12267.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.15 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.363281 --> 10896.351562). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 1.95 .. Rec_loss: 12265.14 .. NELBO:
12267.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.15 .. NELBO: 5448.18
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 1.94 .. Rec_loss: 12265.14 .. NELBO:
12267.08
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.15 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.351562 --> 10896.336914). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 12265.1 .. NELBO:
12266.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.14 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.336914 --> 10896.316406). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 1.84 .. Rec_loss: 12265.07 .. NELBO:
12266.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.14 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.316406 --> 10896.311523). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 1.75 .. Rec_loss: 12265.08 .. NELBO:
12266.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.311523 --> 10896.297852). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 1.72 .. Rec_loss: 12265.07 .. NELBO:
12266.79
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.297852 --> 10896.286133). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 1.67 .. Rec_loss: 12265.07 .. NELBO:
12266.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.12 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.286133 --> 10896.272461). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 1.63 .. Rec_loss: 12265.05 .. NELBO:
12266.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.12 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.272461 --> 10896.267578). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 1.61 .. Rec_loss: 12265.02 .. NELBO:
12266.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.12 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.267578 --> 10896.257812). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 1.56 .. Rec_loss: 12265.04 .. NELBO:
12266.6
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.11 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.257812 --> 10896.247070). Saving model ...
Current call: 6
model: ETM(
  (t_drop): Dropout(p=0.16045155809509165, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=90, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=90, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=90, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 13.72 .. Rec_loss: 12265.4 .. NELBO:
12279.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.4 .. Rec_loss: 5448.25 .. NELBO: 5456.65
*****
*****
Validation loss decreased (inf --> 10913.305664). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 18.67 .. Rec_loss: 12265.38 .. NELBO:
12284.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.49 .. Rec_loss: 5448.25 .. NELBO: 5453.74
*****
*****
Validation loss decreased (10913.305664 --> 10907.465820). Saving model ...
*****
*****

```

```

Epoch----->3 .. LR: 0.005 .. KL_theta: 9.34 .. Rec_loss: 12265.4 .. NELBO:
12274.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 5448.24 .. NELBO: 5448.97
*****
*****
Validation loss decreased (10907.465820 --> 10897.940430). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 2.36 .. Rec_loss: 12265.37 .. NELBO:
12267.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.23 .. NELBO: 5448.3
*****
*****
Validation loss decreased (10897.940430 --> 10896.616211). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 1.56 .. Rec_loss: 12265.37 .. NELBO:
12266.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.23 .. NELBO: 5448.29
*****
*****
Validation loss decreased (10896.616211 --> 10896.586914). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 1.47 .. Rec_loss: 12265.35 .. NELBO:
12266.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.23 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.586914 --> 10896.549805). Saving model ...
*****
*****

```

```

Epoch----->7 .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 12265.35 .. NELBO:
12266.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.22 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.549805 --> 10896.519531). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 1.39 .. Rec_loss: 12265.33 .. NELBO:
12266.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.22 .. NELBO: 5448.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 1.38 .. Rec_loss: 12265.31 .. NELBO:
12266.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.22 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.519531 --> 10896.514648). Saving model ...
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 1.35 .. Rec_loss: 12265.31 .. NELBO:
12266.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.21 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.514648 --> 10896.496094). Saving model ...
*****
*****

```



```

Epoch----->11 .. LR: 0.005 .. KL_theta: 1.32 .. Rec_loss: 12265.31 .. NELBO:
12266.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.21 .. NELBO: 5448.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 12265.31 .. NELBO:
12266.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.21 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.496094 --> 10896.480469). Saving model ...
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 12265.27 .. NELBO:
12266.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.21 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.480469 --> 10896.455078). Saving model ...
*****
*****
Epoch----->14 .. LR: 0.005 .. KL_theta: 1.25 .. Rec_loss: 12265.28 .. NELBO:
12266.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.2 .. NELBO: 5448.24
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****

```

```

Epoch---->15 .. LR: 0.005 .. KL_theta: 1.22 .. Rec_loss: 12265.27 .. NELBO:
12266.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.2 .. NELBO: 5448.23
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 1.22 .. Rec_loss: 12265.28 .. NELBO:
12266.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.19 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.455078 --> 10896.451172). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 1.19 .. Rec_loss: 12265.25 .. NELBO:
12266.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.451172 --> 10896.432617). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 1.19 .. Rec_loss: 12265.25 .. NELBO:
12266.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.432617 --> 10896.416992). Saving model ...
*****
*****

```

```

Epoch---->19 .. LR: 0.005 .. KL_theta: 1.14 .. Rec_loss: 12265.21 .. NELBO:
12266.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 1.13 .. Rec_loss: 12265.23 .. NELBO:
12266.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.416992 --> 10896.410156). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 1.14 .. Rec_loss: 12265.22 .. NELBO:
12266.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.410156 --> 10896.395508). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 12265.2 .. NELBO:
12266.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.395508 --> 10896.385742). Saving model ...
*****
*****

```

```

Epoch---->23 .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 12265.19 .. NELBO:
12266.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.17 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.385742 --> 10896.371094). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 1.04 .. Rec_loss: 12265.2 .. NELBO:
12266.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 12265.17 .. NELBO:
12266.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.16 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.371094 --> 10896.360352). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 1.03 .. Rec_loss: 12265.15 .. NELBO:
12266.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.16 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.360352 --> 10896.353516). Saving model ...
*****
*****

```

```

Epoch----->27 .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 12265.15 .. NELBO:
12266.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.16 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.353516 --> 10896.337891). Saving model ...
*****
*****
Epoch----->28 .. LR: 0.005 .. KL_theta: 0.99 .. Rec_loss: 12265.14 .. NELBO:
12266.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.15 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.337891 --> 10896.336914). Saving model ...
*****
*****
Epoch----->29 .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 12265.12 .. NELBO:
12266.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.15 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.336914 --> 10896.331055). Saving model ...
*****
*****
Epoch----->30 .. LR: 0.005 .. KL_theta: 0.99 .. Rec_loss: 12265.14 .. NELBO:
12266.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.331055 --> 10896.316406). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.16045155809509165, inplace=False)

```

```

(theta_act): Softplus(beta=1, threshold=20)
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=90, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=90, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=90, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 12.93 .. Rec_loss: 12265.37 .. NELBO:
12278.3
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.17 .. Rec_loss: 5448.24 .. NELBO: 5455.41
*****
*****
Validation loss decreased (inf --> 10910.816406). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 16.25 .. Rec_loss: 12265.32 .. NELBO:
12281.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.01 .. Rec_loss: 5448.23 .. NELBO: 5453.24
*****
*****
Validation loss decreased (10910.816406 --> 10906.483398). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 9.16 .. Rec_loss: 12265.34 .. NELBO:
12274.5
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.06 .. Rec_loss: 5448.23 .. NELBO: 5449.29
*****
*****

```

```

Validation loss decreased (10906.483398 --> 10898.571289). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 2.87 .. Rec_loss: 12265.32 .. NELBO:
12268.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5448.23 .. NELBO: 5448.37
*****
*****
Validation loss decreased (10898.571289 --> 10896.729492). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.62 .. Rec_loss: 12265.31 .. NELBO:
12266.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.22 .. NELBO: 5448.27
*****
*****
Validation loss decreased (10896.729492 --> 10896.556641). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.46 .. Rec_loss: 12265.32 .. NELBO:
12266.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.22 .. NELBO: 5448.27
*****
*****
Validation loss decreased (10896.556641 --> 10896.545898). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.51 .. Rec_loss: 12265.32 .. NELBO:
12266.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.22 .. NELBO: 5448.26
*****
*****

```

```

Validation loss decreased (10896.545898 --> 10896.519531). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 12265.29 .. NELBO:
12266.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.44 .. Rec_loss: 12265.28 .. NELBO:
12266.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.21 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.519531 --> 10896.487305). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.39 .. Rec_loss: 12265.28 .. NELBO:
12266.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.21 .. NELBO: 5448.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.34 .. Rec_loss: 12265.25 .. NELBO:
12266.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.21 .. NELBO: 5448.25
*****
*****

```



```

EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.35 .. Rec_loss: 12265.28 .. NELBO:
12266.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.2 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.487305 --> 10896.472656). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 12265.24 .. NELBO:
12266.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.2 .. NELBO: 5448.24
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 12265.25 .. NELBO:
12266.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.2 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.472656 --> 10896.460938). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 12265.24 .. NELBO:
12266.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.19 .. NELBO: 5448.22
*****
*****

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```

Validation loss decreased (10896.460938 --> 10896.442383). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 1.23 .. Rec_loss: 12265.21 .. NELBO:
12266.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.19 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.442383 --> 10896.441406). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 1.22 .. Rec_loss: 12265.2 .. NELBO:
12266.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.441406 --> 10896.416992). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 1.2 .. Rec_loss: 12265.21 .. NELBO:
12266.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.18 .. NELBO: 5448.21
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 1.16 .. Rec_loss: 12265.18 .. NELBO:
12266.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.18 .. NELBO: 5448.21
*****
*****

```

EarlyStopping counter: 2 out of 5

```
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 1.16 .. Rec_loss: 12265.18 .. NELBO:
12266.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.18 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.416992 --> 10896.412109). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 1.15 .. Rec_loss: 12265.19 .. NELBO:
12266.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.18 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.412109 --> 10896.408203). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 1.13 .. Rec_loss: 12265.18 .. NELBO:
12266.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.408203 --> 10896.381836). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 12265.13 .. NELBO:
12266.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
```

```

Validation loss decreased (10896.381836 --> 10896.374023). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 1.08 .. Rec_loss: 12265.16 .. NELBO:
12266.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.16 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.374023 --> 10896.366211). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 1.1 .. Rec_loss: 12265.14 .. NELBO:
12266.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.16 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.366211 --> 10896.366211). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 1.03 .. Rec_loss: 12265.13 .. NELBO:
12266.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.16 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.366211 --> 10896.353516). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 12265.11 .. NELBO:
12266.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****

```

```

Validation loss decreased (10896.353516 --> 10896.337891). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 1.01 .. Rec_loss: 12265.09 .. NELBO:
12266.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.15 .. NELBO: 5448.17
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 12265.06 .. NELBO:
12266.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.15 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.337891 --> 10896.330078). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 0.99 .. Rec_loss: 12265.08 .. NELBO:
12266.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.330078 --> 10896.311523). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.16045155809509165, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=90, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
)

```

```

(mu_q_theta): Linear(in_features=800, out_features=90, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=90, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 17.6 .. Rec_loss: 12265.34 .. NELBO:
12282.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.64 .. Rec_loss: 5448.24 .. NELBO:
5460.88
*****
*****
Validation loss decreased (inf --> 10921.768555). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 25.57 .. Rec_loss: 12265.35 .. NELBO:
12290.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.23 .. Rec_loss: 5448.23 .. NELBO: 5453.46
*****
*****
Validation loss decreased (10921.768555 --> 10906.923828). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 7.91 .. Rec_loss: 12265.34 .. NELBO:
12273.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5448.23 .. NELBO: 5448.51
*****
*****
Validation loss decreased (10906.923828 --> 10897.002930). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 1.68 .. Rec_loss: 12265.32 .. NELBO:
12267.0
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.22 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10897.002930 --> 10896.566406). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.4 .. Rec_loss: 12265.34 .. NELBO:
12266.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.22 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.566406 --> 10896.516602). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.33 .. Rec_loss: 12265.32 .. NELBO:
12266.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.22 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.516602 --> 10896.481445). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.3 .. Rec_loss: 12265.3 .. NELBO:
12266.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.21 .. NELBO: 5448.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 12265.31 .. NELBO:
12266.58
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.21 .. NELBO: 5448.25
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 12265.28 .. NELBO:
12266.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.21 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.481445 --> 10896.465820). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.25 .. Rec_loss: 12265.26 .. NELBO:
12266.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.2 .. NELBO: 5448.24
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.24 .. Rec_loss: 12265.26 .. NELBO:
12266.5
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.2 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.465820 --> 10896.454102). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.22 .. Rec_loss: 12265.25 .. NELBO:
12266.47
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.19 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.454102 --> 10896.450195). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 1.15 .. Rec_loss: 12265.23 .. NELBO:
12266.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.450195 --> 10896.427734). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 1.17 .. Rec_loss: 12265.23 .. NELBO:
12266.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.19 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.427734 --> 10896.423828). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 12265.22 .. NELBO:
12266.34
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.423828 --> 10896.413086). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 12265.18 .. NELBO:
12266.29
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.413086 --> 10896.397461). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 12265.21 .. NELBO:
12266.3
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.18 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.397461 --> 10896.385742). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 12265.19 .. NELBO:
12266.3
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 1.06 .. Rec_loss: 12265.19 .. NELBO:
12266.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 12265.16 .. NELBO:
12266.21
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.17 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.385742 --> 10896.375977). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 1.06 .. Rec_loss: 12265.17 .. NELBO:
12266.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.16 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.375977 --> 10896.365234). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 12265.16 .. NELBO:
12266.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.16 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.365234 --> 10896.350586). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 12265.16 .. NELBO:
12266.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.15 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.350586 --> 10896.340820). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 1.01 .. Rec_loss: 12265.15 .. NELBO:
12266.16
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.340820 --> 10896.330078). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 0.98 .. Rec_loss: 12265.12 .. NELBO:
12266.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.330078 --> 10896.317383). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 12265.12 .. NELBO:
12266.09
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.14 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.317383 --> 10896.315430). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 0.95 .. Rec_loss: 12265.1 .. NELBO:
12266.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.315430 --> 10896.304688). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 0.94 .. Rec_loss: 12265.08 .. NELBO:
12266.02
*****
*****
*****

```

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.304688 --> 10896.295898). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 0.94 .. Rec_loss: 12265.06 .. NELBO:
12266.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.13 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.295898 --> 10896.291016). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 0.92 .. Rec_loss: 12265.06 .. NELBO:
12265.98
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.291016 --> 10896.278320). Saving model ...
Current call: 7
model: ETM(
  (t_drop): Dropout(p=0.4318874339465485, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 6.77 .. Rec_loss: 12265.36 .. NELBO:

```

```

12272.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5448.24 .. NELBO: 5448.35
*****
*****
Validation loss decreased (inf --> 10896.714844). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 3.96 .. Rec_loss: 12265.31 .. NELBO:
12269.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.24 .. NELBO: 5448.32
*****
*****
Validation loss decreased (10896.714844 --> 10896.640625). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 3.88 .. Rec_loss: 12265.32 .. NELBO:
12269.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.24 .. NELBO: 5448.3
*****
*****
Validation loss decreased (10896.640625 --> 10896.606445). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.92 .. Rec_loss: 12265.27 .. NELBO:
12269.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.23 .. NELBO: 5448.29
*****
*****
Validation loss decreased (10896.606445 --> 10896.585938). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.77 .. Rec_loss: 12265.29 .. NELBO:

```

```
12269.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.23 .. NELBO: 5448.3
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.74 .. Rec_loss: 12265.28 .. NELBO:
12269.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.23 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.585938 --> 10896.565430). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.75 .. Rec_loss: 12265.25 .. NELBO:
12269.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.22 .. NELBO: 5448.27
*****
*****
Validation loss decreased (10896.565430 --> 10896.544922). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.66 .. Rec_loss: 12265.27 .. NELBO:
12268.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.22 .. NELBO: 5448.28
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 3.64 .. Rec_loss: 12265.27 .. NELBO:
```

```

12268.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.22 .. NELBO: 5448.28
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 3.56 .. Rec_loss: 12265.23 .. NELBO:
12268.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.21 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.544922 --> 10896.516602). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.61 .. Rec_loss: 12265.23 .. NELBO:
12268.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.21 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.516602 --> 10896.511719). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.43 .. Rec_loss: 12265.2 .. NELBO:
12268.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.21 .. NELBO: 5448.27
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 3.32 .. Rec_loss: 12265.17 .. NELBO:

```



```
12268.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.2 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.511719 --> 10896.483398). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 3.43 .. Rec_loss: 12265.18 .. NELBO:
12268.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.2 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.483398 --> 10896.483398). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 3.33 .. Rec_loss: 12265.21 .. NELBO:
12268.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.2 .. NELBO: 5448.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 3.29 .. Rec_loss: 12265.15 .. NELBO:
12268.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.19 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.483398 --> 10896.483398). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 3.27 .. Rec_loss: 12265.2 .. NELBO:
```

```
12268.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.19 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.483398 --> 10896.458984). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 3.19 .. Rec_loss: 12265.13 .. NELBO:
12268.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.19 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.458984 --> 10896.458008). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 3.18 .. Rec_loss: 12265.14 .. NELBO:
12268.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.18 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.458008 --> 10896.447266). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 3.18 .. Rec_loss: 12265.13 .. NELBO:
12268.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.18 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.447266 --> 10896.434570). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 3.08 .. Rec_loss: 12265.12 .. NELBO:
```

```

12268.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.17 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.434570 --> 10896.425781). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 3.02 .. Rec_loss: 12265.09 .. NELBO:
12268.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.17 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.425781 --> 10896.408203). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 3.0 .. Rec_loss: 12265.12 .. NELBO:
12268.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.17 .. NELBO: 5448.21
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 2.94 .. Rec_loss: 12265.08 .. NELBO:
12268.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.16 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.408203 --> 10896.395508). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 2.93 .. Rec_loss: 12265.07 .. NELBO:

```

```

12268.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.16 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.395508 --> 10896.387695). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 2.92 .. Rec_loss: 12265.06 .. NELBO:
12267.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.16 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.387695 --> 10896.380859). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 2.86 .. Rec_loss: 12265.04 .. NELBO:
12267.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.15 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.380859 --> 10896.370117). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 2.81 .. Rec_loss: 12265.02 .. NELBO:
12267.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.15 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.370117 --> 10896.353516). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 2.74 .. Rec_loss: 12265.04 .. NELBO:

```

```

12267.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.14 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.353516 --> 10896.333008). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 2.73 .. Rec_loss: 12265.01 .. NELBO:
12267.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.14 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.333008 --> 10896.330078). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.4318874339465485, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 7.15 .. Rec_loss: 12265.36 .. NELBO:
12272.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5448.22 .. NELBO: 5448.37
*****
*****
Validation loss decreased (inf --> 10896.735352). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 3.95 .. Rec_loss: 12265.35 .. NELBO:
12269.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.22 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.735352 --> 10896.552734). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 3.88 .. Rec_loss: 12265.37 .. NELBO:
12269.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.21 .. NELBO: 5448.29
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.92 .. Rec_loss: 12265.32 .. NELBO:
12269.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.21 .. NELBO: 5448.29
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.77 .. Rec_loss: 12265.31 .. NELBO:
12269.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.552734 --> 10896.508789). Saving model ...

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```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.74 .. Rec_loss: 12265.31 .. NELBO:
12269.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.2 .. NELBO: 5448.27
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.75 .. Rec_loss: 12265.29 .. NELBO:
12269.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.2 .. NELBO: 5448.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.67 .. Rec_loss: 12265.3 .. NELBO:
12268.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.2 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.508789 --> 10896.491211). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 3.59 .. Rec_loss: 12265.29 .. NELBO:
12268.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.19 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.491211 --> 10896.482422). Saving model ...

```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 3.55 .. Rec_loss: 12265.27 .. NELBO:
12268.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.19 .. NELBO: 5448.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.43 .. Rec_loss: 12265.26 .. NELBO:
12268.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.18 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.482422 --> 10896.473633). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.43 .. Rec_loss: 12265.25 .. NELBO:
12268.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.18 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.473633 --> 10896.463867). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 3.42 .. Rec_loss: 12265.24 .. NELBO:
12268.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.18 .. NELBO: 5448.24
*****
*****
EarlyStopping counter: 1 out of 5

```



```

*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 3.34 .. Rec_loss: 12265.23 .. NELBO:
12268.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.17 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.463867 --> 10896.448242). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 3.28 .. Rec_loss: 12265.2 .. NELBO:
12268.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.17 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.448242 --> 10896.445312). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 3.35 .. Rec_loss: 12265.23 .. NELBO:
12268.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.17 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.445312 --> 10896.425781). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 3.28 .. Rec_loss: 12265.22 .. NELBO:
12268.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.16 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.425781 --> 10896.409180). Saving model ...

```

```

*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 3.17 .. Rec_loss: 12265.19 .. NELBO:
12268.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.16 .. NELBO: 5448.21
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 3.2 .. Rec_loss: 12265.18 .. NELBO:
12268.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.16 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.409180 --> 10896.394531). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 3.16 .. Rec_loss: 12265.16 .. NELBO:
12268.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.15 .. NELBO: 5448.2
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 3.1 .. Rec_loss: 12265.18 .. NELBO:
12268.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.15 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.394531 --> 10896.384766). Saving model ...

```

```

*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 3.07 .. Rec_loss: 12265.14 .. NELBO:
12268.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.14 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.384766 --> 10896.376953). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 3.06 .. Rec_loss: 12265.15 .. NELBO:
12268.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.14 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.376953 --> 10896.348633). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 3.0 .. Rec_loss: 12265.13 .. NELBO:
12268.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.14 .. NELBO: 5448.18
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 2.9 .. Rec_loss: 12265.13 .. NELBO:
12268.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.13 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.348633 --> 10896.331055). Saving model ...

```

```

*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 2.83 .. Rec_loss: 12265.09 .. NELBO:
12267.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5448.13 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.331055 --> 10896.306641). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 2.87 .. Rec_loss: 12265.08 .. NELBO:
12267.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.12 .. NELBO: 5448.15
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 2.84 .. Rec_loss: 12265.06 .. NELBO:
12267.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.12 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.306641 --> 10896.303711). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 2.81 .. Rec_loss: 12265.09 .. NELBO:
12267.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.12 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.303711 --> 10896.296875). Saving model ...

```

```

*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 2.75 .. Rec_loss: 12265.05 .. NELBO:
12267.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.11 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.296875 --> 10896.288086). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.4318874339465485, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 6.99 .. Rec_loss: 12265.31 .. NELBO:
12272.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5448.23 .. NELBO: 5448.34
*****
*****
Validation loss decreased (inf --> 10896.681641). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 4.13 .. Rec_loss: 12265.34 .. NELBO:
12269.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.23 .. NELBO: 5448.3

```

```

*****
*****
Validation loss decreased (10896.681641 --> 10896.605469). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 3.99 .. Rec_loss: 12265.31 .. NELBO:
12269.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.23 .. NELBO: 5448.31
*****
*****
Validation loss decreased (10896.605469 --> 10896.602539). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.91 .. Rec_loss: 12265.34 .. NELBO:
12269.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.22 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.602539 --> 10896.553711). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.8 .. Rec_loss: 12265.31 .. NELBO:
12269.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.22 .. NELBO: 5448.29
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.71 .. Rec_loss: 12265.28 .. NELBO:
12268.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.21 .. NELBO: 5448.27

```

```

*****
*****
Validation loss decreased (10896.553711 --> 10896.542969). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.77 .. Rec_loss: 12265.24 .. NELBO:
12269.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.21 .. NELBO: 5448.27
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.71 .. Rec_loss: 12265.27 .. NELBO:
12268.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.21 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.542969 --> 10896.517578). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 3.64 .. Rec_loss: 12265.23 .. NELBO:
12268.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.2 .. NELBO: 5448.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 3.65 .. Rec_loss: 12265.21 .. NELBO:
12268.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.2 .. NELBO: 5448.24

```

```

*****
*****
Validation loss decreased (10896.517578 --> 10896.488281). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.53 .. Rec_loss: 12265.2 .. NELBO:
12268.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.2 .. NELBO: 5448.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.45 .. Rec_loss: 12265.22 .. NELBO:
12268.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.19 .. NELBO: 5448.25
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 3.41 .. Rec_loss: 12265.23 .. NELBO:
12268.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.19 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.488281 --> 10896.459961). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 3.38 .. Rec_loss: 12265.22 .. NELBO:
12268.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.19 .. NELBO: 5448.23

```



```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 3.37 .. Rec_loss: 12265.18 .. NELBO:
12268.55
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.18 .. NELBO: 5448.24
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 3.4 .. Rec_loss: 12265.2 .. NELBO:
12268.6
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.18 .. NELBO: 5448.23
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 3.26 .. Rec_loss: 12265.2 .. NELBO:
12268.46
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.18 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.459961 --> 10896.431641). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 3.22 .. Rec_loss: 12265.13 .. NELBO:
12268.35
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.17 .. NELBO: 5448.22

```

```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 3.21 .. Rec_loss: 12265.17 .. NELBO:
12268.38
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.17 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.431641 --> 10896.424805). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 3.14 .. Rec_loss: 12265.14 .. NELBO:
12268.28
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.16 .. NELBO: 5448.21
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 3.11 .. Rec_loss: 12265.12 .. NELBO:
12268.23
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.16 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.424805 --> 10896.399414). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 3.12 .. Rec_loss: 12265.14 .. NELBO:
12268.26
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.16 .. NELBO: 5448.2

```

```

*****
*****
Validation loss decreased (10896.399414 --> 10896.383789). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 3.01 .. Rec_loss: 12265.13 .. NELBO:
12268.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.15 .. NELBO: 5448.19
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 3.04 .. Rec_loss: 12265.1 .. NELBO:
12268.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.15 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.383789 --> 10896.370117). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 3.01 .. Rec_loss: 12265.07 .. NELBO:
12268.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.14 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.370117 --> 10896.357422). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 2.94 .. Rec_loss: 12265.1 .. NELBO:
12268.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.14 .. NELBO: 5448.18

```

```

*****
*****
Validation loss decreased (10896.357422 --> 10896.355469). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 2.95 .. Rec_loss: 12265.06 .. NELBO:
12268.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.14 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.355469 --> 10896.350586). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 2.87 .. Rec_loss: 12265.06 .. NELBO:
12267.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.13 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.350586 --> 10896.324219). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 2.86 .. Rec_loss: 12265.0 .. NELBO:
12267.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.13 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.324219 --> 10896.317383). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 2.77 .. Rec_loss: 12265.01 .. NELBO:
12267.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.12 .. NELBO: 5448.15

```

```

*****
*****
Validation loss decreased (10896.317383 --> 10896.308594). Saving model ...
Current call: 8
model: ETM(
  (t_drop): Dropout(p=0.680435176645138, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 14.14 .. Rec_loss: 12265.33 .. NELBO:
12279.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5448.23 .. NELBO: 5448.52
*****
*****
Validation loss decreased (inf --> 10897.041992). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 11.48 .. Rec_loss: 12265.34 .. NELBO:
12276.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5448.22 .. NELBO: 5448.44
*****
*****
Validation loss decreased (10897.041992 --> 10896.883789). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 10.79 .. Rec_loss: 12265.31 .. NELBO:
12276.1
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5448.22 .. NELBO: 5448.47
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 10.63 .. Rec_loss: 12265.32 .. NELBO:
12275.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5448.22 .. NELBO: 5448.46
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 10.19 .. Rec_loss: 12265.32 .. NELBO:
12275.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5448.22 .. NELBO: 5448.41
*****
*****
Validation loss decreased (10896.883789 --> 10896.813477). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 9.8 .. Rec_loss: 12265.33 .. NELBO:
12275.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5448.21 .. NELBO: 5448.37
*****
*****
Validation loss decreased (10896.813477 --> 10896.747070). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 9.27 .. Rec_loss: 12265.31 .. NELBO:
12274.58
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5448.21 .. NELBO: 5448.37
*****
*****
Validation loss decreased (10896.747070 --> 10896.732422). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 9.07 .. Rec_loss: 12265.27 .. NELBO:
12274.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5448.21 .. NELBO: 5448.35
*****
*****
Validation loss decreased (10896.732422 --> 10896.692383). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 8.96 .. Rec_loss: 12265.26 .. NELBO:
12274.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5448.2 .. NELBO: 5448.34
*****
*****
Validation loss decreased (10896.692383 --> 10896.689453). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 8.3 .. Rec_loss: 12265.27 .. NELBO:
12273.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5448.2 .. NELBO: 5448.31
*****
*****
Validation loss decreased (10896.689453 --> 10896.616211). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 8.3 .. Rec_loss: 12265.23 .. NELBO:
12273.53
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5448.19 .. NELBO: 5448.29
*****
*****
Validation loss decreased (10896.616211 --> 10896.589844). Saving model ...
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 7.94 .. Rec_loss: 12265.25 .. NELBO:
12273.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5448.19 .. NELBO: 5448.31
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 7.59 .. Rec_loss: 12265.23 .. NELBO:
12272.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5448.19 .. NELBO: 5448.3
*****
*****
Validation loss decreased (10896.589844 --> 10896.583984). Saving model ...
*****
*****
Epoch----->14 .. LR: 0.005 .. KL_theta: 7.44 .. Rec_loss: 12265.23 .. NELBO:
12272.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.18 .. NELBO: 5448.27
*****
*****
Validation loss decreased (10896.583984 --> 10896.556641). Saving model ...
*****
*****
Epoch----->15 .. LR: 0.005 .. KL_theta: 7.2 .. Rec_loss: 12265.21 .. NELBO:
12272.41
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5448.18 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.556641 --> 10896.553711). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 6.92 .. Rec_loss: 12265.21 .. NELBO:
12272.13
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.18 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.553711 --> 10896.516602). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 6.87 .. Rec_loss: 12265.19 .. NELBO:
12272.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.17 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.516602 --> 10896.489258). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 6.59 .. Rec_loss: 12265.17 .. NELBO:
12271.76
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.17 .. NELBO: 5448.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 6.3 .. Rec_loss: 12265.14 .. NELBO:
12271.44
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.17 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.489258 --> 10896.485352). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 6.3 .. Rec_loss: 12265.15 .. NELBO:
12271.45
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.16 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.485352 --> 10896.454102). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 5.88 .. Rec_loss: 12265.13 .. NELBO:
12271.01
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.16 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.454102 --> 10896.435547). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 5.77 .. Rec_loss: 12265.15 .. NELBO:
12270.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.16 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.435547 --> 10896.432617). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 5.68 .. Rec_loss: 12265.15 .. NELBO:
12270.83
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.15 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.432617 --> 10896.416016). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 5.69 .. Rec_loss: 12265.12 .. NELBO:
12270.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.15 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.416016 --> 10896.403320). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 5.41 .. Rec_loss: 12265.14 .. NELBO:
12270.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.14 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.403320 --> 10896.376953). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 5.19 .. Rec_loss: 12265.12 .. NELBO:
12270.31
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.14 .. NELBO: 5448.19
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 5.21 .. Rec_loss: 12265.07 .. NELBO:
12270.28
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.13 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.376953 --> 10896.367188). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 4.98 .. Rec_loss: 12265.1 .. NELBO:
12270.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.13 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.367188 --> 10896.359375). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 4.85 .. Rec_loss: 12265.07 .. NELBO:
12269.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.13 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.359375 --> 10896.341797). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 4.76 .. Rec_loss: 12265.04 .. NELBO:
12269.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.12 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.341797 --> 10896.323242). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.680435176645138, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)

```

```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
Defaulting to vanilla SGD
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 15.62 .. Rec_loss: 12265.4 .. NELBO:
12281.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5448.26 .. NELBO: 5448.56
*****
*****
Validation loss decreased (inf --> 10897.116211). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 11.08 .. Rec_loss: 12265.34 .. NELBO:
12276.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5448.26 .. NELBO: 5448.52
*****
*****
Validation loss decreased (10897.116211 --> 10897.028320). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 10.63 .. Rec_loss: 12265.38 .. NELBO:
12276.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5448.25 .. NELBO: 5448.49
*****
*****
Validation loss decreased (10897.028320 --> 10896.996094). Saving model ...
*****
*****

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```

Epoch----->4 .. LR: 0.005 .. KL_theta: 10.51 .. Rec_loss: 12265.32 .. NELBO:
12275.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5448.25 .. NELBO: 5448.46
*****
*****
Validation loss decreased (10896.996094 --> 10896.917969). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 10.11 .. Rec_loss: 12265.36 .. NELBO:
12275.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5448.25 .. NELBO: 5448.44
*****
*****
Validation loss decreased (10896.917969 --> 10896.862305). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 9.6 .. Rec_loss: 12265.33 .. NELBO:
12274.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5448.24 .. NELBO: 5448.42
*****
*****
Validation loss decreased (10896.862305 --> 10896.843750). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 9.32 .. Rec_loss: 12265.33 .. NELBO:
12274.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5448.24 .. NELBO: 5448.4
*****
*****
Validation loss decreased (10896.843750 --> 10896.793945). Saving model ...
*****
*****

```

```

Epoch----->8 .. LR: 0.005 .. KL_theta: 9.04 .. Rec_loss: 12265.3 .. NELBO:
12274.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5448.24 .. NELBO: 5448.39
*****
*****
Validation loss decreased (10896.793945 --> 10896.767578). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 8.58 .. Rec_loss: 12265.29 .. NELBO:
12273.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5448.23 .. NELBO: 5448.37
*****
*****
Validation loss decreased (10896.767578 --> 10896.752930). Saving model ...
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 8.46 .. Rec_loss: 12265.28 .. NELBO:
12273.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5448.23 .. NELBO: 5448.33
*****
*****
Validation loss decreased (10896.752930 --> 10896.670898). Saving model ...
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 8.19 .. Rec_loss: 12265.31 .. NELBO:
12273.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5448.23 .. NELBO: 5448.35
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****

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```

Epoch---->12 .. LR: 0.005 .. KL_theta: 7.79 .. Rec_loss: 12265.26 .. NELBO:
12273.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.23 .. NELBO: 5448.32
*****
*****
Validation loss decreased (10896.670898 --> 10896.636719). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 7.61 .. Rec_loss: 12265.25 .. NELBO:
12272.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.22 .. NELBO: 5448.31
*****
*****
Validation loss decreased (10896.636719 --> 10896.622070). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 7.42 .. Rec_loss: 12265.27 .. NELBO:
12272.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.22 .. NELBO: 5448.31
*****
*****
Validation loss decreased (10896.622070 --> 10896.616211). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 7.22 .. Rec_loss: 12265.26 .. NELBO:
12272.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.22 .. NELBO: 5448.31
*****
*****
Validation loss decreased (10896.616211 --> 10896.604492). Saving model ...
*****
*****

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Epoch---->16 .. LR: 0.005 .. KL_theta: 7.04 .. Rec_loss: 12265.24 .. NELBO:
12272.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.21 .. NELBO: 5448.29
*****
*****
Validation loss decreased (10896.604492 --> 10896.592773). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 6.67 .. Rec_loss: 12265.22 .. NELBO:
12271.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.21 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.592773 --> 10896.569336). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 6.33 .. Rec_loss: 12265.23 .. NELBO:
12271.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.21 .. NELBO: 5448.29
*****
*****
Validation loss decreased (10896.569336 --> 10896.568359). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 6.3 .. Rec_loss: 12265.23 .. NELBO:
12271.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.2 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.568359 --> 10896.528320). Saving model ...
*****
*****

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```

Epoch----->20 .. LR: 0.005 .. KL_theta: 6.1 .. Rec_loss: 12265.23 .. NELB0:
12271.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.2 .. NELB0: 5448.26
*****
*****
Validation loss decreased (10896.528320 --> 10896.516602). Saving model ...
*****
*****
Epoch----->21 .. LR: 0.005 .. KL_theta: 5.92 .. Rec_loss: 12265.22 .. NELB0:
12271.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.2 .. NELB0: 5448.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->22 .. LR: 0.005 .. KL_theta: 5.76 .. Rec_loss: 12265.21 .. NELB0:
12270.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.19 .. NELB0: 5448.25
*****
*****
Validation loss decreased (10896.516602 --> 10896.499023). Saving model ...
*****
*****
Epoch----->23 .. LR: 0.005 .. KL_theta: 5.68 .. Rec_loss: 12265.2 .. NELB0:
12270.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.19 .. NELB0: 5448.25
*****
*****
Validation loss decreased (10896.499023 --> 10896.495117). Saving model ...
*****
*****

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```

Epoch---->24 .. LR: 0.005 .. KL_theta: 5.52 .. Rec_loss: 12265.16 .. NELBO:
12270.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.18 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.495117 --> 10896.474609). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 5.19 .. Rec_loss: 12265.14 .. NELBO:
12270.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.18 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.474609 --> 10896.470703). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 5.17 .. Rec_loss: 12265.14 .. NELBO:
12270.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.18 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.470703 --> 10896.433594). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 4.93 .. Rec_loss: 12265.17 .. NELBO:
12270.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.18 .. NELBO: 5448.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****

```

```

Epoch---->28 .. LR: 0.005 .. KL_theta: 4.92 .. Rec_loss: 12265.12 .. NELBO:
12270.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.17 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.433594 --> 10896.425781). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 4.89 .. Rec_loss: 12265.11 .. NELBO:
12270.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.17 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.425781 --> 10896.417969). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 4.79 .. Rec_loss: 12265.1 .. NELBO:
12269.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.16 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.417969 --> 10896.403320). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.680435176645138, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)

```

Defaulting to vanilla SGD

```
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 14.73 .. Rec_loss: 12265.35 .. NELBO:
12280.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5448.25 .. NELBO: 5448.56
*****
*****
Validation loss decreased (inf --> 10897.110352). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 11.47 .. Rec_loss: 12265.36 .. NELBO:
12276.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5448.24 .. NELBO: 5448.47
*****
*****
Validation loss decreased (10897.110352 --> 10896.936523). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 10.82 .. Rec_loss: 12265.29 .. NELBO:
12276.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5448.24 .. NELBO: 5448.44
*****
*****
Validation loss decreased (10896.936523 --> 10896.875000). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 10.29 .. Rec_loss: 12265.33 .. NELBO:
12275.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5448.24 .. NELBO: 5448.42
*****
*****
```

```

Validation loss decreased (10896.875000 --> 10896.839844). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 9.88 .. Rec_loss: 12265.35 .. NELBO:
12275.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5448.23 .. NELBO: 5448.41
*****
*****
Validation loss decreased (10896.839844 --> 10896.823242). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 9.74 .. Rec_loss: 12265.32 .. NELBO:
12275.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5448.23 .. NELBO: 5448.39
*****
*****
Validation loss decreased (10896.823242 --> 10896.786133). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 9.37 .. Rec_loss: 12265.31 .. NELBO:
12274.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5448.23 .. NELBO: 5448.39
*****
*****
Validation loss decreased (10896.786133 --> 10896.765625). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 9.08 .. Rec_loss: 12265.27 .. NELBO:
12274.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5448.23 .. NELBO: 5448.36
*****
*****

```

```

Validation loss decreased (10896.765625 --> 10896.704102). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 8.71 .. Rec_loss: 12265.27 .. NELBO:
12273.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5448.22 .. NELBO: 5448.35
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 8.32 .. Rec_loss: 12265.24 .. NELBO:
12273.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5448.22 .. NELBO: 5448.37
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 8.03 .. Rec_loss: 12265.24 .. NELBO:
12273.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5448.22 .. NELBO: 5448.33
*****
*****
Validation loss decreased (10896.704102 --> 10896.652344). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 7.69 .. Rec_loss: 12265.26 .. NELBO:
12272.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5448.21 .. NELBO: 5448.33
*****
*****

```

EarlyStopping counter: 1 out of 5

```
*****
*****
```

Epoch---->13 .. LR: 0.005 .. KL_theta: 7.57 .. Rec_loss: 12265.26 .. NELBO: 12272.83

```
*****
*****
```

```
*****
*****
```

VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.21 .. NELBO: 5448.3

```
*****
*****
```

Validation loss decreased (10896.652344 --> 10896.590820). Saving model ...

```
*****
*****
```

Epoch---->14 .. LR: 0.005 .. KL_theta: 7.26 .. Rec_loss: 12265.22 .. NELBO: 12272.48

```
*****
*****
```

```
*****
*****
```

VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.21 .. NELBO: 5448.29

```
*****
*****
```

Validation loss decreased (10896.590820 --> 10896.566406). Saving model ...

```
*****
*****
```

Epoch---->15 .. LR: 0.005 .. KL_theta: 7.26 .. Rec_loss: 12265.21 .. NELBO: 12272.47

```
*****
*****
```

```
*****
*****
```

VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.2 .. NELBO: 5448.28

```
*****
*****
```

Validation loss decreased (10896.566406 --> 10896.565430). Saving model ...

```
*****
*****
```

Epoch---->16 .. LR: 0.005 .. KL_theta: 7.12 .. Rec_loss: 12265.22 .. NELBO: 12272.34

```
*****
*****
```

```
*****
*****
```

VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5448.2 .. NELBO: 5448.29

```
*****
*****
```



```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 6.71 .. Rec_loss: 12265.22 .. NELBO:
12271.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5448.2 .. NELBO: 5448.28
*****
*****
Validation loss decreased (10896.565430 --> 10896.561523). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 6.63 .. Rec_loss: 12265.17 .. NELBO:
12271.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.19 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.561523 --> 10896.531250). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 6.52 .. Rec_loss: 12265.18 .. NELBO:
12271.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5448.19 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.531250 --> 10896.513672). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 6.25 .. Rec_loss: 12265.2 .. NELBO:
12271.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.19 .. NELBO: 5448.25
*****
*****

```

```

Validation loss decreased (10896.513672 --> 10896.498047). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 5.95 .. Rec_loss: 12265.12 .. NELBO:
12271.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.18 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.498047 --> 10896.471680). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 5.69 .. Rec_loss: 12265.14 .. NELBO:
12270.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.18 .. NELBO: 5448.24
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 5.78 .. Rec_loss: 12265.14 .. NELBO:
12270.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5448.18 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.471680 --> 10896.461914). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 5.46 .. Rec_loss: 12265.14 .. NELBO:
12270.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.17 .. NELBO: 5448.22
*****
*****

```

```

Validation loss decreased (10896.461914 --> 10896.437500). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 5.4 .. Rec_loss: 12265.1 .. NELBO:
12270.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.17 .. NELBO: 5448.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 5.26 .. Rec_loss: 12265.13 .. NELBO:
12270.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.16 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.437500 --> 10896.428711). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 5.22 .. Rec_loss: 12265.08 .. NELBO:
12270.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.16 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.428711 --> 10896.416992). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 5.0 .. Rec_loss: 12265.1 .. NELBO:
12270.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.16 .. NELBO: 5448.2
*****
*****

```

```

Validation loss decreased (10896.416992 --> 10896.400391). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 4.84 .. Rec_loss: 12265.06 .. NELBO:
12269.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.15 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.400391 --> 10896.367188). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 4.66 .. Rec_loss: 12265.03 .. NELBO:
12269.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5448.15 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.367188 --> 10896.367188). Saving model ...
Current call: 9
model: ETM(
  (t_drop): Dropout(p=0.5074588100032376, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 53.24 .. Rec_loss: 12264.14 .. NELBO:
12317.38
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 5.66 .. Rec_loss: 5443.9 .. NELBO: 5449.56
*****
*****
Validation loss decreased (inf --> 10899.112305). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 7.13 .. Rec_loss: 12246.89 .. NELBO:
12254.02
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5430.57 .. NELBO: 5430.67
*****
*****
Validation loss decreased (10899.112305 --> 10861.350586). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 12203.44 .. NELBO:
12203.62
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5405.9 .. NELBO: 5405.93
*****
*****
Validation loss decreased (10861.350586 --> 10811.855469). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12128.24 .. NELBO:
12128.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5371.79 .. NELBO: 5371.81
*****
*****
Validation loss decreased (10811.855469 --> 10743.608398). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12027.69 .. NELBO:
12027.72
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.18 .. NELBO: 5335.2
*****
*****
Validation loss decreased (10743.608398 --> 10670.392578). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11918.54 .. NELBO:
11918.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5307.78 .. NELBO: 5307.8
*****
*****
Validation loss decreased (10670.392578 --> 10615.599609). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11830.18 .. NELBO:
11830.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5301.39 .. NELBO: 5301.41
*****
*****
Validation loss decreased (10615.599609 --> 10602.816406). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.32 .. NELBO:
11785.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5317.19 .. NELBO: 5317.21
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.46 .. NELBO:
11783.5
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.02 .. NELBO: 5340.04
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.19 .. NELBO:
11795.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.7 .. NELBO: 5352.72
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.74 .. NELBO:
11794.78
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.25 .. NELBO: 5352.27
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.39 .. NELBO:
11781.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.48 .. NELBO: 5345.5
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.5074588100032376, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)

```

```

    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 50.66 .. Rec_loss: 12264.03 .. NELBO:
12314.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.2 .. Rec_loss: 5443.7 .. NELBO: 5448.9
*****
*****
Validation loss decreased (inf --> 10897.797852). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 6.49 .. Rec_loss: 12246.98 .. NELBO:
12253.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5430.54 .. NELBO: 5430.64
*****
*****
Validation loss decreased (10897.797852 --> 10861.281250). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 12204.27 .. NELBO:
12204.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5406.29 .. NELBO: 5406.32
*****
*****
Validation loss decreased (10861.281250 --> 10812.630859). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12129.96 .. NELBO:
12130.01
*****

```



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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5372.67 .. NELBO: 5372.69
*****
*****
Validation loss decreased (10812.630859 --> 10745.370117). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12031.12 .. NELBO:
12031.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.21 .. NELBO: 5336.23
*****
*****
Validation loss decreased (10745.370117 --> 10672.451172). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11922.92 .. NELBO:
11922.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.27 .. NELBO: 5308.29
*****
*****
Validation loss decreased (10672.451172 --> 10616.586914). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11833.28 .. NELBO:
11833.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.78 .. NELBO: 5300.8
*****
*****
Validation loss decreased (10616.586914 --> 10601.606445). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.9 .. NELBO:
11785.94
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.79 .. NELBO: 5315.81
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.02 .. NELBO:
11783.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.81 .. NELBO: 5338.83
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.46 .. NELBO:
11794.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.22 .. NELBO: 5352.24
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.95 .. NELBO:
11794.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.35 .. NELBO: 5352.37
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.92 .. NELBO:
11781.96
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.79 .. NELBO: 5345.81
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.5074588100032376, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 50.06 .. Rec_loss: 12264.51 .. NELBO:
12314.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.44 .. Rec_loss: 5444.14 .. NELBO: 5449.58
*****
*****
Validation loss decreased (inf --> 10899.159180). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 6.9 .. Rec_loss: 12248.42 .. NELBO:
12255.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5431.69 .. NELBO: 5431.77
*****
*****
Validation loss decreased (10899.159180 --> 10863.537109). Saving model ...
*****
*****

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```

Epoch---->3 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 12207.68 .. NELBO:
12207.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5408.2 .. NELBO: 5408.23
*****
*****
Validation loss decreased (10863.537109 --> 10816.449219). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12135.62 .. NELBO:
12135.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.16 .. NELBO: 5375.18
*****
*****
Validation loss decreased (10816.449219 --> 10750.349609). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12038.04 .. NELBO:
12038.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.76 .. NELBO: 5338.78
*****
*****
Validation loss decreased (10750.349609 --> 10677.551758). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11931.27 .. NELBO:
11931.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.96 .. NELBO: 5309.98
*****
*****
Validation loss decreased (10677.551758 --> 10619.948242). Saving model ...
*****
*****

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```

Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11839.25 .. NELBO:
11839.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.75 .. NELBO: 5300.77
*****
*****
Validation loss decreased (10619.948242 --> 10601.531250). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.83 .. NELBO:
11788.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.22 .. NELBO: 5314.24
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.4 .. NELBO:
11782.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.08 .. NELBO: 5337.1
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.03 .. NELBO:
11794.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.38 .. NELBO: 5351.4
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****

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```

Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.32 .. NELBO:
11795.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.34 .. NELBO: 5352.36
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.21 .. NELBO:
11783.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.11 .. NELBO: 5346.13
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 10
model: ETM(
  (t_drop): Dropout(p=0.8943756737790783, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 30.95 .. Rec_loss: 12264.01 .. NELBO:
12294.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 5443.77 .. NELBO: 5444.09
*****

```

```

*****
Validation loss decreased (inf --> 10888.186523). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12245.52 .. NELBO:
12246.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5428.98 .. NELBO: 5429.0
*****
*****
Validation loss decreased (10888.186523 --> 10858.000000). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12197.25 .. NELBO:
12197.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5402.44 .. NELBO: 5402.45
*****
*****
Validation loss decreased (10858.000000 --> 10804.897461). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12116.87 .. NELBO:
12116.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5367.0 .. NELBO: 5367.01
*****
*****
Validation loss decreased (10804.897461 --> 10734.024414). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12012.41 .. NELBO:
12012.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5330.55 .. NELBO: 5330.57
*****

```

```

*****
Validation loss decreased (10734.024414 --> 10661.134766). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11904.13 .. NELBO:
11904.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5305.49 .. NELBO: 5305.51
*****
*****
Validation loss decreased (10661.134766 --> 10611.010742). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11820.3 .. NELBO:
11820.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5302.88 .. NELBO: 5302.91
*****
*****
Validation loss decreased (10611.010742 --> 10605.813477). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11782.97 .. NELBO:
11783.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5321.31 .. NELBO: 5321.34
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11785.95 .. NELBO:
11786.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5343.43 .. NELBO: 5343.46
*****

```



```

*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11796.91 .. NELBO:
11796.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.46 .. NELBO: 5353.49
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11793.11 .. NELBO:
11793.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5351.1 .. NELBO: 5351.13
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11778.71 .. NELBO:
11778.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.84 .. NELBO: 5343.86
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.8943756737790783, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)

```

```

    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 31.57 .. Rec_loss: 12264.3 .. NELBO:
12295.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5444.14 .. NELBO: 5444.47
*****
*****
Validation loss decreased (inf --> 10888.931641). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12246.97 .. NELBO:
12247.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5430.08 .. NELBO: 5430.1
*****
*****
Validation loss decreased (10888.931641 --> 10860.201172). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12200.85 .. NELBO:
12200.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5404.47 .. NELBO: 5404.48
*****
*****
Validation loss decreased (10860.201172 --> 10808.963867). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12123.52 .. NELBO:
12123.55
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5369.8 .. NELBO: 5369.81
*****
*****
Validation loss decreased (10808.963867 --> 10739.622070). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12021.52 .. NELBO:
12021.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.33 .. NELBO: 5333.35
*****
*****
Validation loss decreased (10739.622070 --> 10666.703125). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11912.94 .. NELBO:
11912.98
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5306.97 .. NELBO: 5306.99
*****
*****
Validation loss decreased (10666.703125 --> 10613.985352). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11826.24 .. NELBO:
11826.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5302.05 .. NELBO: 5302.08
*****
*****
Validation loss decreased (10613.985352 --> 10604.163086). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11784.47 .. NELBO:
11784.53
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5318.75 .. NELBO: 5318.79
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11784.5 .. NELBO:
11784.58
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5341.22 .. NELBO: 5341.26
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11795.93 .. NELBO:
11796.01
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5352.79 .. NELBO: 5352.83
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11793.96 .. NELBO:
11794.03
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5351.5 .. NELBO: 5351.53
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11780.46 .. NELBO:
11780.52
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5344.49 .. NELBO: 5344.52
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.8943756737790783, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 31.91 .. Rec_loss: 12264.33 .. NELBO:
12296.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 5444.3 .. NELBO: 5444.62
*****
*****
Validation loss decreased (inf --> 10889.242188). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 12247.57 .. NELBO:
12248.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5430.47 .. NELBO: 5430.49
*****
*****
Validation loss decreased (10889.242188 --> 10860.979492). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12201.77 .. NELBO:
12201.81

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5404.96 .. NELBO: 5404.97
*****
*****
Validation loss decreased (10860.979492 --> 10809.939453). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12123.86 .. NELBO:
12123.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5370.16 .. NELBO: 5370.17
*****
*****
Validation loss decreased (10809.939453 --> 10740.347656). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12021.19 .. NELBO:
12021.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5333.46 .. NELBO: 5333.47
*****
*****
Validation loss decreased (10740.347656 --> 10666.957031). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11912.58 .. NELBO:
11912.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5306.95 .. NELBO: 5306.97
*****
*****
Validation loss decreased (10666.957031 --> 10613.944336). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11825.26 .. NELBO:
11825.3

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5302.32 .. NELBO: 5302.34
*****
*****
Validation loss decreased (10613.944336 --> 10604.694336). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11783.91 .. NELBO:
11783.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5319.67 .. NELBO: 5319.7
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11785.2 .. NELBO:
11785.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5342.33 .. NELBO: 5342.36
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11796.63 .. NELBO:
11796.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.51 .. NELBO: 5353.54
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11793.98 .. NELBO:
11794.04

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5351.77 .. NELBO: 5351.8
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11780.16 .. NELBO:
11780.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.55 .. NELBO: 5344.57
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 11
model: ETM(
  (t_drop): Dropout(p=0.6446438739119653, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=94, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=94, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=94, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 37.75 .. Rec_loss: 12263.88 .. NELBO:
12301.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.09 .. Rec_loss: 5443.4 .. NELBO: 5446.49
*****
*****
Validation loss decreased (inf --> 10892.972656). Saving model ...

```



```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 4.51 .. Rec_loss: 12245.17 .. NELBO:
12249.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5429.17 .. NELBO: 5429.21
*****
*****
Validation loss decreased (10892.972656 --> 10858.415039). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12199.4 .. NELBO:
12199.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5403.71 .. NELBO: 5403.73
*****
*****
Validation loss decreased (10858.415039 --> 10807.458008). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12121.81 .. NELBO:
12121.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5369.29 .. NELBO: 5369.31
*****
*****
Validation loss decreased (10807.458008 --> 10738.620117). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12020.56 .. NELBO:
12020.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.08 .. NELBO: 5333.1
*****
*****
Validation loss decreased (10738.620117 --> 10666.204102). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11912.56 .. NELBO:
11912.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5306.8 .. NELBO: 5306.82
*****
*****
Validation loss decreased (10666.204102 --> 10613.637695). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11826.53 .. NELBO:
11826.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5301.76 .. NELBO: 5301.78
*****
*****
Validation loss decreased (10613.637695 --> 10603.556641). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.3 .. NELBO:
11784.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5318.36 .. NELBO: 5318.38
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.13 .. NELBO:
11784.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.88 .. NELBO: 5340.9
*****
*****
EarlyStopping counter: 2 out of 5

```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11795.63 .. NELBO:
11795.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.62 .. NELBO: 5352.64
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.68 .. NELBO:
11793.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.56 .. NELBO: 5351.58
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.22 .. NELBO:
11780.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.71 .. NELBO: 5344.73
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.6446438739119653, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=94, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
)

```

```

(mu_q_theta): Linear(in_features=800, out_features=94, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=94, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 38.05 .. Rec_loss: 12264.03 .. NELBO:
12302.08
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.18 .. Rec_loss: 5443.47 .. NELBO: 5446.65
*****
*****
Validation loss decreased (inf --> 10893.318359). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 4.66 .. Rec_loss: 12245.18 .. NELBO:
12249.84
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5428.8 .. NELBO: 5428.84
*****
*****
Validation loss decreased (10893.318359 --> 10857.684570). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12198.1 .. NELBO:
12198.19
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5402.84 .. NELBO: 5402.86
*****
*****
Validation loss decreased (10857.684570 --> 10805.716797). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12119.73 .. NELBO:
12119.77
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5368.05 .. NELBO: 5368.07

```

```

*****
*****
Validation loss decreased (10805.716797 --> 10736.144531). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12017.34 .. NELBO:
12017.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5331.88 .. NELBO: 5331.9
*****
*****
Validation loss decreased (10736.144531 --> 10663.794922). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11910.23 .. NELBO:
11910.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5306.13 .. NELBO: 5306.15
*****
*****
Validation loss decreased (10663.794922 --> 10612.297852). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11825.18 .. NELBO:
11825.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5301.83 .. NELBO: 5301.85
*****
*****
Validation loss decreased (10612.297852 --> 10603.697266). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11784.69 .. NELBO:
11784.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5318.73 .. NELBO: 5318.76

```

```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11784.83 .. NELBO:
11784.88
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5340.92 .. NELBO: 5340.95
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11795.69 .. NELBO:
11795.74
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.25 .. NELBO: 5352.28
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.28 .. NELBO:
11793.33
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.07 .. NELBO: 5351.09
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11779.66 .. NELBO:
11779.71
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.3 .. NELBO: 5344.32

```

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*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.6446438739119653, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=94, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=94, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=94, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 32.87 .. Rec_loss: 12264.17 .. NELBO:
12297.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.67 .. Rec_loss: 5443.88 .. NELBO: 5446.55
*****
*****
Validation loss decreased (inf --> 10893.098633). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 3.94 .. Rec_loss: 12246.7 .. NELBO:
12250.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5429.94 .. NELBO: 5429.97
*****
*****
Validation loss decreased (10893.098633 --> 10859.942383). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 12201.52 .. NELBO:
12201.59
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5404.65 .. NELBO: 5404.67
*****
*****
Validation loss decreased (10859.942383 --> 10809.331055). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12124.83 .. NELBO:
12124.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5370.18 .. NELBO: 5370.2
*****
*****
Validation loss decreased (10809.331055 --> 10740.393555). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12023.15 .. NELBO:
12023.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.68 .. NELBO: 5333.7
*****
*****
Validation loss decreased (10740.393555 --> 10667.397461). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11914.92 .. NELBO:
11914.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5306.98 .. NELBO: 5307.0
*****
*****
Validation loss decreased (10667.397461 --> 10614.003906). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11827.81 .. NELBO:
11827.85
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5301.65 .. NELBO: 5301.67
*****
*****
Validation loss decreased (10614.003906 --> 10603.356445). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11784.88 .. NELBO:
11784.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5318.22 .. NELBO: 5318.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11784.42 .. NELBO:
11784.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5340.81 .. NELBO: 5340.84
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11795.77 .. NELBO:
11795.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.59 .. NELBO: 5352.62
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.92 .. NELBO:
11793.97
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.59 .. NELBO: 5351.61
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11779.99 .. NELBO:
11780.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.82 .. NELBO: 5344.84
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 12
model: ETM(
  (t_drop): Dropout(p=0.4807929486783931, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=53, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=53, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=53, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 12263.35 .. NELBO:
12263.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5442.28 .. NELBO: 5442.57
*****
*****
Validation loss decreased (inf --> 10885.141602). Saving model ...
*****
*****

```

```

Epoch----->2 .. LR: 0.005 .. KL_theta: 2.09 .. Rec_loss: 12240.69 .. NELBO:
12242.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5425.51 .. NELBO: 5425.56
*****
*****
Validation loss decreased (10885.141602 --> 10851.113281). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12187.92 .. NELBO:
12188.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5397.31 .. NELBO: 5397.42
*****
*****
Validation loss decreased (10851.113281 --> 10794.849609). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12102.89 .. NELBO:
12103.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.14 .. Rec_loss: 5360.76 .. NELBO: 5361.9
*****
*****
Validation loss decreased (10794.849609 --> 10723.792969). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 2.78 .. Rec_loss: 11995.53 .. NELBO:
11998.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5325.99 .. NELBO: 5326.42
*****
*****
Validation loss decreased (10723.792969 --> 10652.846680). Saving model ...
*****
*****

```

```

Epoch---->6 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 11893.43 .. NELBO:
11894.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5303.38 .. NELBO: 5303.9
*****
*****
Validation loss decreased (10652.846680 --> 10607.799805). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 11814.38 .. NELBO:
11815.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5302.84 .. NELBO: 5303.11
*****
*****
Validation loss decreased (10607.799805 --> 10606.216797). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.8 .. Rec_loss: 11781.97 .. NELBO:
11782.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5320.94 .. NELBO: 5321.13
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 11784.84 .. NELBO:
11785.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5341.2 .. NELBO: 5341.57
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

```

```

Epoch---->10 .. LR: 0.005 .. KL_theta: 1.59 .. Rec_loss: 11792.66 .. NELBO:
11794.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.55 .. Rec_loss: 5348.06 .. NELBO: 5349.61
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.84 .. Rec_loss: 11784.21 .. NELBO:
11789.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.91 .. Rec_loss: 5342.61 .. NELBO: 5345.52
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 6.82 .. Rec_loss: 11768.43 .. NELBO:
11775.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.33 .. Rec_loss: 5334.12 .. NELBO: 5337.45
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.4807929486783931, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=53, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=53, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=53, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 12263.19 .. NELBO:
12263.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 5441.91 .. NELBO: 5442.57
*****
*****
Validation loss decreased (inf --> 10885.139648). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.13 .. Rec_loss: 12239.67 .. NELBO:
12240.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5424.91 .. NELBO: 5424.96
*****
*****
Validation loss decreased (10885.139648 --> 10849.928711). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12185.45 .. NELBO:
12185.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5396.49 .. NELBO: 5396.89
*****
*****
Validation loss decreased (10849.928711 --> 10793.781250). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 12100.8 .. NELBO:
12101.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 5360.4 .. NELBO: 5361.16
*****
*****

```

```

Validation loss decreased (10793.781250 --> 10722.325195). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.98 .. Rec_loss: 11994.69 .. NELBO:
11996.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.41 .. Rec_loss: 5325.16 .. NELBO: 5326.57
*****
*****
Validation loss decreased (10722.325195 --> 10653.135742). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.92 .. Rec_loss: 11890.63 .. NELBO:
11892.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5303.34 .. NELBO: 5303.54
*****
*****
Validation loss decreased (10653.135742 --> 10607.088867). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.83 .. Rec_loss: 11813.53 .. NELBO:
11815.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5302.9 .. NELBO: 5302.96
*****
*****
Validation loss decreased (10607.088867 --> 10605.919922). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 11781.51 .. NELBO:
11781.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5320.99 .. NELBO: 5321.47
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 11784.46 .. NELBO:
11785.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5342.13 .. NELBO: 5342.19
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 11793.8 .. NELBO:
11794.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.86 .. Rec_loss: 5347.73 .. NELBO: 5349.59
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.45 .. Rec_loss: 11783.87 .. NELBO:
11788.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.94 .. Rec_loss: 5344.39 .. NELBO: 5346.33
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.16 .. Rec_loss: 11769.94 .. NELBO:
11773.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.05 .. Rec_loss: 5337.44 .. NELBO: 5339.49
*****
*****

```



```

EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.4807929486783931, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=53, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=53, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=53, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 12263.12 .. NELBO:
12263.31
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5441.9 .. NELBO: 5442.29
*****
*****
Validation loss decreased (inf --> 10884.585938). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.35 .. Rec_loss: 12239.75 .. NELBO:
12241.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5424.66 .. NELBO: 5424.7
*****
*****
Validation loss decreased (10884.585938 --> 10849.403320). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 12184.99 .. NELBO:
12185.15
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5395.89 .. NELBO: 5396.03
*****
*****
Validation loss decreased (10849.403320 --> 10792.053711). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12098.34 .. NELBO:
12098.88
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.77 .. Rec_loss: 5359.25 .. NELBO: 5360.02
*****
*****
Validation loss decreased (10792.053711 --> 10720.037109). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 1.77 .. Rec_loss: 11991.45 .. NELBO:
11993.22
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5324.33 .. NELBO: 5324.79
*****
*****
Validation loss decreased (10720.037109 --> 10649.581055). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 11887.68 .. NELBO:
11888.31
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5302.78 .. NELBO: 5302.89
*****
*****
Validation loss decreased (10649.581055 --> 10605.771484). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 11811.46 .. NELBO:
11811.92
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5303.84 .. NELBO: 5304.0
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 11781.67 .. NELBO:
11782.09
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5323.33 .. NELBO: 5323.43
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 11786.72 .. NELBO:
11787.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 5342.94 .. NELBO: 5343.48
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.04 .. Rec_loss: 11793.82 .. NELBO:
11794.86
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5350.31 .. NELBO: 5350.78
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.24 .. Rec_loss: 11786.31 .. NELBO:
11788.55
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 1.98 .. Rec_loss: 5344.66 .. NELBO: 5346.64
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 13
model: ETM(
  (t_drop): Dropout(p=0.4194886919840992, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 475.94 .. Rec_loss: 12264.74 .. NELBO:
12740.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.72 .. Rec_loss: 5445.25 .. NELBO:
5457.97
*****
*****
Validation loss decreased (inf --> 10915.924805). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 15.82 .. Rec_loss: 12253.61 .. NELBO:
12269.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 5436.59 .. NELBO: 5437.22
*****
*****
Validation loss decreased (10915.924805 --> 10874.442383). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 1.68 .. Rec_loss: 12224.37 .. NELBO:

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12226.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5418.76 .. NELBO: 5419.15
*****
*****
Validation loss decreased (10874.442383 --> 10838.299805). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 1.06 .. Rec_loss: 12168.97 .. NELBO:
12170.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5390.98 .. NELBO: 5391.16
*****
*****
Validation loss decreased (10838.299805 --> 10782.325195). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 12084.06 .. NELBO:
12084.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5356.29 .. NELBO: 5356.43
*****
*****
Validation loss decreased (10782.325195 --> 10712.855469). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11981.04 .. NELBO:
11981.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5322.62 .. NELBO: 5322.84
*****
*****
Validation loss decreased (10712.855469 --> 10645.689453). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 11877.54 .. NELBO:

```

```
11878.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5302.17 .. NELB0: 5302.52
*****
*****
Validation loss decreased (10645.689453 --> 10605.049805). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 11804.43 .. NELB0:
11805.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5304.56 .. NELB0: 5304.68
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 11776.88 .. NELB0:
11777.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5325.45 .. NELB0: 5325.47
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.6 .. NELB0:
11785.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.87 .. NELB0: 5346.89
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.5 .. NELB0:
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11796.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.21 .. NELBO: 5355.23
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.6 .. NELBO:
11791.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.87 .. NELBO: 5351.89
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.4194886919840992, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 581.12 .. Rec_loss: 12265.23 .. NELBO:
12846.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.4 .. Rec_loss: 5445.81 .. NELBO: 5471.21
*****
*****
Validation loss decreased (inf --> 10942.429688). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 37.5 .. Rec_loss: 12255.8 .. NELBO:
12293.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.09 .. Rec_loss: 5438.35 .. NELBO: 5444.44
*****
*****
Validation loss decreased (10942.429688 --> 10888.883789). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 15.94 .. Rec_loss: 12230.55 .. NELBO:
12246.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.03 .. Rec_loss: 5422.66 .. NELBO: 5427.69
*****
*****
Validation loss decreased (10888.883789 --> 10855.383789). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 11.88 .. Rec_loss: 12181.06 .. NELBO:
12192.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.18 .. Rec_loss: 5397.35 .. NELBO: 5399.53
*****
*****
Validation loss decreased (10855.383789 --> 10799.056641). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 4.88 .. Rec_loss: 12104.03 .. NELBO:
12108.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 5364.29 .. NELBO: 5365.04
*****
*****
Validation loss decreased (10799.056641 --> 10730.077148). Saving model ...

```



```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.75 .. Rec_loss: 12004.22 .. NELBO:
12005.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5329.99 .. NELBO: 5330.37
*****
*****
Validation loss decreased (10730.077148 --> 10660.726562). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.91 .. Rec_loss: 11900.06 .. NELBO:
11900.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5305.58 .. NELBO: 5305.78
*****
*****
Validation loss decreased (10660.726562 --> 10611.552734). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11818.17 .. NELBO:
11818.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5302.0 .. NELBO: 5302.08
*****
*****
Validation loss decreased (10611.552734 --> 10604.171875). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11779.22 .. NELBO:
11779.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5319.52 .. NELBO: 5319.55
*****
*****
EarlyStopping counter: 1 out of 5

```

```

*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11782.23 .. NELBO:
11782.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.48 .. NELBO: 5342.5
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.54 .. NELBO:
11794.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5354.48 .. NELBO: 5354.49
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.22 .. NELBO:
11794.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.46 .. NELBO: 5353.47
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11780.72 .. NELBO:
11780.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.42 .. NELBO: 5346.43
*****
*****
EarlyStopping counter: 5 out of 5

```

```

Early stopping
model: ETM(
  (t_drop): Dropout(p=0.4194886919840992, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 539.94 .. Rec_loss: 12265.0 .. NELBO:
12804.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 15.56 .. Rec_loss: 5445.65 .. NELBO:
5461.21
*****
*****
Validation loss decreased (inf --> 10922.418945). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 23.0 .. Rec_loss: 12254.5 .. NELBO:
12277.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.84 .. Rec_loss: 5437.02 .. NELBO: 5440.86
*****
*****
Validation loss decreased (10922.418945 --> 10881.708008). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 9.68 .. Rec_loss: 12225.83 .. NELBO:
12235.51
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 2.52 .. Rec_loss: 5420.0 .. NELBO: 5422.52
*****
*****
Validation loss decreased (10881.708008 --> 10845.033203). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 5.69 .. Rec_loss: 12171.8 .. NELBO:
12177.49
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.07 .. Rec_loss: 5393.28 .. NELBO: 5394.35
*****
*****
Validation loss decreased (10845.033203 --> 10788.703125). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 2.42 .. Rec_loss: 12090.22 .. NELBO:
12092.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5359.46 .. NELBO: 5359.88
*****
*****
Validation loss decreased (10788.703125 --> 10719.761719). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.94 .. Rec_loss: 11990.11 .. NELBO:
11991.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5325.69 .. NELBO: 5325.88
*****
*****
Validation loss decreased (10719.761719 --> 10651.752930). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11887.14 .. NELBO:
11887.57
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5303.43 .. NELBO: 5303.52
*****
*****
Validation loss decreased (10651.752930 --> 10607.041992). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 11808.76 .. NELBO:
11808.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5303.1 .. NELBO: 5303.15
*****
*****
Validation loss decreased (10607.041992 --> 10606.301758). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11776.97 .. NELBO:
11777.07
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5322.92 .. NELBO: 5322.95
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11783.62 .. NELBO:
11783.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.62 .. NELBO: 5345.64
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.41 .. NELBO:
11796.46
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.76 .. NELBO: 5355.78
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.39 .. NELBO:
11793.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.23 .. NELBO: 5353.25
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11778.85 .. NELBO:
11778.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.7 .. NELBO: 5345.72
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 14
model: ETM(
  (t_drop): Dropout(p=0.3979207729305147, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=60, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=60, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=60, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12263.37 .. NELBO:
12263.59

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 5442.28 .. NELBO: 5442.84
*****
*****
Validation loss decreased (inf --> 10885.696289). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.34 .. Rec_loss: 12240.78 .. NELBO:
12242.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5425.46 .. NELBO: 5425.48
*****
*****
Validation loss decreased (10885.696289 --> 10850.963867). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 12187.45 .. NELBO:
12187.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5397.19 .. NELBO: 5397.32
*****
*****
Validation loss decreased (10850.963867 --> 10794.658203). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 12102.67 .. NELBO:
12102.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5360.88 .. NELBO: 5361.22
*****
*****
Validation loss decreased (10794.658203 --> 10722.437500). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.16 .. Rec_loss: 11996.02 .. NELBO:
11997.18

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 5325.27 .. NELBO: 5326.54
*****
*****
Validation loss decreased (10722.437500 --> 10653.072266). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.78 .. Rec_loss: 11890.93 .. NELBO:
11892.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5303.31 .. NELBO: 5303.43
*****
*****
Validation loss decreased (10653.072266 --> 10606.871094). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 11814.25 .. NELBO:
11814.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5303.34 .. NELBO: 5303.39
*****
*****
Validation loss decreased (10606.871094 --> 10606.792969). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 11782.04 .. NELBO:
11782.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5322.38 .. NELBO: 5322.53
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 11786.16 .. NELBO:
11786.46

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5342.48 .. NELBO: 5342.97
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.22 .. Rec_loss: 11794.16 .. NELBO:
11795.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.23 .. Rec_loss: 5349.74 .. NELBO: 5350.97
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.04 .. Rec_loss: 11787.06 .. NELBO:
11789.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.93 .. Rec_loss: 5345.58 .. NELBO: 5347.51
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 5.02 .. Rec_loss: 11770.15 .. NELBO:
11775.17
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.13 .. Rec_loss: 5337.1 .. NELBO: 5340.23
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.3979207729305147, inplace=False)
  (theta_act): SELU()

```

```

(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=60, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): SELU()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=60, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=60, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 12263.48 .. NELBO:
12263.72
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5442.41 .. NELBO: 5442.8
*****
*****
Validation loss decreased (inf --> 10885.601562). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 12241.56 .. NELBO:
12243.35
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5425.62 .. NELBO: 5425.67
*****
*****
Validation loss decreased (10885.601562 --> 10851.340820). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 12188.0 .. NELBO:
12188.18
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5397.02 .. NELBO: 5397.25
*****
*****
Validation loss decreased (10851.340820 --> 10794.508789). Saving model ...
*****

```

```

*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 1.31 .. Rec_loss: 12101.46 .. NELBO:
12102.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.53 .. Rec_loss: 5359.53 .. NELBO: 5362.06
*****
*****
Validation loss decreased (10794.508789 --> 10724.110352). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 4.58 .. Rec_loss: 11991.92 .. NELBO:
11996.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.39 .. Rec_loss: 5324.86 .. NELBO: 5326.25
*****
*****
Validation loss decreased (10724.110352 --> 10652.488281). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.5 .. Rec_loss: 11888.56 .. NELBO:
11891.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.13 .. Rec_loss: 5302.67 .. NELBO: 5304.8
*****
*****
Validation loss decreased (10652.488281 --> 10609.609375). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.71 .. Rec_loss: 11812.02 .. NELBO:
11815.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 5302.56 .. NELBO: 5303.17
*****
*****
Validation loss decreased (10609.609375 --> 10606.347656). Saving model ...
*****

```

```

*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.71 .. Rec_loss: 11781.34 .. NELBO:
11783.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5321.23 .. NELBO: 5321.4
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.82 .. Rec_loss: 11784.26 .. NELBO:
11785.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 5340.0 .. NELBO: 5340.73
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.14 .. Rec_loss: 11789.95 .. NELBO:
11792.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.19 .. Rec_loss: 5346.54 .. NELBO: 5347.73
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.81 .. Rec_loss: 11782.47 .. NELBO:
11786.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.35 .. Rec_loss: 5341.13 .. NELBO: 5343.48
*****
*****
EarlyStopping counter: 4 out of 5
*****

```

```

*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 5.72 .. Rec_loss: 11765.17 .. NELBO:
11770.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.68 .. Rec_loss: 5332.67 .. NELBO: 5336.35
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.3979207729305147, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=60, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=60, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=60, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 12263.27 .. NELBO:
12263.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 5442.13 .. NELBO: 5442.83
*****
*****
Validation loss decreased (inf --> 10885.665039). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.47 .. Rec_loss: 12239.9 .. NELBO:
12241.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5424.9 .. NELBO: 5424.95
*****

```

```

*****
Validation loss decreased (10885.665039 --> 10849.893555). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 12185.44 .. NELBO:
12185.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5396.17 .. NELBO: 5396.36
*****
*****
Validation loss decreased (10849.893555 --> 10792.721680). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 12099.48 .. NELBO:
12099.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 5359.42 .. NELBO: 5360.15
*****
*****
Validation loss decreased (10792.721680 --> 10720.300781). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.26 .. Rec_loss: 11990.89 .. NELBO:
11993.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.61 .. Rec_loss: 5323.99 .. NELBO: 5325.6
*****
*****
Validation loss decreased (10720.300781 --> 10651.197266). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.08 .. Rec_loss: 11886.09 .. NELBO:
11888.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5302.96 .. NELBO: 5303.22
*****

```

```

*****
Validation loss decreased (10651.197266 --> 10606.458008). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 11811.43 .. NELBO:
11812.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5303.76 .. NELBO: 5303.83
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 11781.39 .. NELBO:
11781.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5322.56 .. NELBO: 5323.06
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.93 .. Rec_loss: 11785.64 .. NELBO:
11786.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5342.87 .. NELBO: 5343.04
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.45 .. Rec_loss: 11793.28 .. NELBO:
11794.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.33 .. Rec_loss: 5347.84 .. NELBO: 5350.17
*****

```

```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.95 .. Rec_loss: 11783.52 .. NELBO:
11787.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.74 .. Rec_loss: 5344.96 .. NELBO: 5346.7
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 15
model: ETM(
  (t_drop): Dropout(p=0.21864691004094378, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=64, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=64, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=64, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 12263.16 .. NELBO:
12263.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 5441.98 .. NELBO: 5442.67
*****
*****
Validation loss decreased (inf --> 10885.349609). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.57 .. Rec_loss: 12239.81 .. NELBO:
12241.38
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5424.82 .. NELBO: 5424.85
*****
*****
Validation loss decreased (10885.349609 --> 10849.699219). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12185.58 .. NELBO:
12185.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5396.29 .. NELBO: 5396.41
*****
*****
Validation loss decreased (10849.699219 --> 10792.820312). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12100.47 .. NELBO:
12100.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5360.0 .. NELBO: 5360.24
*****
*****
Validation loss decreased (10792.820312 --> 10720.473633). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.96 .. Rec_loss: 11993.05 .. NELBO:
11994.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.92 .. Rec_loss: 5324.29 .. NELBO: 5326.21
*****
*****
Validation loss decreased (10720.473633 --> 10652.421875). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.02 .. Rec_loss: 11887.63 .. NELBO:
11890.65
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5302.99 .. NELBO: 5303.32
*****
*****
Validation loss decreased (10652.421875 --> 10606.638672). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 11813.05 .. NELBO:
11813.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5303.34 .. NELBO: 5303.42
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 11781.8 .. NELBO:
11782.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5322.17 .. NELBO: 5322.4
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 11785.87 .. NELBO:
11786.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5342.57 .. NELBO: 5342.76
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 11794.05 .. NELBO:
11794.74
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.59 .. Rec_loss: 5349.01 .. NELBO: 5350.6
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.46 .. Rec_loss: 11785.86 .. NELBO:
11788.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.18 .. Rec_loss: 5346.29 .. NELBO: 5347.47
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.21864691004094378, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=64, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=64, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=64, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 12263.53 .. NELBO:
12263.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5442.72 .. NELBO: 5443.23
*****
*****
Validation loss decreased (inf --> 10886.461914). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.45 .. Rec_loss: 12242.19 .. NELBO:

```

```
12243.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5426.72 .. NELBO: 5426.75
*****
*****
Validation loss decreased (10886.461914 --> 10853.489258). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12191.43 .. NELBO:
12191.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5399.41 .. NELBO: 5399.51
*****
*****
Validation loss decreased (10853.489258 --> 10799.018555). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 12109.36 .. NELBO:
12109.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5363.71 .. NELBO: 5363.98
*****
*****
Validation loss decreased (10799.018555 --> 10727.954102). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.99 .. Rec_loss: 12004.03 .. NELBO:
12005.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 5327.81 .. NELBO: 5329.1
*****
*****
Validation loss decreased (10727.954102 --> 10658.210938). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.95 .. Rec_loss: 11897.89 .. NELBO:
```

```
11899.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5304.5 .. NELBO: 5304.79
*****
*****
Validation loss decreased (10658.210938 --> 10609.567383). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11818.86 .. NELBO:
11819.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5302.51 .. NELBO: 5302.57
*****
*****
Validation loss decreased (10609.567383 --> 10605.139648). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 11782.63 .. NELBO:
11782.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5320.21 .. NELBO: 5320.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 11784.64 .. NELBO:
11784.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.9 .. Rec_loss: 5340.5 .. NELBO: 5341.4
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.33 .. Rec_loss: 11793.18 .. NELBO:
```

```

11794.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.9 .. Rec_loss: 5349.56 .. NELBO: 5350.46
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.91 .. Rec_loss: 11786.91 .. NELBO:
11789.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.95 .. Rec_loss: 5345.16 .. NELBO: 5348.11
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 5.58 .. Rec_loss: 11770.16 .. NELBO:
11775.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.77 .. Rec_loss: 5340.37 .. NELBO: 5342.14
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.21864691004094378, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=64, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=64, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=64, bias=True)
)

```

```

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 12263.73 .. NELBO:
12263.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 5442.9 .. NELBO: 5443.46
*****
*****
Validation loss decreased (inf --> 10886.926758). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.54 .. Rec_loss: 12243.15 .. NELBO:
12244.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5427.04 .. NELBO: 5427.05
*****
*****
Validation loss decreased (10886.926758 --> 10854.103516). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12192.42 .. NELBO:
12192.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5399.53 .. NELBO: 5399.66
*****
*****
Validation loss decreased (10854.103516 --> 10799.306641). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12109.8 .. NELBO:
12110.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 5363.33 .. NELBO: 5363.9
*****
*****
Validation loss decreased (10799.306641 --> 10727.807617). Saving model ...

```

```

*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.96 .. Rec_loss: 12002.53 .. NELBO:
12004.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.33 .. Rec_loss: 5327.25 .. NELBO: 5328.58
*****
*****
Validation loss decreased (10727.807617 --> 10657.151367). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 11896.84 .. NELBO:
11898.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5304.02 .. NELBO: 5304.13
*****
*****
Validation loss decreased (10657.151367 --> 10608.275391). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 11818.35 .. NELBO:
11818.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5302.46 .. NELBO: 5302.56
*****
*****
Validation loss decreased (10608.275391 --> 10605.130859). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 11782.85 .. NELBO:
11783.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5320.88 .. NELBO: 5321.05
*****
*****
EarlyStopping counter: 1 out of 5

```



```

*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 11785.27 .. NELBO:
11785.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5341.86 .. NELBO: 5342.24
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.86 .. Rec_loss: 11794.77 .. NELBO:
11795.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.95 .. Rec_loss: 5350.08 .. NELBO: 5351.03
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.73 .. Rec_loss: 11788.24 .. NELBO:
11789.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.66 .. Rec_loss: 5346.46 .. NELBO: 5348.12
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 4.38 .. Rec_loss: 11772.45 .. NELBO:
11776.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.55 .. Rec_loss: 5338.46 .. NELBO: 5341.01
*****
*****
EarlyStopping counter: 5 out of 5

```

```

Early stopping
Current call: 16
model: ETM(
  (t_drop): Dropout(p=0.17697962896727046, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=71, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=71, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=71, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 12263.45 .. NELBO:
12263.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.8 .. Rec_loss: 5442.62 .. NELBO: 5443.42
*****
*****
Validation loss decreased (inf --> 10886.834961). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.86 .. Rec_loss: 12241.72 .. NELBO:
12243.58
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5425.96 .. NELBO: 5426.02
*****
*****
Validation loss decreased (10886.834961 --> 10852.042969). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 12188.44 .. NELBO:
12188.6
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5397.83 .. NELBO: 5398.0
*****
*****
Validation loss decreased (10852.042969 --> 10795.990234). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12103.46 .. NELBO:
12103.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5361.4 .. NELBO: 5361.91
*****
*****
Validation loss decreased (10795.990234 --> 10723.813477). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 1.58 .. Rec_loss: 11996.17 .. NELBO:
11997.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.91 .. Rec_loss: 5325.68 .. NELBO: 5327.59
*****
*****
Validation loss decreased (10723.813477 --> 10655.184570). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 2.65 .. Rec_loss: 11890.35 .. NELBO:
11893.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5303.81 .. NELBO: 5304.23
*****
*****
Validation loss decreased (10655.184570 --> 10608.466797). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 11814.28 .. NELBO:
11815.12
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5303.38 .. NELBO: 5303.46
*****
*****
Validation loss decreased (10608.466797 --> 10606.907227). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 11781.8 .. NELBO:
11782.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 5321.23 .. NELBO: 5321.95
*****
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 1.2 .. Rec_loss: 11784.45 .. NELBO:
11785.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5341.77 .. NELBO: 5342.0
*****
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 2.05 .. Rec_loss: 11792.15 .. NELBO:
11794.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.21 .. Rec_loss: 5345.94 .. NELBO: 5349.15
*****
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 7.57 .. Rec_loss: 11777.77 .. NELBO:
11785.34
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 4.2 .. Rec_loss: 5340.76 .. NELBO: 5344.96
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 7.62 .. Rec_loss: 11764.06 .. NELBO:
11771.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.57 .. Rec_loss: 5338.56 .. NELBO: 5341.13
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.17697962896727046, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=71, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=71, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=71, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 12263.41 .. NELBO:
12263.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.87 .. Rec_loss: 5442.4 .. NELBO: 5443.27
*****
*****
Validation loss decreased (inf --> 10886.540039). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 1.49 .. Rec_loss: 12241.33 .. NELBO:
12242.82
*****

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```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5425.76 .. NELBO: 5425.78
*****
*****
Validation loss decreased (10886.540039 --> 10851.573242). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 12188.28 .. NELBO:
12188.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5397.47 .. NELBO: 5397.74
*****
*****
Validation loss decreased (10851.573242 --> 10795.477539). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12103.6 .. NELBO:
12104.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.74 .. Rec_loss: 5360.9 .. NELBO: 5361.64
*****
*****
Validation loss decreased (10795.477539 --> 10723.262695). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 11996.68 .. NELBO:
11998.28
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.42 .. Rec_loss: 5325.23 .. NELBO: 5326.65
*****
*****
Validation loss decreased (10723.262695 --> 10653.291992). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.11 .. Rec_loss: 11890.41 .. NELBO:
11892.52
*****

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```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5303.18 .. NELBO: 5303.48
*****
*****
Validation loss decreased (10653.291992 --> 10606.958984). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.34 .. Rec_loss: 11813.86 .. NELBO:
11815.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5302.88 .. NELBO: 5303.14
*****
*****
Validation loss decreased (10606.958984 --> 10606.298828). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 11781.89 .. NELBO:
11782.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5322.22 .. NELBO: 5322.28
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 11785.94 .. NELBO:
11786.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 5341.34 .. NELBO: 5342.31
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.21 .. Rec_loss: 11791.66 .. NELBO:
11793.87
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 5349.01 .. NELBO: 5350.1
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.49 .. Rec_loss: 11785.22 .. NELBO:
11787.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.86 .. Rec_loss: 5342.5 .. NELBO: 5346.36
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 8.02 .. Rec_loss: 11765.61 .. NELBO:
11773.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.99 .. Rec_loss: 5337.56 .. NELBO: 5340.55
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.17697962896727046, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=71, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=71, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=71, bias=True)
)
*****
*****

```



```

Epoch---->1 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12263.57 .. NELBO:
12263.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.48 .. Rec_loss: 5442.59 .. NELBO: 5444.07
*****
*****
Validation loss decreased (inf --> 10888.129883). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.76 .. Rec_loss: 12242.08 .. NELBO:
12243.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5426.43 .. NELBO: 5426.47
*****
*****
Validation loss decreased (10888.129883 --> 10852.939453). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12190.36 .. NELBO:
12190.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5398.55 .. NELBO: 5398.77
*****
*****
Validation loss decreased (10852.939453 --> 10797.541992). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 12106.49 .. NELBO:
12106.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 5362.37 .. NELBO: 5363.12
*****
*****
Validation loss decreased (10797.541992 --> 10726.243164). Saving model ...
*****
*****

```

```

Epoch----->5 .. LR: 0.005 .. KL_theta: 3.27 .. Rec_loss: 11999.25 .. NELBO:
12002.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.1 .. Rec_loss: 5326.73 .. NELBO: 5327.83
*****
*****
Validation loss decreased (10726.243164 --> 10655.662109). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 1.57 .. Rec_loss: 11895.31 .. NELBO:
11896.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5303.82 .. NELBO: 5304.23
*****
*****
Validation loss decreased (10655.662109 --> 10608.444336). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 1.06 .. Rec_loss: 11816.41 .. NELBO:
11817.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5302.79 .. NELBO: 5302.88
*****
*****
Validation loss decreased (10608.444336 --> 10605.764648). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 11782.15 .. NELBO:
11782.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5321.21 .. NELBO: 5321.71
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****

```

```

Epoch----->9 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 11785.7 .. NELBO:
11786.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5342.61 .. NELBO: 5342.67
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 11795.12 .. NELBO:
11795.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5350.72 .. NELBO: 5351.2
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 11789.05 .. NELBO:
11790.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.52 .. Rec_loss: 5346.76 .. NELBO: 5348.28
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 2.32 .. Rec_loss: 11773.3 .. NELBO:
11775.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 5340.69 .. NELBO: 5341.44
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 17

```

```

model: ETM(
  (t_drop): Dropout(p=0.16571100775900224, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=67, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=67, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=67, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1191.41 .. Rec_loss: 12264.66 .. NELBO:
13456.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 32.54 .. Rec_loss: 5445.07 .. NELBO:
5477.61
*****
*****
Validation loss decreased (inf --> 10955.220703). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 45.39 .. Rec_loss: 12253.56 .. NELBO:
12298.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.89 .. Rec_loss: 5437.0 .. NELBO: 5453.89
*****
*****
Validation loss decreased (10955.220703 --> 10907.790039). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 38.05 .. Rec_loss: 12226.71 .. NELBO:
12264.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 15.33 .. Rec_loss: 5420.11 .. NELBO:

```

```

5435.44
*****
*****
Validation loss decreased (10907.790039 --> 10870.876953). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 30.07 .. Rec_loss: 12173.26 .. NELBO:
12203.33
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.73 .. Rec_loss: 5394.04 .. NELBO: 5402.77
*****
*****
Validation loss decreased (10870.876953 --> 10805.546875). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 18.03 .. Rec_loss: 12094.97 .. NELBO:
12113.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.96 .. Rec_loss: 5361.02 .. NELBO: 5366.98
*****
*****
Validation loss decreased (10805.546875 --> 10733.958984). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 13.04 .. Rec_loss: 11996.17 .. NELBO:
12009.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.72 .. Rec_loss: 5327.51 .. NELBO: 5332.23
*****
*****
Validation loss decreased (10733.958984 --> 10664.477539). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 10.79 .. Rec_loss: 11894.23 .. NELBO:
11905.02
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 3.91 .. Rec_loss: 5304.47 .. NELBO: 5308.38
*****
*****
Validation loss decreased (10664.477539 --> 10616.760742). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 8.51 .. Rec_loss: 11815.48 .. NELBO:
11823.99
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.19 .. Rec_loss: 5302.04 .. NELBO: 5305.23
*****
*****
Validation loss decreased (10616.760742 --> 10610.443359). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 6.81 .. Rec_loss: 11779.71 .. NELBO:
11786.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.42 .. Rec_loss: 5319.21 .. NELBO: 5321.63
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 5.27 .. Rec_loss: 11782.55 .. NELBO:
11787.82
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.71 .. Rec_loss: 5340.21 .. NELBO: 5341.92
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 3.51 .. Rec_loss: 11792.84 .. NELBO:
11796.35
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 5350.3 .. NELBO: 5351.57
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 2.8 .. Rec_loss: 11790.61 .. NELBO:
11793.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.15 .. Rec_loss: 5348.48 .. NELBO: 5349.63
*****
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 2.66 .. Rec_loss: 11776.5 .. NELBO:
11779.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.18 .. Rec_loss: 5341.53 .. NELBO: 5342.71
*****
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.16571100775900224, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=67, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=67, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=67, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 573.41 .. Rec_loss: 12265.71 .. NELBO:
12839.12
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.05 .. Rec_loss: 5445.25 .. NELBO: 5463.3
*****
*****
Validation loss decreased (inf --> 10926.587891). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 21.58 .. Rec_loss: 12254.38 .. NELBO:
12275.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.02 .. Rec_loss: 5437.17 .. NELBO: 5439.19
*****
*****
Validation loss decreased (10926.587891 --> 10878.382812). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 3.86 .. Rec_loss: 12226.91 .. NELBO:
12230.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.98 .. Rec_loss: 5420.12 .. NELBO: 5421.1
*****
*****
Validation loss decreased (10878.382812 --> 10842.209961). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 1.92 .. Rec_loss: 12173.17 .. NELBO:
12175.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5393.28 .. NELBO: 5393.69
*****
*****
Validation loss decreased (10842.209961 --> 10787.382812). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.78 .. Rec_loss: 12091.9 .. NELBO:
12092.68
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5359.32 .. NELBO: 5359.54
*****
*****
Validation loss decreased (10787.382812 --> 10719.064453). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11990.84 .. NELBO:
11991.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5325.54 .. NELBO: 5325.74
*****
*****
Validation loss decreased (10719.064453 --> 10651.462891). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 11888.31 .. NELBO:
11888.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5303.46 .. NELBO: 5303.61
*****
*****
Validation loss decreased (10651.462891 --> 10607.225586). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 11811.36 .. NELBO:
11811.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5303.04 .. NELBO: 5303.12
*****
*****
Validation loss decreased (10607.225586 --> 10606.249023). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 11779.33 .. NELBO:
11779.47
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5322.07 .. NELBO: 5322.1
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11784.43 .. NELBO:
11784.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.0 .. NELBO: 5344.02
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.37 .. NELBO:
11796.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.1 .. NELBO: 5354.12
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.95 .. NELBO:
11792.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.93 .. NELBO: 5351.95
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11778.84 .. NELBO:
11778.88
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.8 .. NELBO: 5344.82
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.16571100775900224, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=67, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=67, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=67, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 934.72 .. Rec_loss: 12264.08 .. NELBO:
13198.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 26.21 .. Rec_loss: 5445.06 .. NELBO:
5471.27
*****
*****
Validation loss decreased (inf --> 10942.530273). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 35.42 .. Rec_loss: 12252.82 .. NELBO:
12288.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.02 .. Rec_loss: 5436.39 .. NELBO:
5446.41
*****
*****
Validation loss decreased (10942.530273 --> 10892.812500). Saving model ...

```

```

*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 22.37 .. Rec_loss: 12223.56 .. NELBO:
12245.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.08 .. Rec_loss: 5418.54 .. NELBO: 5427.62
*****
*****
Validation loss decreased (10892.812500 --> 10855.246094). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 17.88 .. Rec_loss: 12167.12 .. NELBO:
12185.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.37 .. Rec_loss: 5390.58 .. NELBO: 5395.95
*****
*****
Validation loss decreased (10855.246094 --> 10791.909180). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 10.4 .. Rec_loss: 12083.24 .. NELBO:
12093.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.09 .. Rec_loss: 5355.97 .. NELBO: 5359.06
*****
*****
Validation loss decreased (10791.909180 --> 10718.111328). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 6.24 .. Rec_loss: 11979.52 .. NELBO:
11985.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.93 .. Rec_loss: 5322.68 .. NELBO: 5324.61
*****
*****
Validation loss decreased (10718.111328 --> 10649.219727). Saving model ...

```

```

*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 3.85 .. Rec_loss: 11878.22 .. NELBO:
11882.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.25 .. Rec_loss: 5302.41 .. NELBO: 5303.66
*****
*****
Validation loss decreased (10649.219727 --> 10607.317383). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 2.48 .. Rec_loss: 11804.68 .. NELBO:
11807.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.78 .. Rec_loss: 5304.48 .. NELBO: 5305.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 1.56 .. Rec_loss: 11777.66 .. NELBO:
11779.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5324.93 .. NELBO: 5325.35
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 11785.61 .. NELBO:
11786.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5345.94 .. NELBO: 5346.12
*****
*****
EarlyStopping counter: 3 out of 5

```

```

*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 11795.91 .. NELBO:
11796.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5354.22 .. NELBO: 5354.29
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11791.28 .. NELBO:
11791.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5351.01 .. NELBO: 5351.04
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 18
model: ETM(
  (t_drop): Dropout(p=0.13988733439379653, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1179.41 .. Rec_loss: 12265.18 .. NELBO:
13444.59
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 25.72 .. Rec_loss: 5445.98 .. NELBO: 5471.7
*****
*****
Validation loss decreased (inf --> 10943.392578). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 32.8 .. Rec_loss: 12255.77 .. NELBO:
12288.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.52 .. Rec_loss: 5438.13 .. NELBO: 5445.65
*****
*****
Validation loss decreased (10943.392578 --> 10891.310547). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 15.79 .. Rec_loss: 12229.86 .. NELBO:
12245.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.5 .. Rec_loss: 5422.04 .. NELBO: 5427.54
*****
*****
Validation loss decreased (10891.310547 --> 10855.062500). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 10.39 .. Rec_loss: 12178.67 .. NELBO:
12189.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.83 .. Rec_loss: 5396.33 .. NELBO: 5399.16
*****
*****
Validation loss decreased (10855.062500 --> 10798.334961). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 5.57 .. Rec_loss: 12100.31 .. NELBO:
12105.88
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 1.44 .. Rec_loss: 5363.15 .. NELBO: 5364.59
*****
*****
Validation loss decreased (10798.334961 --> 10729.178711). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 2.76 .. Rec_loss: 12000.98 .. NELBO:
12003.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 5329.11 .. NELBO: 5329.82
*****
*****
Validation loss decreased (10729.178711 --> 10659.630859). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 1.41 .. Rec_loss: 11897.82 .. NELBO:
11899.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5305.29 .. NELBO: 5305.68
*****
*****
Validation loss decreased (10659.630859 --> 10611.374023). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 11816.17 .. NELBO:
11816.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5302.41 .. NELBO: 5302.56
*****
*****
Validation loss decreased (10611.374023 --> 10605.126953). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 11779.6 .. NELBO:
11779.88
*****
*****
*****

```



```

VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5320.12 .. NELBO: 5320.17
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11782.51 .. NELBO:
11782.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5342.61 .. NELBO: 5342.64
*****
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11794.98 .. NELBO:
11795.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.99 .. NELBO: 5354.01
*****
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.86 .. NELBO:
11793.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.7 .. NELBO: 5352.72
*****
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.78 .. NELBO:
11780.82
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.69 .. NELBO: 5345.71
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.13988733439379653, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1124.76 .. Rec_loss: 12264.49 .. NELBO:
13389.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.84 .. Rec_loss: 5445.45 .. NELBO:
5464.29
*****
*****
Validation loss decreased (inf --> 10928.583008). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 21.86 .. Rec_loss: 12253.76 .. NELBO:
12275.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.65 .. Rec_loss: 5436.87 .. NELBO: 5439.52
*****
*****
Validation loss decreased (10928.583008 --> 10879.047852). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 5.46 .. Rec_loss: 12225.01 .. NELBO:
12230.47

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.78 .. Rec_loss: 5419.22 .. NELBO: 5421.0
*****
*****
Validation loss decreased (10879.047852 --> 10842.008789). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.5 .. Rec_loss: 12169.14 .. NELBO:
12172.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.03 .. Rec_loss: 5391.64 .. NELBO: 5392.67
*****
*****
Validation loss decreased (10842.008789 --> 10785.331055). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.14 .. Rec_loss: 12085.8 .. NELBO:
12087.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 5357.07 .. NELBO: 5357.83
*****
*****
Validation loss decreased (10785.331055 --> 10715.668945). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.73 .. Rec_loss: 11982.15 .. NELBO:
11983.88
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 5323.31 .. NELBO: 5323.99
*****
*****
Validation loss decreased (10715.668945 --> 10647.972656). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.58 .. Rec_loss: 11878.88 .. NELBO:
11880.46

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 5302.6 .. NELBO: 5303.17
*****
*****
Validation loss decreased (10647.972656 --> 10606.337891). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.17 .. Rec_loss: 11804.64 .. NELBO:
11805.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5304.66 .. NELBO: 5305.01
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 11777.24 .. NELBO:
11777.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5325.52 .. NELBO: 5325.76
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 11785.85 .. NELBO:
11786.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5346.99 .. NELBO: 5347.14
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 11796.66 .. NELBO:
11796.98

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5355.37 .. NELBO: 5355.46
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11791.52 .. NELBO:
11791.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5352.03 .. NELBO: 5352.08
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.13988733439379653, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1448.57 .. Rec_loss: 12263.77 .. NELBO:
13712.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.57 .. Rec_loss: 5445.49 .. NELBO:
5470.06
*****
*****
Validation loss decreased (inf --> 10940.107422). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 30.39 .. Rec_loss: 12253.68 .. NELBO:
12284.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.71 .. Rec_loss: 5436.42 .. NELBO: 5444.13
*****
*****
Validation loss decreased (10940.107422 --> 10888.250000). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 16.87 .. Rec_loss: 12223.82 .. NELBO:
12240.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.35 .. Rec_loss: 5418.78 .. NELBO: 5425.13
*****
*****
Validation loss decreased (10888.250000 --> 10850.260742). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 11.69 .. Rec_loss: 12168.22 .. NELBO:
12179.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.26 .. Rec_loss: 5391.86 .. NELBO: 5395.12
*****
*****
Validation loss decreased (10850.260742 --> 10790.249023). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 6.35 .. Rec_loss: 12086.88 .. NELBO:
12093.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.77 .. Rec_loss: 5358.08 .. NELBO: 5359.85
*****
*****
Validation loss decreased (10790.249023 --> 10719.697266). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.55 .. Rec_loss: 11985.3 .. NELBO:
11988.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.95 .. Rec_loss: 5324.74 .. NELBO: 5325.69
*****
*****
Validation loss decreased (10719.697266 --> 10651.364258). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 11883.66 .. NELBO:
11885.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5303.36 .. NELBO: 5303.89
*****
*****
Validation loss decreased (10651.364258 --> 10607.782227). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.08 .. Rec_loss: 11807.65 .. NELBO:
11808.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5303.89 .. NELBO: 5304.2
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 11777.43 .. NELBO:
11778.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5323.78 .. NELBO: 5323.96
*****
*****
EarlyStopping counter: 2 out of 5

```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 11784.09 .. NELBO:
11784.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5345.72 .. NELBO: 5345.81
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 11796.3 .. NELBO:
11796.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5355.17 .. NELBO: 5355.21
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11792.14 .. NELBO:
11792.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.51 .. NELBO: 5352.54
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 19
model: ETM(
  (t_drop): Dropout(p=0.09423747931067931, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
)

```



```

)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1332.45 .. Rec_loss: 12264.03 .. NELBO:
13596.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 22.86 .. Rec_loss: 5444.98 .. NELBO:
5467.84
*****
*****
Validation loss decreased (inf --> 10935.675781). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 27.21 .. Rec_loss: 12252.21 .. NELBO:
12279.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.07 .. Rec_loss: 5435.86 .. NELBO: 5441.93
*****
*****
Validation loss decreased (10935.675781 --> 10883.862305). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 12.85 .. Rec_loss: 12221.89 .. NELBO:
12234.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.95 .. Rec_loss: 5417.78 .. NELBO: 5423.73
*****
*****
Validation loss decreased (10883.862305 --> 10847.464844). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 11.84 .. Rec_loss: 12165.17 .. NELBO:
12177.01
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.43 .. Rec_loss: 5389.88 .. NELBO: 5394.31
*****
*****
Validation loss decreased (10847.464844 --> 10788.611328). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 9.08 .. Rec_loss: 12080.39 .. NELBO:
12089.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.34 .. Rec_loss: 5355.24 .. NELBO: 5358.58
*****
*****
Validation loss decreased (10788.611328 --> 10717.149414). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 6.79 .. Rec_loss: 11976.77 .. NELBO:
11983.56
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.63 .. Rec_loss: 5321.94 .. NELBO: 5324.57
*****
*****
Validation loss decreased (10717.149414 --> 10649.134766). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.32 .. Rec_loss: 11875.36 .. NELBO:
11880.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.07 .. Rec_loss: 5302.01 .. NELBO: 5304.08
*****
*****
Validation loss decreased (10649.134766 --> 10608.147461). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.21 .. Rec_loss: 11802.47 .. NELBO:
11806.68
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.52 .. Rec_loss: 5304.79 .. NELBO: 5306.31
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.97 .. Rec_loss: 11776.86 .. NELBO:
11779.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.96 .. Rec_loss: 5325.86 .. NELBO: 5326.82
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.84 .. Rec_loss: 11785.64 .. NELBO:
11787.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5346.73 .. NELBO: 5347.25
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 11796.23 .. NELBO:
11797.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5354.34 .. NELBO: 5354.6
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 11790.0 .. NELBO:
11790.49
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5350.72 .. NELBO: 5350.85
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.09423747931067931, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1170.96 .. Rec_loss: 12264.41 .. NELBO:
13435.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 27.73 .. Rec_loss: 5445.58 .. NELBO:
5473.31
*****
*****
Validation loss decreased (inf --> 10946.617188). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 37.44 .. Rec_loss: 12254.32 .. NELBO:
12291.76
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.14 .. Rec_loss: 5437.29 .. NELBO:
5449.43
*****
*****
Validation loss decreased (10946.617188 --> 10898.840820). Saving model ...
*****
*****

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Epoch----->3 .. LR: 0.005 .. KL_theta: 27.12 .. Rec_loss: 12226.73 .. NELBO:
12253.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.15 .. Rec_loss: 5420.3 .. NELBO: 5432.45
*****
*****
Validation loss decreased (10898.840820 --> 10864.911133). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 23.78 .. Rec_loss: 12172.36 .. NELBO:
12196.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.01 .. Rec_loss: 5393.77 .. NELBO: 5401.78
*****
*****
Validation loss decreased (10864.911133 --> 10803.552734). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 15.37 .. Rec_loss: 12091.93 .. NELBO:
12107.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.27 .. Rec_loss: 5360.27 .. NELBO: 5365.54
*****
*****
Validation loss decreased (10803.552734 --> 10731.061523). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 10.52 .. Rec_loss: 11991.12 .. NELBO:
12001.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.58 .. Rec_loss: 5326.59 .. NELBO: 5330.17
*****
*****
Validation loss decreased (10731.061523 --> 10660.359375). Saving model ...
*****
*****

```

```

Epoch----->7 .. LR: 0.005 .. KL_theta: 6.99 .. Rec_loss: 11889.26 .. NELBO:
11896.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.32 .. Rec_loss: 5303.99 .. NELBO: 5306.31
*****
*****
Validation loss decreased (10660.359375 --> 10612.606445). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 4.42 .. Rec_loss: 11811.14 .. NELBO:
11815.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.3 .. Rec_loss: 5302.86 .. NELBO: 5304.16
*****
*****
Validation loss decreased (10612.606445 --> 10608.315430). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 2.38 .. Rec_loss: 11777.84 .. NELBO:
11780.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 5321.83 .. NELBO: 5322.43
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 11783.44 .. NELBO:
11784.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5343.92 .. NELBO: 5344.17
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

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Epoch---->11 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 11795.21 .. NELBO:
11795.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5353.77 .. NELBO: 5353.98
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 11792.41 .. NELBO:
11792.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5351.31 .. NELBO: 5351.47
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 11778.34 .. NELBO:
11778.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5343.82 .. NELBO: 5343.98
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.09423747931067931, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1492.76 .. Rec_loss: 12264.95 .. NELBO:
13757.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.34 .. Rec_loss: 5445.8 .. NELBO: 5469.14
*****
*****
Validation loss decreased (inf --> 10938.271484). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 28.33 .. Rec_loss: 12254.7 .. NELBO:
12283.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.29 .. Rec_loss: 5437.49 .. NELBO: 5443.78
*****
*****
Validation loss decreased (10938.271484 --> 10887.554688). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 12.8 .. Rec_loss: 12227.1 .. NELBO:
12239.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.65 .. Rec_loss: 5420.36 .. NELBO: 5425.01
*****
*****
Validation loss decreased (10887.554688 --> 10850.017578). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 8.62 .. Rec_loss: 12172.73 .. NELBO:
12181.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.37 .. Rec_loss: 5393.11 .. NELBO: 5395.48
*****
*****

```



```

Validation loss decreased (10850.017578 --> 10790.960938). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 4.47 .. Rec_loss: 12090.18 .. NELBO:
12094.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.22 .. Rec_loss: 5358.55 .. NELBO: 5359.77
*****
*****
Validation loss decreased (10790.960938 --> 10719.529297). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.25 .. Rec_loss: 11986.93 .. NELBO:
11989.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 5324.42 .. NELBO: 5324.99
*****
*****
Validation loss decreased (10719.529297 --> 10649.978516). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.07 .. Rec_loss: 11882.33 .. NELBO:
11883.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5302.77 .. NELBO: 5303.03
*****
*****
Validation loss decreased (10649.978516 --> 10606.069336). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 11806.14 .. NELBO:
11806.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5303.9 .. NELBO: 5304.02
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 11776.7 .. NELBO:
11776.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5324.72 .. NELBO: 5324.77
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11784.79 .. NELBO:
11784.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.91 .. NELBO: 5346.93
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.79 .. NELBO:
11796.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.89 .. NELBO: 5355.91
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.01 .. NELBO:
11793.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.61 .. NELBO: 5352.63
*****
*****

```

```

EarlyStopping counter: 5 out of 5
Early stopping
Current call: 20
model: ETM(
  (t_drop): Dropout(p=0.18030799204665593, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=89, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=89, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=89, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1387.84 .. Rec_loss: 12264.69 .. NELBO:
13652.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.71 .. Rec_loss: 5446.12 .. NELBO:
5470.83
*****
*****
Validation loss decreased (inf --> 10941.655273). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 35.39 .. Rec_loss: 12255.94 .. NELBO:
12291.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.48 .. Rec_loss: 5438.01 .. NELBO:
5448.49
*****
*****
Validation loss decreased (10941.655273 --> 10896.983398). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 22.41 .. Rec_loss: 12229.61 .. NELBO:
12252.02
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.27 .. Rec_loss: 5422.12 .. NELBO: 5430.39
*****
*****
Validation loss decreased (10896.983398 --> 10860.767578). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 16.28 .. Rec_loss: 12179.12 .. NELBO:
12195.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.1 .. Rec_loss: 5396.82 .. NELBO: 5401.92
*****
*****
Validation loss decreased (10860.767578 --> 10803.835938). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 10.64 .. Rec_loss: 12101.88 .. NELBO:
12112.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.64 .. Rec_loss: 5363.79 .. NELBO: 5367.43
*****
*****
Validation loss decreased (10803.835938 --> 10734.858398). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 7.91 .. Rec_loss: 12002.7 .. NELBO:
12010.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.66 .. Rec_loss: 5329.64 .. NELBO: 5332.3
*****
*****
Validation loss decreased (10734.858398 --> 10664.586914). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.94 .. Rec_loss: 11898.81 .. NELBO:
11904.75
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.93 .. Rec_loss: 5305.45 .. NELBO: 5307.38
*****
*****
Validation loss decreased (10664.586914 --> 10614.757812). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.29 .. Rec_loss: 11817.63 .. NELBO:
11821.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.38 .. Rec_loss: 5302.11 .. NELBO: 5303.49
*****
*****
Validation loss decreased (10614.757812 --> 10606.989258). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.98 .. Rec_loss: 11779.47 .. NELBO:
11782.45
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.9 .. Rec_loss: 5319.7 .. NELBO: 5320.6
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.9 .. Rec_loss: 11781.92 .. NELBO:
11783.82
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5342.27 .. NELBO: 5342.77
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.94 .. Rec_loss: 11794.79 .. NELBO:
11795.73
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5353.58 .. NELBO: 5353.82
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 11793.6 .. NELBO:
11794.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5352.0 .. NELBO: 5352.12
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 11779.62 .. NELBO:
11779.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5344.83 .. NELBO: 5344.93
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.18030799204665593, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=89, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=89, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=89, bias=True)
)
*****
*****

```

```

Epoch---->1 .. LR: 0.005 .. KL_theta: 864.73 .. Rec_loss: 12263.72 .. NELBO:
13128.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 17.75 .. Rec_loss: 5445.2 .. NELBO: 5462.95
*****
*****
Validation loss decreased (inf --> 10925.907227). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 21.48 .. Rec_loss: 12252.89 .. NELBO:
12274.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.02 .. Rec_loss: 5436.03 .. NELBO: 5438.05
*****
*****
Validation loss decreased (10925.907227 --> 10876.101562). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 4.05 .. Rec_loss: 12222.39 .. NELBO:
12226.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 5417.78 .. NELBO: 5418.9
*****
*****
Validation loss decreased (10876.101562 --> 10837.793945). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 2.37 .. Rec_loss: 12164.82 .. NELBO:
12167.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 5389.68 .. NELBO: 5390.3
*****
*****
Validation loss decreased (10837.793945 --> 10780.591797). Saving model ...
*****
*****

```

```

Epoch---->5 .. LR: 0.005 .. KL_theta: 1.32 .. Rec_loss: 12079.58 .. NELBO:
12080.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5354.96 .. NELBO: 5355.29
*****
*****
Validation loss decreased (10780.591797 --> 10710.569336). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 11976.31 .. NELBO:
11976.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5321.71 .. NELBO: 5321.86
*****
*****
Validation loss decreased (10710.569336 --> 10643.712891). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 11874.42 .. NELBO:
11874.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5301.96 .. NELBO: 5302.02
*****
*****
Validation loss decreased (10643.712891 --> 10604.042969). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11801.85 .. NELBO:
11801.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5305.12 .. NELBO: 5305.15
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****

```



```

Epoch----->9 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11776.62 .. NELBO:
11776.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5326.71 .. NELBO: 5326.74
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11786.33 .. NELBO:
11786.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5348.1 .. NELBO: 5348.13
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11797.2 .. NELBO:
11797.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5356.01 .. NELBO: 5356.04
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11791.91 .. NELBO:
11791.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.26 .. NELBO: 5352.28
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(

```

```

(t_drop): Dropout(p=0.18030799204665593, inplace=False)
(theta_act): Softplus(beta=1, threshold=20)
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=89, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=89, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=89, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 803.12 .. Rec_loss: 12264.84 .. NELBO:
13067.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 17.82 .. Rec_loss: 5446.03 .. NELBO:
5463.85
*****
*****
Validation loss decreased (inf --> 10927.701172). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 21.4 .. Rec_loss: 12255.33 .. NELBO:
12276.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.32 .. Rec_loss: 5437.75 .. NELBO: 5440.07
*****
*****
Validation loss decreased (10927.701172 --> 10880.149414). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 5.23 .. Rec_loss: 12228.34 .. NELBO:
12233.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.77 .. Rec_loss: 5421.39 .. NELBO: 5423.16
*****

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```

*****
Validation loss decreased (10880.149414 --> 10846.331055). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.73 .. Rec_loss: 12176.38 .. NELBO:
12180.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.01 .. Rec_loss: 5395.3 .. NELBO: 5396.31
*****
*****
Validation loss decreased (10846.331055 --> 10792.620117). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.09 .. Rec_loss: 12096.69 .. NELBO:
12098.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5361.65 .. NELBO: 5362.14
*****
*****
Validation loss decreased (10792.620117 --> 10724.291992). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.93 .. Rec_loss: 11995.81 .. NELBO:
11996.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5327.49 .. NELBO: 5327.71
*****
*****
Validation loss decreased (10724.291992 --> 10655.414062). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11892.46 .. NELBO:
11892.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5304.21 .. NELBO: 5304.31
*****

```

```

*****
Validation loss decreased (10655.414062 --> 10608.624023). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 11812.19 .. NELBO:
11812.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5302.64 .. NELBO: 5302.71
*****
*****
Validation loss decreased (10608.624023 --> 10605.411133). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11777.64 .. NELBO:
11777.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5321.77 .. NELBO: 5321.8
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11782.65 .. NELBO:
11782.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.8 .. NELBO: 5344.82
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11795.97 .. NELBO:
11796.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.78 .. NELBO: 5355.8
*****

```

```

*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.18 .. NELBO:
11794.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.81 .. NELBO: 5353.83
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.55 .. NELBO:
11779.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.39 .. NELBO: 5346.41
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 21
model: ETM(
  (t_drop): Dropout(p=0.09780798127510165, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 965.11 .. Rec_loss: 12264.44 .. NELBO:
13229.55
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.13 .. Rec_loss: 5445.63 .. NELBO:
5468.76
*****
*****
Validation loss decreased (inf --> 10937.512695). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 28.12 .. Rec_loss: 12254.35 .. NELBO:
12282.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.18 .. Rec_loss: 5437.32 .. NELBO: 5441.5
*****
*****
Validation loss decreased (10937.512695 --> 10882.998047). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 7.97 .. Rec_loss: 12226.65 .. NELBO:
12234.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.5 .. Rec_loss: 5420.61 .. NELBO: 5423.11
*****
*****
Validation loss decreased (10882.998047 --> 10846.211914). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 4.39 .. Rec_loss: 12173.48 .. NELBO:
12177.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 5394.17 .. NELBO: 5395.19
*****
*****
Validation loss decreased (10846.211914 --> 10790.398438). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.75 .. Rec_loss: 12093.11 .. NELBO:
12094.86
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5360.48 .. NELBO: 5360.85
*****
*****
Validation loss decreased (10790.398438 --> 10721.711914). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 11991.95 .. NELBO:
11992.62
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5326.64 .. NELBO: 5326.79
*****
*****
Validation loss decreased (10721.711914 --> 10653.583984). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 11889.02 .. NELBO:
11889.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5304.08 .. NELBO: 5304.14
*****
*****
Validation loss decreased (10653.583984 --> 10608.282227). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11810.62 .. NELBO:
11810.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5303.27 .. NELBO: 5303.31
*****
*****
Validation loss decreased (10608.282227 --> 10606.623047). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11777.44 .. NELBO:
11777.51
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5322.66 .. NELBO: 5322.69
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11783.34 .. NELBO:
11783.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5345.15 .. NELBO: 5345.18
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11795.93 .. NELBO:
11795.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.42 .. NELBO: 5355.44
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.7 .. NELBO:
11793.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.14 .. NELBO: 5353.16
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11779.08 .. NELBO:
11779.13
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.74 .. NELBO: 5345.76
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.09780798127510165, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1185.76 .. Rec_loss: 12264.72 .. NELBO:
13450.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.95 .. Rec_loss: 5445.79 .. NELBO:
5469.74
*****
*****
Validation loss decreased (inf --> 10939.489258). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 29.71 .. Rec_loss: 12254.56 .. NELBO:
12284.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.36 .. Rec_loss: 5437.5 .. NELBO: 5443.86
*****
*****
Validation loss decreased (10939.489258 --> 10887.713867). Saving model ...
*****

```

```

*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 13.16 .. Rec_loss: 12227.0 .. NELBO:
12240.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.33 .. Rec_loss: 5420.48 .. NELBO: 5425.81
*****
*****
Validation loss decreased (10887.713867 --> 10851.633789). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 10.63 .. Rec_loss: 12172.56 .. NELBO:
12183.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.76 .. Rec_loss: 5393.45 .. NELBO: 5397.21
*****
*****
Validation loss decreased (10851.633789 --> 10794.419922). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 7.49 .. Rec_loss: 12090.01 .. NELBO:
12097.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.69 .. Rec_loss: 5359.12 .. NELBO: 5361.81
*****
*****
Validation loss decreased (10794.419922 --> 10723.608398). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 5.57 .. Rec_loss: 11987.3 .. NELBO:
11992.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.98 .. Rec_loss: 5325.04 .. NELBO: 5327.02
*****
*****
Validation loss decreased (10723.608398 --> 10654.046875). Saving model ...
*****

```

```

*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.1 .. Rec_loss: 11883.31 .. NELBO:
11887.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.42 .. Rec_loss: 5303.18 .. NELBO: 5304.6
*****
*****
Validation loss decreased (10654.046875 --> 10609.216797). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 2.94 .. Rec_loss: 11806.24 .. NELBO:
11809.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.03 .. Rec_loss: 5303.93 .. NELBO: 5304.96
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.14 .. Rec_loss: 11776.35 .. NELBO:
11778.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 5324.49 .. NELBO: 5325.24
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.5 .. Rec_loss: 11784.54 .. NELBO:
11786.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5346.61 .. NELBO: 5347.13
*****
*****
EarlyStopping counter: 3 out of 5
*****

```

```

*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.07 .. Rec_loss: 11796.03 .. NELBO:
11797.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5355.65 .. NELBO: 5356.0
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 11792.37 .. NELBO:
11793.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5352.4 .. NELBO: 5352.63
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.09780798127510165, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1175.23 .. Rec_loss: 12264.47 .. NELBO:
13439.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.9 .. Rec_loss: 5446.01 .. NELBO: 5466.91
*****

```

```

*****
Validation loss decreased (inf --> 10933.830078). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 24.0 .. Rec_loss: 12254.96 .. NELBO:
12278.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.07 .. Rec_loss: 5437.76 .. NELBO: 5440.83
*****
*****
Validation loss decreased (10933.830078 --> 10881.666992). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 6.23 .. Rec_loss: 12227.84 .. NELBO:
12234.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.05 .. Rec_loss: 5420.96 .. NELBO: 5423.01
*****
*****
Validation loss decreased (10881.666992 --> 10846.016602). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.84 .. Rec_loss: 12174.33 .. NELBO:
12178.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 5394.19 .. NELBO: 5395.31
*****
*****
Validation loss decreased (10846.016602 --> 10790.625000). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.25 .. Rec_loss: 12092.54 .. NELBO:
12094.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.8 .. Rec_loss: 5359.95 .. NELBO: 5360.75
*****

```

```

*****
Validation loss decreased (10790.625000 --> 10721.508789). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 1.69 .. Rec_loss: 11990.01 .. NELBO:
11991.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 5325.69 .. NELBO: 5326.31
*****
*****
Validation loss decreased (10721.508789 --> 10652.607422). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 1.36 .. Rec_loss: 11884.6 .. NELBO:
11885.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 5303.47 .. NELBO: 5304.11
*****
*****
Validation loss decreased (10652.607422 --> 10608.222656). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 1.41 .. Rec_loss: 11806.78 .. NELBO:
11808.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5303.96 .. NELBO: 5304.43
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.9 .. Rec_loss: 11776.12 .. NELBO:
11777.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5324.35 .. NELBO: 5324.59
*****

```

```

*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11784.08 .. NELBO:
11784.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5346.69 .. NELBO: 5346.86
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 11796.69 .. NELBO:
11797.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5356.2 .. NELBO: 5356.31
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 11793.2 .. NELBO:
11793.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5353.26 .. NELBO: 5353.32
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 22
model: ETM(
  (t_drop): Dropout(p=0.13490200785420678, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=87, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)

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```

        (2): Linear(in_features=800, out_features=800, bias=True)
        (3): Softplus(beta=1, threshold=20)
    )
    (mu_q_theta): Linear(in_features=800, out_features=87, bias=True)
    (logsigma_q_theta): Linear(in_features=800, out_features=87, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 955.73 .. Rec_loss: 12264.06 .. NELBO:
13219.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 22.0 .. Rec_loss: 5445.64 .. NELBO: 5467.64
*****
*****
Validation loss decreased (inf --> 10935.290039). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 26.17 .. Rec_loss: 12253.83 .. NELBO:
12280.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.21 .. Rec_loss: 5436.69 .. NELBO: 5439.9
*****
*****
Validation loss decreased (10935.290039 --> 10879.794922). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 6.41 .. Rec_loss: 12224.41 .. NELBO:
12230.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.05 .. Rec_loss: 5419.29 .. NELBO: 5421.34
*****
*****
Validation loss decreased (10879.794922 --> 10842.694336). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.96 .. Rec_loss: 12169.26 .. NELBO:
12173.22
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.06 .. Rec_loss: 5392.15 .. NELBO: 5393.21
*****
*****
Validation loss decreased (10842.694336 --> 10786.412109). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.08 .. Rec_loss: 12086.52 .. NELBO:
12088.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 5358.02 .. NELBO: 5358.58
*****
*****
Validation loss decreased (10786.412109 --> 10717.166016). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.01 .. Rec_loss: 11984.57 .. NELBO:
11985.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5324.45 .. NELBO: 5324.74
*****
*****
Validation loss decreased (10717.166016 --> 10649.491211). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 11882.12 .. NELBO:
11882.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5303.17 .. NELBO: 5303.37
*****
*****
Validation loss decreased (10649.491211 --> 10606.740234). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 11806.22 .. NELBO:
11806.62
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5304.17 .. NELBO: 5304.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11777.17 .. NELBO:
11777.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5324.53 .. NELBO: 5324.57
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11784.61 .. NELBO:
11784.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.53 .. NELBO: 5346.56
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.81 .. NELBO:
11796.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.65 .. NELBO: 5355.67
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.65 .. NELBO:
11792.7
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.61 .. NELBO: 5352.63
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.13490200785420678, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=87, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=87, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=87, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1100.94 .. Rec_loss: 12264.28 .. NELBO:
13365.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.76 .. Rec_loss: 5445.3 .. NELBO: 5466.06
*****
*****
Validation loss decreased (inf --> 10932.126953). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 25.93 .. Rec_loss: 12253.51 .. NELBO:
12279.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.84 .. Rec_loss: 5436.46 .. NELBO: 5441.3
*****
*****
Validation loss decreased (10932.126953 --> 10882.591797). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 10.02 .. Rec_loss: 12223.97 .. NELBO:

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```
12233.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.06 .. Rec_loss: 5418.81 .. NELBO: 5421.87
*****
*****
Validation loss decreased (10882.591797 --> 10843.724609). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 5.9 .. Rec_loss: 12168.44 .. NELBO:
12174.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.59 .. Rec_loss: 5391.45 .. NELBO: 5393.04
*****
*****
Validation loss decreased (10843.724609 --> 10786.069336). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.09 .. Rec_loss: 12086.39 .. NELBO:
12089.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.82 .. Rec_loss: 5357.32 .. NELBO: 5358.14
*****
*****
Validation loss decreased (10786.069336 --> 10716.291016). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.67 .. Rec_loss: 11984.29 .. NELBO:
11985.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5323.92 .. NELBO: 5324.4
*****
*****
Validation loss decreased (10716.291016 --> 10648.808594). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 11882.63 .. NELBO:
```

```

11883.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5302.81 .. NELBO: 5303.09
*****
*****
Validation loss decreased (10648.808594 --> 10606.195312). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 11807.46 .. NELBO:
11807.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5303.66 .. NELBO: 5303.78
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 11777.83 .. NELBO:
11778.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5323.52 .. NELBO: 5323.57
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11784.73 .. NELBO:
11784.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5345.17 .. NELBO: 5345.2
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.17 .. NELBO:

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11796.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.51 .. NELBO: 5354.53
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.31 .. NELBO:
11792.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.94 .. NELBO: 5351.96
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.13490200785420678, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=87, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=87, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=87, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1039.62 .. Rec_loss: 12264.11 .. NELBO:
13303.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 21.19 .. Rec_loss: 5445.58 .. NELBO:
5466.77
*****
*****

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Validation loss decreased (inf --> 10933.553711). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 26.15 .. Rec_loss: 12253.9 .. NELBO:
12280.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.53 .. Rec_loss: 5436.69 .. NELBO: 5441.22
*****
*****
Validation loss decreased (10933.553711 --> 10882.450195). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 9.25 .. Rec_loss: 12225.08 .. NELBO:
12234.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.23 .. Rec_loss: 5418.96 .. NELBO: 5422.19
*****
*****
Validation loss decreased (10882.450195 --> 10844.378906). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 6.31 .. Rec_loss: 12168.68 .. NELBO:
12174.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.88 .. Rec_loss: 5391.24 .. NELBO: 5393.12
*****
*****
Validation loss decreased (10844.378906 --> 10786.239258). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.92 .. Rec_loss: 12084.72 .. NELBO:
12088.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.22 .. Rec_loss: 5356.55 .. NELBO: 5357.77
*****
*****

```

```

Validation loss decreased (10786.239258 --> 10715.538086). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.59 .. Rec_loss: 11981.1 .. NELBO:
11983.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.96 .. Rec_loss: 5322.81 .. NELBO: 5323.77
*****
*****
Validation loss decreased (10715.538086 --> 10647.548828). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 2.09 .. Rec_loss: 11878.09 .. NELBO:
11880.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.77 .. Rec_loss: 5302.21 .. NELBO: 5302.98
*****
*****
Validation loss decreased (10647.548828 --> 10605.948242). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.63 .. Rec_loss: 11803.95 .. NELBO:
11805.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 5304.52 .. NELBO: 5305.07
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.18 .. Rec_loss: 11777.0 .. NELBO:
11778.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5325.66 .. NELBO: 5326.06
*****
*****

```



```

EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.87 .. Rec_loss: 11785.8 .. NELBO:
11786.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5347.31 .. NELBO: 5347.6
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 11797.0 .. NELBO:
11797.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5355.69 .. NELBO: 5355.88
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11791.74 .. NELBO:
11792.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5352.18 .. NELBO: 5352.31
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 23
model: ETM(
  (t_drop): Dropout(p=0.2722125703068634, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=91, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)

```

```

        (3): Softplus(beta=1, threshold=20)
    )
    (mu_q_theta): Linear(in_features=800, out_features=91, bias=True)
    (logsigma_q_theta): Linear(in_features=800, out_features=91, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 776.35 .. Rec_loss: 12264.87 .. NELBO:
13041.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 17.0 .. Rec_loss: 5445.93 .. NELBO: 5462.93
*****
*****
Validation loss decreased (inf --> 10925.859375). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 22.45 .. Rec_loss: 12255.47 .. NELBO:
12277.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.98 .. Rec_loss: 5438.03 .. NELBO: 5441.01
*****
*****
Validation loss decreased (10925.859375 --> 10882.019531). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 6.95 .. Rec_loss: 12228.8 .. NELBO:
12235.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.23 .. Rec_loss: 5421.57 .. NELBO: 5423.8
*****
*****
Validation loss decreased (10882.019531 --> 10847.599609). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 4.97 .. Rec_loss: 12176.16 .. NELBO:
12181.13
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.36 .. Rec_loss: 5395.15 .. NELBO: 5396.51
*****
*****
Validation loss decreased (10847.599609 --> 10793.002930). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.27 .. Rec_loss: 12095.58 .. NELBO:
12098.85
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.77 .. Rec_loss: 5361.16 .. NELBO: 5361.93
*****
*****
Validation loss decreased (10793.002930 --> 10723.858398). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.91 .. Rec_loss: 11993.95 .. NELBO:
11995.86
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5326.88 .. NELBO: 5327.29
*****
*****
Validation loss decreased (10723.858398 --> 10654.572266). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.92 .. Rec_loss: 11889.8 .. NELBO:
11890.72
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5304.02 .. NELBO: 5304.21
*****
*****
Validation loss decreased (10654.572266 --> 10608.420898). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 11810.57 .. NELBO:
11810.99
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5303.33 .. NELBO: 5303.42
*****
*****
Validation loss decreased (10608.420898 --> 10606.845703). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 11777.56 .. NELBO:
11777.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5323.17 .. NELBO: 5323.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11784.41 .. NELBO:
11784.5
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5345.9 .. NELBO: 5345.93
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11796.95 .. NELBO:
11797.01
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.96 .. NELBO: 5355.98
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.71 .. NELBO:
11793.76
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.3 .. NELBO: 5353.32
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11778.76 .. NELBO:
11778.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.67 .. NELBO: 5345.69
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.2722125703068634, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=91, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=91, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=91, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 889.95 .. Rec_loss: 12264.87 .. NELBO:
13154.82
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 17.19 .. Rec_loss: 5445.35 .. NELBO:
5462.54
*****
*****
Validation loss decreased (inf --> 10925.095703). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 19.82 .. Rec_loss: 12253.08 .. NELBO:

```

```

12272.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 5436.15 .. NELBO: 5436.84
*****
*****
Validation loss decreased (10925.095703 --> 10873.685547). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 1.45 .. Rec_loss: 12222.4 .. NELBO:
12223.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5417.83 .. NELBO: 5418.25
*****
*****
Validation loss decreased (10873.685547 --> 10836.505859). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 12164.59 .. NELBO:
12165.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5389.42 .. NELBO: 5389.6
*****
*****
Validation loss decreased (10836.505859 --> 10779.188477). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12078.16 .. NELBO:
12078.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5354.31 .. NELBO: 5354.4
*****
*****
Validation loss decreased (10779.188477 --> 10708.807617). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 11973.46 .. NELBO:

```

```

11973.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5320.92 .. NELB0: 5320.99
*****
*****
Validation loss decreased (10708.807617 --> 10641.987305). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 11871.24 .. NELB0:
11871.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5301.64 .. NELB0: 5301.72
*****
*****
Validation loss decreased (10641.987305 --> 10603.436523). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 11799.8 .. NELB0:
11799.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5305.86 .. NELB0: 5305.95
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 11777.04 .. NELB0:
11777.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5328.05 .. NELB0: 5328.11
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11787.53 .. NELB0:

```

```

11787.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5348.91 .. NELBO: 5348.94
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11797.7 .. NELBO:
11797.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.86 .. NELBO: 5355.89
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11791.22 .. NELBO:
11791.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5351.56 .. NELBO: 5351.59
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.2722125703068634, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=91, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=91, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=91, bias=True)
)

```



```

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 838.83 .. Rec_loss: 12264.9 .. NELBO:
13103.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 19.42 .. Rec_loss: 5445.64 .. NELBO:
5465.06
*****
*****
Validation loss decreased (inf --> 10930.107422). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 24.14 .. Rec_loss: 12254.43 .. NELBO:
12278.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.35 .. Rec_loss: 5437.2 .. NELBO: 5439.55
*****
*****
Validation loss decreased (10930.107422 --> 10879.092773). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 5.36 .. Rec_loss: 12226.55 .. NELBO:
12231.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.47 .. Rec_loss: 5420.09 .. NELBO: 5421.56
*****
*****
Validation loss decreased (10879.092773 --> 10843.113281). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.02 .. Rec_loss: 12172.68 .. NELBO:
12175.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 5393.17 .. NELBO: 5393.79
*****
*****

```

```

Validation loss decreased (10843.113281 --> 10787.591797). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.4 .. Rec_loss: 12091.11 .. NELBO:
12092.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5359.04 .. NELBO: 5359.34
*****
*****
Validation loss decreased (10787.591797 --> 10718.675781). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 11989.12 .. NELBO:
11989.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5325.09 .. NELBO: 5325.23
*****
*****
Validation loss decreased (10718.675781 --> 10650.473633). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 11886.46 .. NELBO:
11886.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5303.08 .. NELBO: 5303.15
*****
*****
Validation loss decreased (10650.473633 --> 10606.306641). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 11808.95 .. NELBO:
11809.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5303.29 .. NELBO: 5303.34
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11777.33 .. NELBO:
11777.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5323.36 .. NELBO: 5323.4
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11784.3 .. NELBO:
11784.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5345.7 .. NELBO: 5345.73
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11796.19 .. NELBO:
11796.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.46 .. NELBO: 5355.49
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.69 .. NELBO:
11792.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.86 .. NELBO: 5352.88
*****
*****

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```

EarlyStopping counter: 5 out of 5
Early stopping
Current call: 24
model: ETM(
  (t_drop): Dropout(p=0.1936374344557168, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=90, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=90, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=90, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1100.01 .. Rec_loss: 12264.27 .. NELBO:
13364.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 22.77 .. Rec_loss: 5445.72 .. NELBO:
5468.49
*****
*****
Validation loss decreased (inf --> 10936.992188). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 30.72 .. Rec_loss: 12254.32 .. NELBO:
12285.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.25 .. Rec_loss: 5436.88 .. NELBO: 5443.13
*****
*****
Validation loss decreased (10936.992188 --> 10886.265625). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 13.79 .. Rec_loss: 12225.19 .. NELBO:
12238.98
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.82 .. Rec_loss: 5419.33 .. NELBO: 5424.15
*****
*****
Validation loss decreased (10886.265625 --> 10848.301758). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 9.85 .. Rec_loss: 12169.49 .. NELBO:
12179.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.51 .. Rec_loss: 5391.91 .. NELBO: 5394.42
*****
*****
Validation loss decreased (10848.301758 --> 10788.838867). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 5.05 .. Rec_loss: 12086.27 .. NELBO:
12091.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 5357.43 .. NELBO: 5358.52
*****
*****
Validation loss decreased (10788.838867 --> 10717.053711). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.1 .. Rec_loss: 11983.12 .. NELBO:
11985.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5323.63 .. NELBO: 5324.04
*****
*****
Validation loss decreased (10717.053711 --> 10648.072266). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 11879.98 .. NELBO:
11880.73
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5302.49 .. NELBO: 5302.66
*****
*****
Validation loss decreased (10648.072266 --> 10605.325195). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 11804.58 .. NELBO:
11804.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5304.19 .. NELBO: 5304.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11776.6 .. NELBO:
11776.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5325.34 .. NELBO: 5325.37
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11785.17 .. NELBO:
11785.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.47 .. NELBO: 5347.49
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11797.26 .. NELBO:
11797.3
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5356.23 .. NELBO: 5356.25
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.12 .. NELBO:
11793.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.76 .. NELBO: 5352.78
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.1936374344557168, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=90, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=90, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=90, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1169.35 .. Rec_loss: 12264.01 .. NELBO:
13433.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.82 .. Rec_loss: 5445.42 .. NELBO:
5470.24
*****
*****
Validation loss decreased (inf --> 10940.474609). Saving model ...
*****
*****

```

```

Epoch----->2 .. LR: 0.005 .. KL_theta: 31.09 .. Rec_loss: 12253.25 .. NELBO:
12284.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.91 .. Rec_loss: 5436.1 .. NELBO: 5441.01
*****
*****
Validation loss decreased (10940.474609 --> 10882.009766). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 11.01 .. Rec_loss: 12222.92 .. NELBO:
12233.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.97 .. Rec_loss: 5417.73 .. NELBO: 5421.7
*****
*****
Validation loss decreased (10882.009766 --> 10843.408203). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 8.78 .. Rec_loss: 12165.43 .. NELBO:
12174.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.75 .. Rec_loss: 5389.35 .. NELBO: 5392.1
*****
*****
Validation loss decreased (10843.408203 --> 10784.212891). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 6.04 .. Rec_loss: 12078.92 .. NELBO:
12084.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 5354.2 .. NELBO: 5355.99
*****
*****
Validation loss decreased (10784.212891 --> 10711.980469). Saving model ...
*****
*****

```



```

Epoch----->6 .. LR: 0.005 .. KL_theta: 3.9 .. Rec_loss: 11973.82 .. NELBO:
11977.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 5320.75 .. NELBO: 5321.86
*****
*****
Validation loss decreased (10711.980469 --> 10643.715820). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 2.42 .. Rec_loss: 11871.21 .. NELBO:
11873.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 5301.47 .. NELBO: 5302.18
*****
*****
Validation loss decreased (10643.715820 --> 10604.361328). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 1.62 .. Rec_loss: 11799.73 .. NELBO:
11801.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5305.73 .. NELBO: 5306.18
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.93 .. Rec_loss: 11776.17 .. NELBO:
11777.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5328.01 .. NELBO: 5328.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

```

```

Epoch---->10 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 11787.51 .. NELBO:
11788.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5348.95 .. NELBO: 5349.1
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 11797.19 .. NELBO:
11797.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5355.91 .. NELBO: 5355.99
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 11790.59 .. NELBO:
11790.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5351.63 .. NELBO: 5351.67
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.1936374344557168, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=90, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=90, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=90, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 892.54 .. Rec_loss: 12265.16 .. NELBO:
13157.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 22.22 .. Rec_loss: 5445.78 .. NELBO: 5468.0
*****
*****
Validation loss decreased (inf --> 10936.003906). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 29.75 .. Rec_loss: 12255.43 .. NELBO:
12285.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.81 .. Rec_loss: 5437.79 .. NELBO: 5443.6
*****
*****
Validation loss decreased (10936.003906 --> 10887.186523). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 12.81 .. Rec_loss: 12229.02 .. NELBO:
12241.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.15 .. Rec_loss: 5421.49 .. NELBO: 5426.64
*****
*****
Validation loss decreased (10887.186523 --> 10853.289062). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 11.08 .. Rec_loss: 12177.25 .. NELBO:
12188.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.51 .. Rec_loss: 5395.48 .. NELBO: 5398.99
*****
*****

```

```

Validation loss decreased (10853.289062 --> 10797.986328). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 7.59 .. Rec_loss: 12098.31 .. NELBO:
12105.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.1 .. Rec_loss: 5361.85 .. NELBO: 5363.95
*****
*****
Validation loss decreased (10797.986328 --> 10727.909180). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 4.2 .. Rec_loss: 11997.88 .. NELBO:
12002.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.18 .. Rec_loss: 5327.55 .. NELBO: 5328.73
*****
*****
Validation loss decreased (10727.909180 --> 10657.458984). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 2.47 .. Rec_loss: 11893.75 .. NELBO:
11896.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 5304.11 .. NELBO: 5304.79
*****
*****
Validation loss decreased (10657.458984 --> 10609.571289). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 11813.44 .. NELBO:
11814.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5302.39 .. NELBO: 5302.79
*****
*****

```

```

Validation loss decreased (10609.571289 --> 10605.580078). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.83 .. Rec_loss: 11778.33 .. NELBO:
11779.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5321.42 .. NELBO: 5321.63
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 11783.08 .. NELBO:
11783.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5344.18 .. NELBO: 5344.29
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 11796.03 .. NELBO:
11796.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5354.88 .. NELBO: 5354.94
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11793.67 .. NELBO:
11793.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.87 .. NELBO: 5352.9
*****
*****

```

```

EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11778.73 .. NELBO:
11778.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.64 .. NELBO: 5345.66
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 25
model: ETM(
  (t_drop): Dropout(p=0.21411111413039327, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=55, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=55, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=55, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 673.93 .. Rec_loss: 12264.31 .. NELBO:
12938.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.85 .. Rec_loss: 5444.83 .. NELBO:
5469.68
*****
*****
Validation loss decreased (inf --> 10939.365234). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 33.8 .. Rec_loss: 12252.96 .. NELBO:
12286.76
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.91 .. Rec_loss: 5436.55 .. NELBO: 5445.46
*****
*****
Validation loss decreased (10939.365234 --> 10890.926758). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 21.31 .. Rec_loss: 12225.24 .. NELBO:
12246.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.45 .. Rec_loss: 5419.63 .. NELBO: 5428.08
*****
*****
Validation loss decreased (10890.926758 --> 10856.168945). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 17.74 .. Rec_loss: 12171.37 .. NELBO:
12189.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.13 .. Rec_loss: 5392.84 .. NELBO: 5397.97
*****
*****
Validation loss decreased (10856.168945 --> 10795.946289). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 10.96 .. Rec_loss: 12089.94 .. NELBO:
12100.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.12 .. Rec_loss: 5359.11 .. NELBO: 5362.23
*****
*****
Validation loss decreased (10795.946289 --> 10724.463867). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 6.44 .. Rec_loss: 11988.57 .. NELBO:
11995.01
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.81 .. Rec_loss: 5325.63 .. NELBO: 5327.44
*****
*****
Validation loss decreased (10724.463867 --> 10654.875000). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.83 .. Rec_loss: 11887.02 .. NELBO:
11890.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.15 .. Rec_loss: 5303.48 .. NELBO: 5304.63
*****
*****
Validation loss decreased (10654.875000 --> 10609.249023). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 2.56 .. Rec_loss: 11810.33 .. NELBO:
11812.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 5302.76 .. NELBO: 5303.52
*****
*****
Validation loss decreased (10609.249023 --> 10607.037109). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 11777.82 .. NELBO:
11779.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5321.61 .. NELBO: 5322.03
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.83 .. Rec_loss: 11783.13 .. NELBO:
11783.96
*****
*****

```



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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5343.51 .. NELBO: 5343.71
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 11794.88 .. NELBO:
11795.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5353.72 .. NELBO: 5353.8
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11792.24 .. NELBO:
11792.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5351.76 .. NELBO: 5351.8
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11778.57 .. NELBO:
11778.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.68 .. NELBO: 5344.7
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.2141111413039327, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=55, bias=False)

```

```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=55, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=55, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1072.24 .. Rec_loss: 12263.91 .. NELBO:
13336.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 34.66 .. Rec_loss: 5445.3 .. NELBO: 5479.96
*****
*****
Validation loss decreased (inf --> 10959.929688). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 50.9 .. Rec_loss: 12253.14 .. NELBO:
12304.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 22.84 .. Rec_loss: 5436.66 .. NELBO: 5459.5
*****
*****
Validation loss decreased (10959.929688 --> 10918.999023). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 56.94 .. Rec_loss: 12225.45 .. NELBO:
12282.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.45 .. Rec_loss: 5419.89 .. NELBO:
5445.34
*****
*****
Validation loss decreased (10918.999023 --> 10890.688477). Saving model ...
*****
*****

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```

Epoch----->4 .. LR: 0.005 .. KL_theta: 52.43 .. Rec_loss: 12172.41 .. NELBO:
12224.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 17.46 .. Rec_loss: 5394.62 .. NELBO:
5412.08
*****
*****
Validation loss decreased (10890.688477 --> 10824.168945). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 39.11 .. Rec_loss: 12096.31 .. NELBO:
12135.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 14.9 .. Rec_loss: 5362.79 .. NELBO: 5377.69
*****
*****
Validation loss decreased (10824.168945 --> 10755.380859). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 34.26 .. Rec_loss: 11999.96 .. NELBO:
12034.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 13.69 .. Rec_loss: 5329.57 .. NELBO:
5343.26
*****
*****
Validation loss decreased (10755.380859 --> 10686.521484). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 31.0 .. Rec_loss: 11897.58 .. NELBO:
11928.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.71 .. Rec_loss: 5305.66 .. NELBO:
5318.37
*****
*****

```

```

Validation loss decreased (10686.521484 --> 10636.740234). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 27.26 .. Rec_loss: 11817.94 .. NELBO:
11845.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.45 .. Rec_loss: 5301.47 .. NELBO:
5311.92
*****
*****
Validation loss decreased (10636.740234 --> 10623.847656). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 21.6 .. Rec_loss: 11779.12 .. NELBO:
11800.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.7 .. Rec_loss: 5316.85 .. NELBO: 5324.55
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 15.87 .. Rec_loss: 11778.9 .. NELBO:
11794.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.48 .. Rec_loss: 5337.54 .. NELBO: 5343.02
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 11.39 .. Rec_loss: 11789.33 .. NELBO:
11800.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.29 .. Rec_loss: 5348.66 .. NELBO: 5352.95
*****
*****

```

```

*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 9.37 .. Rec_loss: 11787.9 .. NELBO:
11797.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.83 .. Rec_loss: 5347.95 .. NELBO: 5351.78
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 8.56 .. Rec_loss: 11775.29 .. NELBO:
11783.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.57 .. Rec_loss: 5341.66 .. NELBO: 5345.23
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.21411111413039327, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=55, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=55, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=55, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 681.53 .. Rec_loss: 12264.43 .. NELBO:
12945.96
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 19.07 .. Rec_loss: 5445.53 .. NELBO: 5464.6
*****
*****
Validation loss decreased (inf --> 10929.192383). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 25.58 .. Rec_loss: 12253.56 .. NELBO:
12279.14
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.34 .. Rec_loss: 5436.69 .. NELBO: 5443.03
*****
*****
Validation loss decreased (10929.192383 --> 10886.061523). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 14.48 .. Rec_loss: 12225.13 .. NELBO:
12239.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.67 .. Rec_loss: 5419.53 .. NELBO: 5425.2
*****
*****
Validation loss decreased (10886.061523 --> 10850.390625). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 11.82 .. Rec_loss: 12170.42 .. NELBO:
12182.24
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.54 .. Rec_loss: 5392.51 .. NELBO: 5396.05
*****
*****
Validation loss decreased (10850.390625 --> 10792.110352). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 7.32 .. Rec_loss: 12088.37 .. NELBO:
12095.69
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.39 .. Rec_loss: 5358.35 .. NELBO: 5360.74
*****
*****
Validation loss decreased (10792.110352 --> 10721.482422). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 4.94 .. Rec_loss: 11986.14 .. NELBO:
11991.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.33 .. Rec_loss: 5324.95 .. NELBO: 5326.28
*****
*****
Validation loss decreased (10721.482422 --> 10652.557617). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 2.66 .. Rec_loss: 11884.43 .. NELBO:
11887.09
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 5303.32 .. NELBO: 5304.02
*****
*****
Validation loss decreased (10652.557617 --> 10608.049805). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.38 .. Rec_loss: 11808.33 .. NELBO:
11809.71
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5303.44 .. NELBO: 5303.81
*****
*****
Validation loss decreased (10608.049805 --> 10607.628906). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 11776.62 .. NELBO:
11777.35
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5323.11 .. NELBO: 5323.27
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 11783.71 .. NELBO:
11784.03
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5345.08 .. NELBO: 5345.15
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11795.24 .. NELBO:
11795.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5354.62 .. NELBO: 5354.65
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11791.86 .. NELBO:
11791.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.93 .. NELBO: 5351.95
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11777.45 .. NELBO:
11777.48
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5344.52 .. NELBO: 5344.53
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 26
model: ETM(
  (t_drop): Dropout(p=0.17266957099006916, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=87, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=87, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=87, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 12263.62 .. NELBO:
12263.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.93 .. Rec_loss: 5442.78 .. NELBO: 5444.71
*****
*****
Validation loss decreased (inf --> 10889.417969). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 2.14 .. Rec_loss: 12242.03 .. NELBO:
12244.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5426.4 .. NELBO: 5426.43
*****
*****
Validation loss decreased (10889.417969 --> 10852.842773). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12189.69 .. NELBO:

```

```
12190.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5398.24 .. NELBO: 5398.46
*****
*****
Validation loss decreased (10852.842773 --> 10796.929688). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12105.22 .. NELBO:
12105.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 5361.88 .. NELBO: 5362.72
*****
*****
Validation loss decreased (10796.929688 --> 10725.435547). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.42 .. Rec_loss: 11997.32 .. NELBO:
12000.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5326.54 .. NELBO: 5326.99
*****
*****
Validation loss decreased (10725.435547 --> 10653.989258). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 11893.78 .. NELBO:
11894.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5304.0 .. NELBO: 5304.15
*****
*****
Validation loss decreased (10653.989258 --> 10608.300781). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 11815.3 .. NELBO:
```

```
11815.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5303.8 .. NELB0: 5304.13
*****
*****
Validation loss decreased (10608.300781 --> 10608.261719). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 11782.7 .. NELB0:
11783.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5322.53 .. NELB0: 5322.81
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 11786.57 .. NELB0:
11787.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5342.87 .. NELB0: 5343.23
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 11794.68 .. NELB0:
11795.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5351.19 .. NELB0: 5351.66
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.87 .. Rec_loss: 11788.83 .. NELB0:
```

```

11789.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 5347.69 .. NELBO: 5348.71
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.95 .. Rec_loss: 11774.01 .. NELBO:
11775.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.37 .. Rec_loss: 5340.43 .. NELBO: 5341.8
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.17266957099006916, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=87, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=87, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=87, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 12263.81 .. NELBO:
12264.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.55 .. Rec_loss: 5442.99 .. NELBO: 5444.54
*****
*****
Validation loss decreased (inf --> 10889.091797). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.91 .. Rec_loss: 12243.42 .. NELBO:
12245.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5427.39 .. NELBO: 5427.42
*****
*****
Validation loss decreased (10889.091797 --> 10854.825195). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12193.34 .. NELBO:
12193.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5400.13 .. NELBO: 5400.43
*****
*****
Validation loss decreased (10854.825195 --> 10800.862305). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12111.94 .. NELBO:
12112.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 5364.61 .. NELBO: 5365.37
*****
*****
Validation loss decreased (10800.862305 --> 10730.734375). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.82 .. Rec_loss: 12006.02 .. NELBO:
12008.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.24 .. Rec_loss: 5328.68 .. NELBO: 5329.92
*****
*****
Validation loss decreased (10730.734375 --> 10659.857422). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.47 .. Rec_loss: 11901.82 .. NELBO:
11903.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5305.01 .. NELBO: 5305.13
*****
*****
Validation loss decreased (10659.857422 --> 10610.250000). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 11820.98 .. NELBO:
11821.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5302.44 .. NELBO: 5302.87
*****
*****
Validation loss decreased (10610.250000 --> 10605.744141). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 11783.75 .. NELBO:
11784.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5319.68 .. NELBO: 5319.85
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11784.83 .. NELBO:
11785.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5340.51 .. NELBO: 5341.03
*****
*****
EarlyStopping counter: 2 out of 5

```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.78 .. Rec_loss: 11793.89 .. NELBO:
11794.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5350.3 .. NELBO: 5350.74
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.86 .. Rec_loss: 11789.7 .. NELBO:
11790.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.31 .. Rec_loss: 5347.4 .. NELBO: 5348.71
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.5 .. Rec_loss: 11774.66 .. NELBO:
11777.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.4 .. Rec_loss: 5340.67 .. NELBO: 5342.07
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.17266957099006916, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=87, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
)

```

```

(mu_q_theta): Linear(in_features=800, out_features=87, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=87, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 12263.78 .. NELBO:
12264.12
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.96 .. Rec_loss: 5443.18 .. NELBO: 5444.14
*****
*****
Validation loss decreased (inf --> 10888.269531). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.78 .. Rec_loss: 12243.86 .. NELBO:
12245.64
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5427.63 .. NELBO: 5427.65
*****
*****
Validation loss decreased (10888.269531 --> 10855.312500). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 12194.19 .. NELBO:
12194.45
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5400.69 .. NELBO: 5400.99
*****
*****
Validation loss decreased (10855.312500 --> 10801.962891). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 12113.31 .. NELBO:
12113.78
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5365.12 .. NELBO: 5365.38

```



```

*****
*****
Validation loss decreased (10801.962891 --> 10730.764648). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 12008.94 .. NELBO:
12009.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.49 .. Rec_loss: 5328.84 .. NELBO: 5330.33
*****
*****
Validation loss decreased (10730.764648 --> 10660.668945). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.2 .. Rec_loss: 11901.33 .. NELBO:
11903.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 5304.98 .. NELBO: 5305.3
*****
*****
Validation loss decreased (10660.668945 --> 10610.606445). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 11821.13 .. NELBO:
11821.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5302.31 .. NELBO: 5302.4
*****
*****
Validation loss decreased (10610.606445 --> 10604.791016). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 11783.86 .. NELBO:
11784.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 5319.03 .. NELBO: 5319.63

```

```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.2 .. Rec_loss: 11784.42 .. NELBO:
11785.62
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5340.17 .. NELBO: 5340.52
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.48 .. Rec_loss: 11791.83 .. NELBO:
11794.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.55 .. Rec_loss: 5347.46 .. NELBO: 5350.01
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.09 .. Rec_loss: 11784.04 .. NELBO:
11788.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.05 .. Rec_loss: 5344.72 .. NELBO: 5347.77
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 7.63 .. Rec_loss: 11769.59 .. NELBO:
11777.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.26 .. Rec_loss: 5337.19 .. NELBO: 5341.45

```

```

*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 27
model: ETM(
  (t_drop): Dropout(p=0.1729668456034926, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=100, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=100, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=100, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 12263.88 .. NELBO:
12264.2
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.06 .. Rec_loss: 5443.16 .. NELBO: 5445.22
*****
*****
Validation loss decreased (inf --> 10890.454102). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 2.57 .. Rec_loss: 12244.08 .. NELBO:
12246.65
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5427.8 .. NELBO: 5427.83
*****
*****
Validation loss decreased (10890.454102 --> 10855.649414). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 12195.04 .. NELBO:
12195.51
*****

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```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5400.95 .. NELBO: 5401.19
*****
*****
Validation loss decreased (10855.649414 --> 10802.371094). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 12114.81 .. NELBO:
12115.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5365.72 .. NELBO: 5366.21
*****
*****
Validation loss decreased (10802.371094 --> 10732.421875). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.35 .. Rec_loss: 12010.7 .. NELBO:
12012.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.68 .. Rec_loss: 5329.36 .. NELBO: 5331.04
*****
*****
Validation loss decreased (10732.421875 --> 10662.096680). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.2 .. Rec_loss: 11904.0 .. NELBO:
11906.2
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5305.17 .. NELBO: 5305.53
*****
*****
Validation loss decreased (10662.096680 --> 10611.072266). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 11822.49 .. NELBO:
11823.1
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5302.19 .. NELBO: 5302.26
*****
*****
Validation loss decreased (10611.072266 --> 10604.533203). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11784.72 .. NELBO:
11784.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5319.52 .. NELBO: 5319.63
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 11785.33 .. NELBO:
11785.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5340.95 .. NELBO: 5341.12
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 11794.91 .. NELBO:
11795.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5350.99 .. NELBO: 5351.37
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 11790.63 .. NELBO:
11791.47
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.17 .. Rec_loss: 5348.54 .. NELBO: 5349.71
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.13 .. Rec_loss: 11775.82 .. NELBO:
11777.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 5342.15 .. NELBO: 5343.12
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.1729668456034926, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=100, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=100, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=100, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 12263.99 .. NELBO:
12264.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.84 .. Rec_loss: 5443.27 .. NELBO: 5446.11
*****
*****
Validation loss decreased (inf --> 10892.231445). Saving model ...
*****
*****

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```

Epoch----->2 .. LR: 0.005 .. KL_theta: 3.14 .. Rec_loss: 12244.49 .. NELBO:
12247.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5428.03 .. NELBO: 5428.09
*****
*****
Validation loss decreased (10892.231445 --> 10856.182617). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 12195.3 .. NELBO:
12195.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5401.17 .. NELBO: 5401.35
*****
*****
Validation loss decreased (10856.182617 --> 10802.696289). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12115.0 .. NELBO:
12115.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5365.73 .. NELBO: 5366.09
*****
*****
Validation loss decreased (10802.696289 --> 10732.186523). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 3.38 .. Rec_loss: 12010.28 .. NELBO:
12013.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 5329.66 .. NELBO: 5330.29
*****
*****
Validation loss decreased (10732.186523 --> 10660.594727). Saving model ...
*****
*****

```

```

Epoch---->6 .. LR: 0.005 .. KL_theta: 1.1 .. Rec_loss: 11904.74 .. NELBO:
11905.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5305.34 .. NELBO: 5305.61
*****
*****
Validation loss decreased (10660.594727 --> 10611.228516). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11822.7 .. NELBO:
11823.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5302.33 .. NELBO: 5302.71
*****
*****
Validation loss decreased (10611.228516 --> 10605.422852). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 11784.85 .. NELBO:
11785.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5319.61 .. NELBO: 5319.72
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 11785.6 .. NELBO:
11785.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5340.72 .. NELBO: 5340.82
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

```



```

Epoch---->10 .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 11794.53 .. NELBO:
11794.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 5350.46 .. NELBO: 5351.02
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.19 .. Rec_loss: 11790.15 .. NELBO:
11791.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 5348.29 .. NELBO: 5349.4
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.87 .. Rec_loss: 11775.96 .. NELBO:
11777.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.89 .. Rec_loss: 5342.02 .. NELBO: 5342.91
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.1729668456034926, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=100, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=100, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=100, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 12263.75 .. NELBO:
12264.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.49 .. Rec_loss: 5443.07 .. NELBO: 5445.56
*****
*****
Validation loss decreased (inf --> 10891.109375). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 2.83 .. Rec_loss: 12243.14 .. NELBO:
12245.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5427.35 .. NELBO: 5427.38
*****
*****
Validation loss decreased (10891.109375 --> 10854.757812). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12192.5 .. NELBO:
12193.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5400.13 .. NELBO: 5400.39
*****
*****
Validation loss decreased (10854.757812 --> 10800.766602). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12111.13 .. NELBO:
12111.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 5364.54 .. NELBO: 5365.22
*****
*****

```

```

Validation loss decreased (10800.766602 --> 10730.438477). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 4.11 .. Rec_loss: 12004.51 .. NELBO:
12008.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.16 .. Rec_loss: 5328.92 .. NELBO: 5330.08
*****
*****
Validation loss decreased (10730.438477 --> 10660.154297). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.74 .. Rec_loss: 11901.39 .. NELBO:
11903.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5305.38 .. NELBO: 5305.65
*****
*****
Validation loss decreased (10660.154297 --> 10611.301758). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 11820.98 .. NELBO:
11821.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5302.75 .. NELBO: 5303.21
*****
*****
Validation loss decreased (10611.301758 --> 10606.402344). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 11783.78 .. NELBO:
11784.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5319.84 .. NELBO: 5320.0
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11784.95 .. NELBO:
11785.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5340.79 .. NELBO: 5341.16
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 11794.13 .. NELBO:
11794.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 5350.61 .. NELBO: 5350.93
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 11790.04 .. NELBO:
11790.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.16 .. Rec_loss: 5347.86 .. NELBO: 5349.02
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.27 .. Rec_loss: 11775.02 .. NELBO:
11777.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.42 .. Rec_loss: 5340.86 .. NELBO: 5342.28
*****
*****

```

EarlyStopping counter: 5 out of 5

Early stopping

Current call: 28

model: ETM(

(t_drop): Dropout(p=0.06520113362115033, inplace=False)

(theta_act): Softplus(beta=1, threshold=20)

(rho): Linear(in_features=300, out_features=13198, bias=False)

(alphas): Linear(in_features=300, out_features=84, bias=False)

(q_theta): Sequential(

(0): Linear(in_features=13198, out_features=800, bias=True)

(1): Softplus(beta=1, threshold=20)

(2): Linear(in_features=800, out_features=800, bias=True)

(3): Softplus(beta=1, threshold=20)

)

(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)

(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)

)

Epoch---->1 .. LR: 0.005 .. KL_theta: 1021.35 .. Rec_loss: 12264.16 .. NELBO:
13285.51

VALIDATION .. LR: 0.005 .. KL_theta: 19.06 .. Rec_loss: 5445.72 .. NELBO:
5464.78

Validation loss decreased (inf --> 10929.559570). Saving model ...

Epoch---->2 .. LR: 0.005 .. KL_theta: 22.73 .. Rec_loss: 12253.76 .. NELBO:
12276.49

VALIDATION .. LR: 0.005 .. KL_theta: 3.84 .. Rec_loss: 5436.31 .. NELBO: 5440.15

Validation loss decreased (10929.559570 --> 10880.298828). Saving model ...

Epoch---->3 .. LR: 0.005 .. KL_theta: 7.74 .. Rec_loss: 12223.43 .. NELBO:
12231.17

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.37 .. Rec_loss: 5418.35 .. NELBO: 5421.72
*****
*****
Validation loss decreased (10880.298828 --> 10843.447266). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 6.62 .. Rec_loss: 12166.85 .. NELBO:
12173.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.44 .. Rec_loss: 5390.54 .. NELBO: 5392.98
*****
*****
Validation loss decreased (10843.447266 --> 10785.954102). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 4.59 .. Rec_loss: 12082.45 .. NELBO:
12087.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.55 .. Rec_loss: 5355.89 .. NELBO: 5357.44
*****
*****
Validation loss decreased (10785.954102 --> 10714.864258). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.83 .. Rec_loss: 11979.04 .. NELBO:
11981.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.86 .. Rec_loss: 5322.36 .. NELBO: 5323.22
*****
*****
Validation loss decreased (10714.864258 --> 10646.432617). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.52 .. Rec_loss: 11876.13 .. NELBO:
11877.65
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5302.05 .. NELBO: 5302.48
*****
*****
Validation loss decreased (10646.432617 --> 10604.969727). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.78 .. Rec_loss: 11801.96 .. NELBO:
11802.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5304.7 .. NELBO: 5304.91
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11776.54 .. NELBO:
11776.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5326.14 .. NELBO: 5326.24
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 11785.67 .. NELBO:
11785.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5347.68 .. NELBO: 5347.73
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11797.05 .. NELBO:
11797.13
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.69 .. NELBO: 5355.72
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11791.85 .. NELBO:
11791.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.91 .. NELBO: 5351.93
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06520113362115033, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1155.59 .. Rec_loss: 12264.72 .. NELBO:
13420.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.25 .. Rec_loss: 5445.76 .. NELBO:
5469.01
*****
*****
Validation loss decreased (inf --> 10938.019531). Saving model ...
*****
*****

```



```

Epoch----->2 .. LR: 0.005 .. KL_theta: 27.73 .. Rec_loss: 12254.41 .. NELBO:
12282.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.76 .. Rec_loss: 5436.77 .. NELBO: 5442.53
*****
*****
Validation loss decreased (10938.019531 --> 10885.050781). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 12.06 .. Rec_loss: 12225.59 .. NELBO:
12237.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.56 .. Rec_loss: 5419.41 .. NELBO: 5423.97
*****
*****
Validation loss decreased (10885.050781 --> 10847.923828). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 8.09 .. Rec_loss: 12170.9 .. NELBO:
12178.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.03 .. Rec_loss: 5392.11 .. NELBO: 5394.14
*****
*****
Validation loss decreased (10847.923828 --> 10788.275391). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 3.45 .. Rec_loss: 12088.26 .. NELBO:
12091.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 5357.75 .. NELBO: 5358.51
*****
*****
Validation loss decreased (10788.275391 --> 10717.030273). Saving model ...
*****
*****

```

```

Epoch----->6 .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 11985.61 .. NELBO:
11986.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5323.93 .. NELBO: 5324.2
*****
*****
Validation loss decreased (10717.030273 --> 10648.413086). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 11883.0 .. NELBO:
11883.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5302.44 .. NELBO: 5302.55
*****
*****
Validation loss decreased (10648.413086 --> 10605.085938). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 11807.19 .. NELBO:
11807.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5303.42 .. NELBO: 5303.48
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11777.38 .. NELBO:
11777.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5324.04 .. NELBO: 5324.07
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

```

```

Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11785.09 .. NELBO:
11785.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.36 .. NELBO: 5346.38
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.7 .. NELBO:
11796.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.7 .. NELBO: 5355.72
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.78 .. NELBO:
11792.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.77 .. NELBO: 5352.79
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06520113362115033, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1258.52 .. Rec_loss: 12264.45 .. NELBO:
13522.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.47 .. Rec_loss: 5445.59 .. NELBO:
5470.06
*****
*****
Validation loss decreased (inf --> 10940.122070). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 31.68 .. Rec_loss: 12253.97 .. NELBO:
12285.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.33 .. Rec_loss: 5436.98 .. NELBO: 5446.31
*****
*****
Validation loss decreased (10940.122070 --> 10892.613281). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 18.77 .. Rec_loss: 12226.14 .. NELBO:
12244.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.95 .. Rec_loss: 5420.19 .. NELBO: 5427.14
*****
*****
Validation loss decreased (10892.613281 --> 10854.287109). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 12.79 .. Rec_loss: 12173.01 .. NELBO:
12185.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.13 .. Rec_loss: 5393.95 .. NELBO: 5398.08
*****

```

```

*****
Validation loss decreased (10854.287109 --> 10796.172852). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 7.78 .. Rec_loss: 12092.92 .. NELBO:
12100.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.55 .. Rec_loss: 5360.48 .. NELBO: 5363.03
*****
*****
Validation loss decreased (10796.172852 --> 10726.058594). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 4.96 .. Rec_loss: 11992.44 .. NELBO:
11997.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.7 .. Rec_loss: 5326.68 .. NELBO: 5328.38
*****
*****
Validation loss decreased (10726.058594 --> 10656.757812). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.38 .. Rec_loss: 11888.99 .. NELBO:
11892.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.19 .. Rec_loss: 5304.07 .. NELBO: 5305.26
*****
*****
Validation loss decreased (10656.757812 --> 10610.531250). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 2.36 .. Rec_loss: 11810.52 .. NELBO:
11812.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 5303.28 .. NELBO: 5304.12
*****

```

```

*****
Validation loss decreased (10610.531250 --> 10608.230469). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.67 .. Rec_loss: 11777.74 .. NELBO:
11779.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 5322.64 .. NELBO: 5323.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.16 .. Rec_loss: 11784.07 .. NELBO:
11785.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5344.94 .. NELBO: 5345.34
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 11795.71 .. NELBO:
11796.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5354.88 .. NELBO: 5355.17
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 11792.65 .. NELBO:
11793.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5352.4 .. NELBO: 5352.61
*****

```

```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 11778.64 .. NELBO:
11779.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5345.01 .. NELBO: 5345.17
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 29
model: ETM(
  (t_drop): Dropout(p=0.13803105531257293, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=51, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=51, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=51, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1060.58 .. Rec_loss: 12264.24 .. NELBO:
13324.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.86 .. Rec_loss: 5444.62 .. NELBO:
5469.48
*****
*****
Validation loss decreased (inf --> 10938.967773). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 35.23 .. Rec_loss: 12251.07 .. NELBO:
12286.3
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 15.49 .. Rec_loss: 5435.45 .. NELBO:
5450.94
*****
*****
Validation loss decreased (10938.967773 --> 10901.867188). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 34.26 .. Rec_loss: 12221.43 .. NELBO:
12255.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 14.57 .. Rec_loss: 5417.16 .. NELBO:
5431.73
*****
*****
Validation loss decreased (10901.867188 --> 10863.468750). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 28.9 .. Rec_loss: 12164.04 .. NELBO:
12192.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.32 .. Rec_loss: 5389.73 .. NELBO:
5400.05
*****
*****
Validation loss decreased (10863.468750 --> 10800.095703). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 21.26 .. Rec_loss: 12081.2 .. NELBO:
12102.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.87 .. Rec_loss: 5356.19 .. NELBO: 5364.06
*****
*****
Validation loss decreased (10800.095703 --> 10728.132812). Saving model ...
*****
*****

```



```

Epoch----->6 .. LR: 0.005 .. KL_theta: 17.0 .. Rec_loss: 11980.73 .. NELBO:
11997.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.99 .. Rec_loss: 5323.34 .. NELBO: 5330.33
*****
*****
Validation loss decreased (10728.132812 --> 10660.647461). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 15.09 .. Rec_loss: 11879.31 .. NELBO:
11894.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.29 .. Rec_loss: 5302.8 .. NELBO: 5309.09
*****
*****
Validation loss decreased (10660.647461 --> 10618.189453). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 13.18 .. Rec_loss: 11805.22 .. NELBO:
11818.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.04 .. Rec_loss: 5304.1 .. NELBO: 5309.14
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 10.2 .. Rec_loss: 11776.66 .. NELBO:
11786.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.41 .. Rec_loss: 5323.19 .. NELBO: 5326.6
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

```

```

Epoch---->10 .. LR: 0.005 .. KL_theta: 6.84 .. Rec_loss: 11782.72 .. NELBO:
11789.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.23 .. Rec_loss: 5342.83 .. NELBO: 5345.06
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.81 .. Rec_loss: 11792.23 .. NELBO:
11797.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 5350.36 .. NELBO: 5352.21
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 4.13 .. Rec_loss: 11787.13 .. NELBO:
11791.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.01 .. Rec_loss: 5346.71 .. NELBO: 5348.72
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.13803105531257293, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=51, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=51, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=51, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1012.91 .. Rec_loss: 12264.13 .. NELBO:
13277.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 30.92 .. Rec_loss: 5445.07 .. NELBO:
5475.99
*****
*****
Validation loss decreased (inf --> 10951.978516). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 43.0 .. Rec_loss: 12252.47 .. NELBO:
12295.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.27 .. Rec_loss: 5436.48 .. NELBO:
5454.75
*****
*****
Validation loss decreased (10951.978516 --> 10909.515625). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 40.73 .. Rec_loss: 12224.59 .. NELBO:
12265.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.81 .. Rec_loss: 5419.1 .. NELBO: 5435.91
*****
*****
Validation loss decreased (10909.515625 --> 10871.819336). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 31.98 .. Rec_loss: 12170.48 .. NELBO:
12202.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.65 .. Rec_loss: 5392.3 .. NELBO: 5402.95

```

```

*****
*****
Validation loss decreased (10871.819336 --> 10805.895508). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 21.6 .. Rec_loss: 12088.99 .. NELBO:
12110.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.07 .. Rec_loss: 5358.86 .. NELBO: 5366.93
*****
*****
Validation loss decreased (10805.895508 --> 10733.860352). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 16.95 .. Rec_loss: 11988.36 .. NELBO:
12005.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.99 .. Rec_loss: 5325.44 .. NELBO: 5332.43
*****
*****
Validation loss decreased (10733.860352 --> 10664.856445). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 14.95 .. Rec_loss: 11885.72 .. NELBO:
11900.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.2 .. Rec_loss: 5303.26 .. NELBO: 5309.46
*****
*****
Validation loss decreased (10664.856445 --> 10618.915039). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 13.2 .. Rec_loss: 11808.92 .. NELBO:
11822.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.88 .. Rec_loss: 5302.44 .. NELBO: 5307.32

```

```

*****
*****
Validation loss decreased (10618.915039 --> 10614.624023). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 9.49 .. Rec_loss: 11777.12 .. NELBO:
11786.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.26 .. Rec_loss: 5320.82 .. NELBO: 5324.08
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 6.24 .. Rec_loss: 11781.5 .. NELBO:
11787.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.0 .. Rec_loss: 5341.92 .. NELBO: 5343.92
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.03 .. Rec_loss: 11792.01 .. NELBO:
11796.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 5351.5 .. NELBO: 5352.79
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.64 .. Rec_loss: 11788.61 .. NELBO:
11791.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 5349.25 .. NELBO: 5350.22

```

```

*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 2.08 .. Rec_loss: 11775.44 .. NELBO:
11777.52
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.85 .. Rec_loss: 5342.25 .. NELBO: 5343.1
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.13803105531257293, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=51, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=51, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=51, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1645.13 .. Rec_loss: 12264.12 .. NELBO:
13909.25
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 43.52 .. Rec_loss: 5445.51 .. NELBO:
5489.03
*****
*****
Validation loss decreased (inf --> 10978.070312). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 64.78 .. Rec_loss: 12253.31 .. NELBO:
12318.09
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 36.06 .. Rec_loss: 5436.46 .. NELBO:
5472.52
*****
*****
Validation loss decreased (10978.070312 --> 10945.039062). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 79.01 .. Rec_loss: 12225.41 .. NELBO:
12304.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 32.28 .. Rec_loss: 5420.19 .. NELBO:
5452.47
*****
*****
Validation loss decreased (10945.039062 --> 10904.933594). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 64.99 .. Rec_loss: 12175.26 .. NELBO:
12240.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 26.99 .. Rec_loss: 5396.46 .. NELBO:
5423.45
*****
*****
Validation loss decreased (10904.933594 --> 10846.893555). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 56.9 .. Rec_loss: 12103.37 .. NELBO:
12160.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.66 .. Rec_loss: 5365.13 .. NELBO:
5389.79
*****
*****
Validation loss decreased (10846.893555 --> 10779.582031). Saving model ...
*****

```

```

*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 53.84 .. Rec_loss: 12007.59 .. NELBO:
12061.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 26.01 .. Rec_loss: 5329.72 .. NELBO:
5355.73
*****
*****
Validation loss decreased (10779.582031 --> 10711.462891). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 57.56 .. Rec_loss: 11901.29 .. NELBO:
11958.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 29.26 .. Rec_loss: 5305.26 .. NELBO:
5334.52
*****
*****
Validation loss decreased (10711.462891 --> 10669.048828). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 61.28 .. Rec_loss: 11819.22 .. NELBO:
11880.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 26.33 .. Rec_loss: 5301.22 .. NELBO:
5327.55
*****
*****
Validation loss decreased (10669.048828 --> 10655.098633). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 53.15 .. Rec_loss: 11780.92 .. NELBO:
11834.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.69 .. Rec_loss: 5312.21 .. NELBO: 5332.9
*****

```



```

*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 41.86 .. Rec_loss: 11774.01 .. NELBO:
11815.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.13 .. Rec_loss: 5325.15 .. NELBO:
5341.28
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 33.86 .. Rec_loss: 11775.42 .. NELBO:
11809.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 13.64 .. Rec_loss: 5334.83 .. NELBO:
5348.47
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 29.69 .. Rec_loss: 11775.08 .. NELBO:
11804.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.74 .. Rec_loss: 5337.36 .. NELBO: 5350.1
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 27.43 .. Rec_loss: 11768.76 .. NELBO:
11796.19
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 12.14 .. Rec_loss: 5334.55 .. NELBO:
5346.69
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 30
model: ETM(
  (t_drop): Dropout(p=0.14807660846264453, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=89, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=89, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=89, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 12263.71 .. NELBO:
12264.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.42 .. Rec_loss: 5443.03 .. NELBO: 5444.45
*****
*****
Validation loss decreased (inf --> 10888.894531). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.7 .. Rec_loss: 12243.19 .. NELBO:
12244.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5427.17 .. NELBO: 5427.2
*****
*****
Validation loss decreased (10888.894531 --> 10854.386719). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 12192.22 .. NELBO:

```

```
12192.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5399.51 .. NELBO: 5399.82
*****
*****
Validation loss decreased (10854.386719 --> 10799.630859). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.9 .. Rec_loss: 12108.76 .. NELBO:
12109.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 5363.3 .. NELBO: 5364.9
*****
*****
Validation loss decreased (10799.630859 --> 10729.811523). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.96 .. Rec_loss: 12002.72 .. NELBO:
12005.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 5327.99 .. NELBO: 5328.65
*****
*****
Validation loss decreased (10729.811523 --> 10657.284180). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.89 .. Rec_loss: 11898.75 .. NELBO:
11899.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5304.47 .. NELBO: 5304.6
*****
*****
Validation loss decreased (10657.284180 --> 10609.204102). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.23 .. Rec_loss: 11817.78 .. NELBO:
```

```
11819.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5302.89 .. NELB0: 5303.19
*****
*****
Validation loss decreased (10609.204102 --> 10606.382812). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 11783.4 .. NELB0:
11783.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 5320.83 .. NELB0: 5321.52
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.96 .. Rec_loss: 11785.47 .. NELB0:
11786.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5341.7 .. NELB0: 5341.79
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 11794.71 .. NELB0:
11795.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5350.42 .. NELB0: 5350.76
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.95 .. Rec_loss: 11788.84 .. NELB0:
```

```

11789.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.3 .. Rec_loss: 5347.04 .. NELBO: 5348.34
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.38 .. Rec_loss: 11774.37 .. NELBO:
11776.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 5341.05 .. NELBO: 5341.74
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.14807660846264453, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=89, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=89, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=89, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 12263.68 .. NELBO:
12264.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.59 .. Rec_loss: 5442.76 .. NELBO: 5444.35
*****
*****
Validation loss decreased (inf --> 10888.687500). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.9 .. Rec_loss: 12242.65 .. NELBO:
12244.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5426.79 .. NELBO: 5426.81
*****
*****
Validation loss decreased (10888.687500 --> 10853.617188). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12191.55 .. NELBO:
12192.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5399.19 .. NELBO: 5399.48
*****
*****
Validation loss decreased (10853.617188 --> 10798.957031). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12109.09 .. NELBO:
12109.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 5363.46 .. NELBO: 5364.18
*****
*****
Validation loss decreased (10798.957031 --> 10728.354492). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.68 .. Rec_loss: 12003.6 .. NELBO:
12006.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 5327.76 .. NELBO: 5328.52
*****
*****
Validation loss decreased (10728.354492 --> 10657.042969). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.92 .. Rec_loss: 11899.48 .. NELBO:
11900.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5304.36 .. NELBO: 5304.56
*****
*****
Validation loss decreased (10657.042969 --> 10609.129883). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.85 .. Rec_loss: 11819.07 .. NELBO:
11819.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5302.62 .. NELBO: 5302.98
*****
*****
Validation loss decreased (10609.129883 --> 10605.972656). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11783.68 .. NELBO:
11784.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 5320.05 .. NELBO: 5320.64
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 11785.18 .. NELBO:
11786.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5341.1 .. NELBO: 5341.35
*****
*****
EarlyStopping counter: 2 out of 5

```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 11794.31 .. NELBO:
11794.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.8 .. Rec_loss: 5349.81 .. NELBO: 5350.61
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.65 .. Rec_loss: 11788.47 .. NELBO:
11790.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.58 .. Rec_loss: 5346.71 .. NELBO: 5348.29
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.64 .. Rec_loss: 11772.8 .. NELBO:
11775.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 5340.35 .. NELBO: 5341.78
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.14807660846264453, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=89, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
)

```



```

(mu_q_theta): Linear(in_features=800, out_features=89, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=89, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 12263.87 .. NELBO:
12264.21
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.21 .. Rec_loss: 5443.16 .. NELBO: 5444.37
*****
*****
Validation loss decreased (inf --> 10888.749023). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.78 .. Rec_loss: 12243.77 .. NELBO:
12245.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5427.58 .. NELBO: 5427.6
*****
*****
Validation loss decreased (10888.749023 --> 10855.206055). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 12193.97 .. NELBO:
12194.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5400.42 .. NELBO: 5400.71
*****
*****
Validation loss decreased (10855.206055 --> 10801.435547). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 12112.48 .. NELBO:
12112.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5364.79 .. NELBO: 5365.12

```

```

*****
*****
Validation loss decreased (10801.435547 --> 10730.238281). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.1 .. Rec_loss: 12006.94 .. NELBO:
12008.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 5328.47 .. NELBO: 5330.26
*****
*****
Validation loss decreased (10730.238281 --> 10660.526367). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.17 .. Rec_loss: 11900.35 .. NELBO:
11902.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5304.94 .. NELBO: 5305.13
*****
*****
Validation loss decreased (10660.526367 --> 10610.258789). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 11820.08 .. NELBO:
11820.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 5302.66 .. NELBO: 5302.98
*****
*****
Validation loss decreased (10610.258789 --> 10605.944336). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 11783.6 .. NELBO:
11784.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5320.21 .. NELBO: 5320.29

```

```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 11784.84 .. NELBO:
11785.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 5340.81 .. NELBO: 5341.46
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.1 .. Rec_loss: 11793.27 .. NELBO:
11794.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.8 .. Rec_loss: 5350.17 .. NELBO: 5350.97
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.81 .. Rec_loss: 11788.31 .. NELBO:
11790.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.51 .. Rec_loss: 5346.04 .. NELBO: 5348.55
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 6.12 .. Rec_loss: 11770.17 .. NELBO:
11776.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.21 .. Rec_loss: 5339.15 .. NELBO: 5342.36

```

```

*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 31
model: ETM(
  (t_drop): Dropout(p=0.15193755897919223, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1308.5 .. Rec_loss: 12264.54 .. NELB0:
13573.04
*****
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.75 .. Rec_loss: 5445.38 .. NELB0:
5471.13
*****
*****
Validation loss decreased (inf --> 10942.256836). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 32.04 .. Rec_loss: 12253.17 .. NELB0:
12285.21
*****
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.8 .. Rec_loss: 5436.15 .. NELB0: 5443.95
*****
*****
*****
Validation loss decreased (10942.256836 --> 10887.901367). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 17.69 .. Rec_loss: 12224.1 .. NELB0:
12241.79

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.87 .. Rec_loss: 5418.56 .. NELBO: 5425.43
*****
*****
Validation loss decreased (10887.901367 --> 10850.853516). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 14.15 .. Rec_loss: 12168.79 .. NELBO:
12182.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.86 .. Rec_loss: 5391.33 .. NELBO: 5396.19
*****
*****
Validation loss decreased (10850.853516 --> 10792.371094). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 10.31 .. Rec_loss: 12085.88 .. NELBO:
12096.19
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.51 .. Rec_loss: 5357.25 .. NELBO: 5360.76
*****
*****
Validation loss decreased (10792.371094 --> 10721.524414). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 7.71 .. Rec_loss: 11984.93 .. NELBO:
11992.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.68 .. Rec_loss: 5323.83 .. NELBO: 5326.51
*****
*****
Validation loss decreased (10721.524414 --> 10653.033203). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.86 .. Rec_loss: 11882.52 .. NELBO:
11888.38

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.19 .. Rec_loss: 5302.83 .. NELBO: 5305.02
*****
*****
Validation loss decreased (10653.033203 --> 10610.054688). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 5.03 .. Rec_loss: 11807.52 .. NELBO:
11812.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.77 .. Rec_loss: 5304.0 .. NELBO: 5305.77
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 3.75 .. Rec_loss: 11778.85 .. NELBO:
11782.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.32 .. Rec_loss: 5323.81 .. NELBO: 5325.13
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.77 .. Rec_loss: 11785.26 .. NELBO:
11788.03
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.92 .. Rec_loss: 5344.7 .. NELBO: 5345.62
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.98 .. Rec_loss: 11794.59 .. NELBO:
11796.57

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 5353.17 .. NELBO: 5353.8
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.36 .. Rec_loss: 11790.17 .. NELBO:
11791.53
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5350.23 .. NELBO: 5350.7
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.15193755897919223, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 946.37 .. Rec_loss: 12264.03 .. NELBO:
13210.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.65 .. Rec_loss: 5445.2 .. NELBO: 5468.85
*****
*****
Validation loss decreased (inf --> 10937.701172). Saving model ...
*****

```

```

*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 30.11 .. Rec_loss: 12253.4 .. NELBO:
12283.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.41 .. Rec_loss: 5436.54 .. NELBO: 5443.95
*****
*****
Validation loss decreased (10937.701172 --> 10887.914062). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 16.92 .. Rec_loss: 12225.04 .. NELBO:
12241.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.57 .. Rec_loss: 5419.24 .. NELBO: 5425.81
*****
*****
Validation loss decreased (10887.914062 --> 10851.624023). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 13.38 .. Rec_loss: 12170.6 .. NELBO:
12183.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.93 .. Rec_loss: 5392.36 .. NELBO: 5396.29
*****
*****
Validation loss decreased (10851.624023 --> 10792.591797). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 8.09 .. Rec_loss: 12089.46 .. NELBO:
12097.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.62 .. Rec_loss: 5358.54 .. NELBO: 5361.16
*****
*****
Validation loss decreased (10792.591797 --> 10722.328125). Saving model ...
*****

```



```

*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 5.78 .. Rec_loss: 11988.62 .. NELBO:
11994.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.95 .. Rec_loss: 5325.06 .. NELBO: 5327.01
*****
*****
Validation loss decreased (10722.328125 --> 10654.019531). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.3 .. Rec_loss: 11886.12 .. NELBO:
11890.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.48 .. Rec_loss: 5303.35 .. NELBO: 5304.83
*****
*****
Validation loss decreased (10654.019531 --> 10609.660156). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.31 .. Rec_loss: 11809.97 .. NELBO:
11813.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 5303.35 .. NELBO: 5304.44
*****
*****
Validation loss decreased (10609.660156 --> 10608.884766). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.26 .. Rec_loss: 11779.06 .. NELBO:
11781.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 5322.7 .. NELBO: 5323.46
*****
*****
EarlyStopping counter: 1 out of 5
*****

```

```

*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.58 .. Rec_loss: 11784.13 .. NELBO:
11785.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5344.35 .. NELBO: 5344.84
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 11795.69 .. NELBO:
11796.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5353.8 .. NELBO: 5354.09
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 11791.78 .. NELBO:
11792.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5351.32 .. NELBO: 5351.49
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 11777.85 .. NELBO:
11778.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5344.21 .. NELBO: 5344.32
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping

```

```

model: ETM(
  (t_drop): Dropout(p=0.15193755897919223, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1091.29 .. Rec_loss: 12264.37 .. NELBO:
13355.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 19.71 .. Rec_loss: 5445.38 .. NELBO:
5465.09
*****
*****
Validation loss decreased (inf --> 10930.187500). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 22.37 .. Rec_loss: 12253.37 .. NELBO:
12275.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.64 .. Rec_loss: 5436.45 .. NELBO: 5438.09
*****
*****
Validation loss decreased (10930.187500 --> 10876.187500). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 3.52 .. Rec_loss: 12224.1 .. NELBO:
12227.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.17 .. Rec_loss: 5418.88 .. NELBO: 5420.05

```

```

*****
*****
Validation loss decreased (10876.187500 --> 10840.095703). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 2.17 .. Rec_loss: 12168.4 .. NELBO:
12170.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 5391.57 .. NELBO: 5392.24
*****
*****
Validation loss decreased (10840.095703 --> 10784.480469). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.38 .. Rec_loss: 12085.31 .. NELBO:
12086.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5357.34 .. NELBO: 5357.74
*****
*****
Validation loss decreased (10784.480469 --> 10715.480469). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 11982.77 .. NELBO:
11983.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5323.81 .. NELBO: 5324.06
*****
*****
Validation loss decreased (10715.480469 --> 10648.120117). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 11880.6 .. NELBO:
11881.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5302.84 .. NELBO: 5303.06

```

```

*****
*****
Validation loss decreased (10648.120117 --> 10606.127930). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11805.29 .. NELBO:
11805.74
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5304.42 .. NELBO: 5304.56
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 11776.79 .. NELBO:
11777.04
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5325.11 .. NELBO: 5325.15
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11785.15 .. NELBO:
11785.23
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.95 .. NELBO: 5346.98
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11797.22 .. NELBO:
11797.27
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.73 .. NELBO: 5355.76

```

```

*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.24 .. NELBO:
11792.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.47 .. NELBO: 5352.49
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 32
model: ETM(
  (t_drop): Dropout(p=0.19945062465750413, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=89, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=89, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=89, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 972.88 .. Rec_loss: 12264.71 .. NELBO:
13237.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.26 .. Rec_loss: 5445.42 .. NELBO:
5468.68
*****
*****
Validation loss decreased (inf --> 10937.372070). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 31.17 .. Rec_loss: 12253.87 .. NELBO:
12285.04

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.33 .. Rec_loss: 5436.84 .. NELBO: 5444.17
*****
*****
Validation loss decreased (10937.372070 --> 10888.337891). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 15.88 .. Rec_loss: 12225.22 .. NELBO:
12241.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.9 .. Rec_loss: 5419.37 .. NELBO: 5424.27
*****
*****
Validation loss decreased (10888.337891 --> 10848.529297). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 10.48 .. Rec_loss: 12170.2 .. NELBO:
12180.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.98 .. Rec_loss: 5392.02 .. NELBO: 5395.0
*****
*****
Validation loss decreased (10848.529297 --> 10790.013672). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 6.58 .. Rec_loss: 12087.15 .. NELBO:
12093.73
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.06 .. Rec_loss: 5357.76 .. NELBO: 5359.82
*****
*****
Validation loss decreased (10790.013672 --> 10719.638672). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 4.6 .. Rec_loss: 11984.54 .. NELBO:
11989.14

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.47 .. Rec_loss: 5324.16 .. NELBO: 5325.63
*****
*****
Validation loss decreased (10719.638672 --> 10651.258789). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.3 .. Rec_loss: 11881.77 .. NELBO:
11885.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 5302.93 .. NELBO: 5303.93
*****
*****
Validation loss decreased (10651.258789 --> 10607.852539). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 2.22 .. Rec_loss: 11807.31 .. NELBO:
11809.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 5303.75 .. NELBO: 5304.39
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.34 .. Rec_loss: 11777.62 .. NELBO:
11778.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5323.62 .. NELBO: 5324.0
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.82 .. Rec_loss: 11784.63 .. NELBO:
11785.45

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5345.21 .. NELBO: 5345.41
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 11795.8 .. NELBO:
11796.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5354.33 .. NELBO: 5354.43
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 11790.9 .. NELBO:
11791.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5351.57 .. NELBO: 5351.62
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.19945062465750413, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=89, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=89, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=89, bias=True)
)
*****

```

```

*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1018.45 .. Rec_loss: 12265.19 .. NELBO:
13283.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 21.0 .. Rec_loss: 5446.04 .. NELBO: 5467.04
*****
*****
Validation loss decreased (inf --> 10934.080078). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 26.35 .. Rec_loss: 12255.4 .. NELBO:
12281.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.23 .. Rec_loss: 5437.6 .. NELBO: 5441.83
*****
*****
Validation loss decreased (10934.080078 --> 10883.643555). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 9.76 .. Rec_loss: 12228.11 .. NELBO:
12237.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.59 .. Rec_loss: 5421.26 .. NELBO: 5424.85
*****
*****
Validation loss decreased (10883.643555 --> 10849.706055). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 7.82 .. Rec_loss: 12176.13 .. NELBO:
12183.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.57 .. Rec_loss: 5395.27 .. NELBO: 5397.84
*****
*****
Validation loss decreased (10849.706055 --> 10795.681641). Saving model ...
*****

```

```

*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 5.55 .. Rec_loss: 12096.63 .. NELBO:
12102.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 5361.89 .. NELBO: 5363.74
*****
*****
Validation loss decreased (10795.681641 --> 10727.482422). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.97 .. Rec_loss: 11996.74 .. NELBO:
12000.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.31 .. Rec_loss: 5327.96 .. NELBO: 5329.27
*****
*****
Validation loss decreased (10727.482422 --> 10658.548828). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.03 .. Rec_loss: 11893.84 .. NELBO:
11896.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.89 .. Rec_loss: 5304.63 .. NELBO: 5305.52
*****
*****
Validation loss decreased (10658.548828 --> 10611.049805). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.99 .. Rec_loss: 11814.4 .. NELBO:
11816.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 5302.42 .. NELBO: 5302.99
*****
*****
Validation loss decreased (10611.049805 --> 10605.977539). Saving model ...
*****

```

```

*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.17 .. Rec_loss: 11778.37 .. NELBO:
11779.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5320.63 .. NELBO: 5320.98
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 11782.41 .. NELBO:
11783.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5343.15 .. NELBO: 5343.36
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 11795.03 .. NELBO:
11795.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5354.22 .. NELBO: 5354.33
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 11792.63 .. NELBO:
11792.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5352.65 .. NELBO: 5352.71
*****
*****
EarlyStopping counter: 4 out of 5
*****

```

```

*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11779.7 .. NELBO:
11779.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5345.58 .. NELBO: 5345.61
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.19945062465750413, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=89, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=89, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=89, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1099.92 .. Rec_loss: 12264.83 .. NELBO:
13364.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.65 .. Rec_loss: 5445.74 .. NELBO:
5466.39
*****
*****
Validation loss decreased (inf --> 10932.778320). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 27.17 .. Rec_loss: 12254.5 .. NELBO:
12281.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.6 .. Rec_loss: 5436.91 .. NELBO: 5442.51

```

```

*****
*****
Validation loss decreased (10932.778320 --> 10885.022461). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 13.08 .. Rec_loss: 12226.0 .. NELBO:
12239.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.75 .. Rec_loss: 5419.7 .. NELBO: 5424.45
*****
*****
Validation loss decreased (10885.022461 --> 10848.902344). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 9.63 .. Rec_loss: 12171.79 .. NELBO:
12181.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.89 .. Rec_loss: 5392.57 .. NELBO: 5395.46
*****
*****
Validation loss decreased (10848.902344 --> 10790.906250). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 6.28 .. Rec_loss: 12089.38 .. NELBO:
12095.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.71 .. Rec_loss: 5358.15 .. NELBO: 5359.86
*****
*****
Validation loss decreased (10790.906250 --> 10719.719727). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.81 .. Rec_loss: 11986.77 .. NELBO:
11990.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.08 .. Rec_loss: 5324.09 .. NELBO: 5325.17

```

```

*****
*****
Validation loss decreased (10719.719727 --> 10650.340820). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 2.46 .. Rec_loss: 11883.23 .. NELBO:
11885.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.77 .. Rec_loss: 5302.36 .. NELBO: 5303.13
*****
*****
Validation loss decreased (10650.340820 --> 10606.253906). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 1.67 .. Rec_loss: 11806.64 .. NELBO:
11808.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 5303.24 .. NELBO: 5303.82
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 11776.72 .. NELBO:
11777.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5323.8 .. NELBO: 5324.2
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.89 .. Rec_loss: 11784.76 .. NELBO:
11785.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5345.96 .. NELBO: 5346.21

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 11796.56 .. NELBO:
11797.09
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5355.12 .. NELBO: 5355.26
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 11791.95 .. NELBO:
11792.23
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5352.13 .. NELBO: 5352.2
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 33
model: ETM(
  (t_drop): Dropout(p=0.03735381647408865, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=87, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=87, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=87, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1297.13 .. Rec_loss: 12264.86 .. NELBO:
13561.99
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 27.93 .. Rec_loss: 5445.7 .. NELBO: 5473.63
*****
*****
Validation loss decreased (inf --> 10947.250977). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 37.47 .. Rec_loss: 12254.89 .. NELBO:
12292.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 14.53 .. Rec_loss: 5438.09 .. NELBO:
5452.62
*****
*****
Validation loss decreased (10947.250977 --> 10905.230469). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 30.63 .. Rec_loss: 12228.95 .. NELBO:
12259.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 14.21 .. Rec_loss: 5421.93 .. NELBO:
5436.14
*****
*****
Validation loss decreased (10905.230469 --> 10872.290039). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 26.47 .. Rec_loss: 12177.39 .. NELBO:
12203.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.06 .. Rec_loss: 5396.07 .. NELBO: 5405.13
*****
*****
Validation loss decreased (10872.290039 --> 10810.266602). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 16.98 .. Rec_loss: 12098.42 .. NELBO:

```

```

12115.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.08 .. Rec_loss: 5362.85 .. NELBO: 5368.93
*****
*****
Validation loss decreased (10810.266602 --> 10737.852539). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 11.54 .. Rec_loss: 11998.56 .. NELBO:
12010.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.61 .. Rec_loss: 5328.63 .. NELBO: 5333.24
*****
*****
Validation loss decreased (10737.852539 --> 10666.475586). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 9.05 .. Rec_loss: 11894.08 .. NELBO:
11903.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.88 .. Rec_loss: 5304.76 .. NELBO: 5308.64
*****
*****
Validation loss decreased (10666.475586 --> 10617.294922). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 7.72 .. Rec_loss: 11813.59 .. NELBO:
11821.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.09 .. Rec_loss: 5302.12 .. NELBO: 5305.21
*****
*****
Validation loss decreased (10617.294922 --> 10610.428711). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 5.95 .. Rec_loss: 11777.84 .. NELBO:

```

```

11783.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.12 .. Rec_loss: 5320.03 .. NELBO: 5322.15
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 3.89 .. Rec_loss: 11781.52 .. NELBO:
11785.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 5342.16 .. NELBO: 5343.43
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.32 .. Rec_loss: 11793.74 .. NELBO:
11796.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 5352.88 .. NELBO: 5353.61
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.34 .. Rec_loss: 11792.15 .. NELBO:
11793.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5350.98 .. NELBO: 5351.43
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.88 .. Rec_loss: 11778.43 .. NELBO:

```

```

11779.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5343.7 .. NELBO: 5344.04
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.03735381647408865, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=87, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=87, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=87, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1171.34 .. Rec_loss: 12264.48 .. NELBO:
13435.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.48 .. Rec_loss: 5445.55 .. NELBO:
5469.03
*****
*****
Validation loss decreased (inf --> 10938.053711). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 28.06 .. Rec_loss: 12254.08 .. NELBO:
12282.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.34 .. Rec_loss: 5437.0 .. NELBO: 5443.34
*****
*****

```

```

Validation loss decreased (10938.053711 --> 10886.674805). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 13.18 .. Rec_loss: 12225.75 .. NELBO:
12238.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.14 .. Rec_loss: 5419.97 .. NELBO: 5426.11
*****
*****
Validation loss decreased (10886.674805 --> 10852.223633). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 12.04 .. Rec_loss: 12171.72 .. NELBO:
12183.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.92 .. Rec_loss: 5393.07 .. NELBO: 5397.99
*****
*****
Validation loss decreased (10852.223633 --> 10795.992188). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 9.53 .. Rec_loss: 12089.71 .. NELBO:
12099.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.59 .. Rec_loss: 5358.96 .. NELBO: 5362.55
*****
*****
Validation loss decreased (10795.992188 --> 10725.104492). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 6.93 .. Rec_loss: 11987.05 .. NELBO:
11993.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.51 .. Rec_loss: 5325.19 .. NELBO: 5327.7
*****
*****

```

```

Validation loss decreased (10725.104492 --> 10655.392578). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.69 .. Rec_loss: 11884.15 .. NELBO:
11888.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.62 .. Rec_loss: 5303.39 .. NELBO: 5305.01
*****
*****
Validation loss decreased (10655.392578 --> 10610.032227). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.04 .. Rec_loss: 11807.5 .. NELBO:
11810.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 5303.55 .. NELBO: 5304.55
*****
*****
Validation loss decreased (10610.032227 --> 10609.101562). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.81 .. Rec_loss: 11776.86 .. NELBO:
11778.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 5323.27 .. NELBO: 5323.82
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 11783.89 .. NELBO:
11784.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5345.16 .. NELBO: 5345.41
*****
*****

```

```

EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11795.96 .. NELBO:
11796.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5354.52 .. NELBO: 5354.62
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11792.3 .. NELBO:
11792.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5351.73 .. NELBO: 5351.77
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11777.68 .. NELBO:
11777.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.32 .. NELBO: 5344.34
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.03735381647408865, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=87, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)

```

```

)
(mu_q_theta): Linear(in_features=800, out_features=87, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=87, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1334.52 .. Rec_loss: 12264.39 .. NELBO:
13598.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 26.76 .. Rec_loss: 5446.18 .. NELBO:
5472.94
*****
*****
Validation loss decreased (inf --> 10945.886719). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 32.22 .. Rec_loss: 12255.43 .. NELBO:
12287.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.46 .. Rec_loss: 5437.78 .. NELBO: 5445.24
*****
*****
Validation loss decreased (10945.886719 --> 10890.481445). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 15.92 .. Rec_loss: 12228.31 .. NELBO:
12244.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.13 .. Rec_loss: 5421.26 .. NELBO: 5428.39
*****
*****
Validation loss decreased (10890.481445 --> 10856.772461). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 13.45 .. Rec_loss: 12175.59 .. NELBO:
12189.04
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.18 .. Rec_loss: 5394.64 .. NELBO: 5399.82
*****
*****
Validation loss decreased (10856.772461 --> 10799.635742). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 10.09 .. Rec_loss: 12093.86 .. NELBO:
12103.95
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.99 .. Rec_loss: 5360.57 .. NELBO: 5364.56
*****
*****
Validation loss decreased (10799.635742 --> 10729.120117). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 7.81 .. Rec_loss: 11991.58 .. NELBO:
11999.39
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.22 .. Rec_loss: 5326.46 .. NELBO: 5329.68
*****
*****
Validation loss decreased (10729.120117 --> 10659.361328). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 6.31 .. Rec_loss: 11887.54 .. NELBO:
11893.85
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.5 .. Rec_loss: 5304.01 .. NELBO: 5306.51
*****
*****
Validation loss decreased (10659.361328 --> 10613.034180). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.83 .. Rec_loss: 11809.66 .. NELBO:
11814.49
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.87 .. Rec_loss: 5303.68 .. NELBO: 5305.55
*****
*****
Validation loss decreased (10613.034180 --> 10611.108398). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 3.59 .. Rec_loss: 11777.5 .. NELBO:
11781.09
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.28 .. Rec_loss: 5323.31 .. NELBO: 5324.59
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.41 .. Rec_loss: 11784.2 .. NELBO:
11786.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.83 .. Rec_loss: 5345.24 .. NELBO: 5346.07
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.59 .. Rec_loss: 11795.76 .. NELBO:
11797.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 5354.54 .. NELBO: 5355.11
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.14 .. Rec_loss: 11791.72 .. NELBO:
11792.86
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5351.56 .. NELBO: 5352.01
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.94 .. Rec_loss: 11777.09 .. NELBO:
11778.03
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5343.86 .. NELBO: 5344.29
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 34
model: ETM(
  (t_drop): Dropout(p=0.05002456110320868, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 97.83 .. Rec_loss: 12264.46 .. NELBO:
12362.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.23 .. Rec_loss: 5444.58 .. NELBO: 5452.81
*****
*****
Validation loss decreased (inf --> 10905.618164). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.82 .. Rec_loss: 12250.81 .. NELBO:

```

```

12259.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5433.72 .. NELBO: 5434.2
*****
*****
Validation loss decreased (10905.618164 --> 10868.402344). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 12214.49 .. NELBO:
12215.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5411.98 .. NELBO: 5412.06
*****
*****
Validation loss decreased (10868.402344 --> 10824.119141). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12147.72 .. NELBO:
12147.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.17 .. NELBO: 5380.2
*****
*****
Validation loss decreased (10824.119141 --> 10760.401367). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12053.39 .. NELBO:
12053.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.56 .. NELBO: 5343.58
*****
*****
Validation loss decreased (10760.401367 --> 10687.154297). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11945.17 .. NELBO:

```

```
11945.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.53 .. NELB0: 5312.55
*****
*****
Validation loss decreased (10687.154297 --> 10625.090820). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11848.67 .. NELB0:
11848.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.79 .. NELB0: 5299.81
*****
*****
Validation loss decreased (10625.090820 --> 10599.612305). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.85 .. NELB0:
11790.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.89 .. NELB0: 5310.91
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.03 .. NELB0:
11780.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.56 .. NELB0: 5334.58
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.98 .. NELB0:
```

```

11793.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.39 .. NELBO: 5351.41
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.73 .. NELBO:
11796.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.1 .. NELBO: 5354.12
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.85 .. NELBO:
11785.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.27 .. NELBO: 5348.29
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05002456110320868, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)

```

```

*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 92.62 .. Rec_loss: 12264.05 .. NELBO:
12356.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.92 .. Rec_loss: 5443.87 .. NELBO: 5451.79
*****
*****
Validation loss decreased (inf --> 10903.587891). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.57 .. Rec_loss: 12247.99 .. NELBO:
12256.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5431.87 .. NELBO: 5432.36
*****
*****
Validation loss decreased (10903.587891 --> 10864.712891). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 12208.33 .. NELBO:
12209.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.92 .. NELBO: 5409.0
*****
*****
Validation loss decreased (10864.712891 --> 10817.989258). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12137.98 .. NELBO:
12138.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.31 .. NELBO: 5376.34
*****
*****
Validation loss decreased (10817.989258 --> 10752.681641). Saving model ...

```

```

*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12041.05 .. NELBO:
12041.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.98 .. NELBO: 5340.0
*****
*****
Validation loss decreased (10752.681641 --> 10680.004883). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11933.62 .. NELBO:
11933.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.62 .. NELBO: 5310.64
*****
*****
Validation loss decreased (10680.004883 --> 10621.267578). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11840.95 .. NELBO:
11840.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.4 .. NELBO: 5300.42
*****
*****
Validation loss decreased (10621.267578 --> 10600.830078). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.4 .. NELBO:
11788.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.26 .. NELBO: 5313.28
*****
*****
EarlyStopping counter: 1 out of 5

```



```

*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.21 .. NELBO:
11781.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.56 .. NELBO: 5336.58
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.96 .. NELBO:
11794.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.75 .. NELBO: 5351.77
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.06 .. NELBO:
11796.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.25 .. NELBO: 5353.27
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.27 .. NELBO:
11784.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.09 .. NELBO: 5347.11
*****
*****
EarlyStopping counter: 5 out of 5

```

Early stopping

```
model: ETM(
  (t_drop): Dropout(p=0.05002456110320868, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 93.72 .. Rec_loss: 12264.09 .. NELBO:
12357.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.2 .. Rec_loss: 5443.98 .. NELBO: 5452.18
*****
*****
Validation loss decreased (inf --> 10904.371094). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.91 .. Rec_loss: 12248.37 .. NELBO:
12257.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5432.15 .. NELBO: 5432.64
*****
*****
Validation loss decreased (10904.371094 --> 10865.279297). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 12209.48 .. NELBO:
12210.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.42 .. NELBO: 5409.5
```

```

*****
*****
Validation loss decreased (10865.279297 --> 10819.001953). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12139.77 .. NELBO:
12139.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.09 .. NELBO: 5377.12
*****
*****
Validation loss decreased (10819.001953 --> 10754.243164). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12044.2 .. NELBO:
12044.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.86 .. NELBO: 5340.88
*****
*****
Validation loss decreased (10754.243164 --> 10681.772461). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11935.93 .. NELBO:
11935.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.21 .. NELBO: 5311.23
*****
*****
Validation loss decreased (10681.772461 --> 10622.451172). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11842.41 .. NELBO:
11842.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.31 .. NELBO: 5300.33

```

```

*****
*****
Validation loss decreased (10622.451172 --> 10600.669922). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.7 .. NELBO:
11788.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.5 .. NELBO: 5312.52
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.31 .. NELBO:
11780.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.79 .. NELBO: 5335.81
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.62 .. NELBO:
11792.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.66 .. NELBO: 5351.68
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.05 .. NELBO:
11796.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.79 .. NELBO: 5353.81

```

```

*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.7 .. NELBO:
11784.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.84 .. NELBO: 5347.86
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 35
model: ETM(
  (t_drop): Dropout(p=0.01985358811219521, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1265.85 .. Rec_loss: 12264.41 .. NELBO:
13530.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 28.24 .. Rec_loss: 5446.16 .. NELBO: 5474.4
*****
*****
Validation loss decreased (inf --> 10948.813477). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 37.03 .. Rec_loss: 12255.87 .. NELBO:
12292.9
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.71 .. Rec_loss: 5437.78 .. NELBO:
5450.49
*****
*****
Validation loss decreased (10948.813477 --> 10900.989258). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 26.73 .. Rec_loss: 12228.96 .. NELBO:
12255.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.43 .. Rec_loss: 5422.04 .. NELBO:
5434.47
*****
*****
Validation loss decreased (10900.989258 --> 10868.930664). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 22.34 .. Rec_loss: 12179.4 .. NELBO:
12201.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.48 .. Rec_loss: 5397.27 .. NELBO: 5404.75
*****
*****
Validation loss decreased (10868.930664 --> 10809.484375). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 13.43 .. Rec_loss: 12103.29 .. NELBO:
12116.72
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.35 .. Rec_loss: 5364.83 .. NELBO: 5369.18
*****
*****
Validation loss decreased (10809.484375 --> 10738.347656). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 7.79 .. Rec_loss: 12006.2 .. NELBO:

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```
12013.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.62 .. Rec_loss: 5330.78 .. NELBO: 5333.4
*****
*****
Validation loss decreased (10738.347656 --> 10666.787109). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.84 .. Rec_loss: 11902.91 .. NELBO:
11907.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.72 .. Rec_loss: 5305.97 .. NELBO: 5307.69
*****
*****
Validation loss decreased (10666.787109 --> 10615.380859). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.24 .. Rec_loss: 11819.86 .. NELBO:
11823.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.23 .. Rec_loss: 5301.66 .. NELBO: 5302.89
*****
*****
Validation loss decreased (10615.380859 --> 10605.789062). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.35 .. Rec_loss: 11779.5 .. NELBO:
11781.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.91 .. Rec_loss: 5318.73 .. NELBO: 5319.64
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.75 .. Rec_loss: 11781.34 .. NELBO:
```

```

11783.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 5341.8 .. NELBO: 5342.46
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 11794.93 .. NELBO:
11796.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5354.02 .. NELBO: 5354.49
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.9 .. Rec_loss: 11794.72 .. NELBO:
11795.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5352.9 .. NELBO: 5353.24
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 11780.65 .. NELBO:
11781.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5345.59 .. NELBO: 5345.87
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
    (t_drop): Dropout(p=0.01985358811219521, inplace=False)

```



```

(theta_act): Softplus(beta=1, threshold=20)
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=86, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1161.74 .. Rec_loss: 12263.89 .. NELBO:
13425.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.0 .. Rec_loss: 5445.12 .. NELBO: 5470.12
*****
*****
Validation loss decreased (inf --> 10940.250000). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 30.55 .. Rec_loss: 12252.89 .. NELBO:
12283.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.13 .. Rec_loss: 5436.2 .. NELBO: 5444.33
*****
*****
Validation loss decreased (10940.250000 --> 10888.661133). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 17.16 .. Rec_loss: 12223.07 .. NELBO:
12240.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.95 .. Rec_loss: 5418.35 .. NELBO: 5426.3
*****
*****
Validation loss decreased (10888.661133 --> 10852.599609). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 14.8 .. Rec_loss: 12166.52 .. NELBO:
12181.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.62 .. Rec_loss: 5390.49 .. NELBO: 5396.11
*****
*****
Validation loss decreased (10852.599609 --> 10792.218750). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 10.46 .. Rec_loss: 12082.0 .. NELBO:
12092.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.8 .. Rec_loss: 5356.01 .. NELBO: 5359.81
*****
*****
Validation loss decreased (10792.218750 --> 10719.603516). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 7.05 .. Rec_loss: 11979.65 .. NELBO:
11986.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.59 .. Rec_loss: 5322.81 .. NELBO: 5325.4
*****
*****
Validation loss decreased (10719.603516 --> 10650.797852). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.9 .. Rec_loss: 11877.77 .. NELBO:
11882.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 5302.47 .. NELBO: 5304.32
*****
*****
Validation loss decreased (10650.797852 --> 10608.640625). Saving model ...

```

```

*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 3.48 .. Rec_loss: 11804.09 .. NELBO:
11807.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.28 .. Rec_loss: 5304.49 .. NELBO: 5305.77
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 2.34 .. Rec_loss: 11776.95 .. NELBO:
11779.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.77 .. Rec_loss: 5324.96 .. NELBO: 5325.73
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 1.41 .. Rec_loss: 11785.11 .. NELBO:
11786.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5346.1 .. NELBO: 5346.55
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.8 .. Rec_loss: 11795.13 .. NELBO:
11795.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5354.58 .. NELBO: 5354.81
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 11790.78 .. NELBO:
11791.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5351.46 .. NELBO: 5351.57
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.01985358811219521, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1167.5 .. Rec_loss: 12265.01 .. NELBO:
13432.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 27.62 .. Rec_loss: 5445.96 .. NELBO:
5473.58
*****
*****
Validation loss decreased (inf --> 10947.156250). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 34.85 .. Rec_loss: 12255.41 .. NELBO:
12290.26
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 10.99 .. Rec_loss: 5438.0 .. NELBO: 5448.99
*****
*****
Validation loss decreased (10947.156250 --> 10897.970703). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 24.45 .. Rec_loss: 12229.49 .. NELBO:
12253.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.38 .. Rec_loss: 5422.13 .. NELBO:
5434.51
*****
*****
Validation loss decreased (10897.970703 --> 10869.023438). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 23.08 .. Rec_loss: 12178.8 .. NELBO:
12201.88
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.1 .. Rec_loss: 5396.62 .. NELBO: 5404.72
*****
*****
Validation loss decreased (10869.023438 --> 10809.446289). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 14.63 .. Rec_loss: 12101.3 .. NELBO:
12115.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.92 .. Rec_loss: 5363.65 .. NELBO: 5368.57
*****
*****
Validation loss decreased (10809.446289 --> 10737.133789). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 9.06 .. Rec_loss: 12002.31 .. NELBO:
12011.37
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.2 .. Rec_loss: 5329.57 .. NELBO: 5332.77
*****
*****
Validation loss decreased (10737.133789 --> 10665.533203). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 6.01 .. Rec_loss: 11898.63 .. NELBO:
11904.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.26 .. Rec_loss: 5305.41 .. NELBO: 5307.67
*****
*****
Validation loss decreased (10665.533203 --> 10615.326172). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.16 .. Rec_loss: 11817.06 .. NELBO:
11821.22
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.52 .. Rec_loss: 5302.08 .. NELBO: 5303.6
*****
*****
Validation loss decreased (10615.326172 --> 10607.197266). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.78 .. Rec_loss: 11779.02 .. NELBO:
11781.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.94 .. Rec_loss: 5319.62 .. NELBO: 5320.56
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.68 .. Rec_loss: 11781.77 .. NELBO:
11783.45
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5342.23 .. NELBO: 5342.73
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.87 .. Rec_loss: 11794.82 .. NELBO:
11795.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5353.63 .. NELBO: 5353.88
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 11793.39 .. NELBO:
11793.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5352.16 .. NELBO: 5352.3
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 11779.69 .. NELBO:
11780.03
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5344.88 .. NELBO: 5345.05
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 36
model: ETM(
  (t_drop): Dropout(p=0.0564668533294877, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)

```

```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 92.63 .. Rec_loss: 12264.38 .. NELB0:
12357.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.2 .. Rec_loss: 5444.02 .. NELB0: 5452.22
*****
*****
Validation loss decreased (inf --> 10904.447266). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.87 .. Rec_loss: 12248.51 .. NELB0:
12257.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5431.66 .. NELB0: 5432.14
*****
*****
Validation loss decreased (10904.447266 --> 10864.260742). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 12208.03 .. NELB0:
12208.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.42 .. NELB0: 5408.5
*****
*****
Validation loss decreased (10864.260742 --> 10817.003906). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12137.12 .. NELB0:

```



```

12137.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.68 .. NELBO: 5375.71
*****
*****
Validation loss decreased (10817.003906 --> 10751.423828). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12041.04 .. NELBO:
12041.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.44 .. NELBO: 5339.46
*****
*****
Validation loss decreased (10751.423828 --> 10678.915039). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11933.79 .. NELBO:
11933.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.32 .. NELBO: 5310.34
*****
*****
Validation loss decreased (10678.915039 --> 10620.687500). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.37 .. NELBO:
11841.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.35 .. NELBO: 5300.37
*****
*****
Validation loss decreased (10620.687500 --> 10600.739258). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.54 .. NELBO:

```

```

11789.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.14 .. NELBO: 5313.16
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.96 .. NELBO:
11782.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.07 .. NELBO: 5336.09
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.63 .. NELBO:
11793.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.04 .. NELBO: 5351.06
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.62 .. NELBO:
11795.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.55 .. NELBO: 5352.57
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.44 .. NELBO:

```

```

11783.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.52 .. NELBO: 5346.54
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0564668533294877, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 84.14 .. Rec_loss: 12264.41 .. NELBO:
12348.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.43 .. Rec_loss: 5444.28 .. NELBO: 5451.71
*****
*****
Validation loss decreased (inf --> 10903.413086). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.02 .. Rec_loss: 12249.71 .. NELBO:
12257.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5432.85 .. NELBO: 5433.26
*****
*****
Validation loss decreased (10903.413086 --> 10866.508789). Saving model ...

```

```

*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12212.44 .. NELBO:
12213.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.74 .. NELBO: 5410.81
*****
*****
Validation loss decreased (10866.508789 --> 10821.617188). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12144.21 .. NELBO:
12144.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.77 .. NELBO: 5378.8
*****
*****
Validation loss decreased (10821.617188 --> 10757.587891). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12049.94 .. NELBO:
12049.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.38 .. NELBO: 5342.4
*****
*****
Validation loss decreased (10757.587891 --> 10684.790039). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11941.96 .. NELBO:
11942.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.94 .. NELBO: 5311.96
*****
*****
Validation loss decreased (10684.790039 --> 10623.916016). Saving model ...

```

```

*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11846.78 .. NELBO:
11846.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.97 .. NELBO: 5299.99
*****
*****
Validation loss decreased (10623.916016 --> 10599.977539). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.58 .. NELBO:
11790.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.5 .. NELBO: 5311.52
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.02 .. NELBO:
11781.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.81 .. NELBO: 5334.83
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.63 .. NELBO:
11792.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.0 .. NELBO: 5351.02
*****
*****
EarlyStopping counter: 3 out of 5

```

```

*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.27 .. NELBO:
11796.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.42 .. NELBO: 5353.44
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.8 .. NELBO:
11784.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.66 .. NELBO: 5347.68
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0564668533294877, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 92.03 .. Rec_loss: 12264.32 .. NELBO:
12356.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.45 .. Rec_loss: 5444.24 .. NELBO: 5451.69

```

```

*****
*****
Validation loss decreased (inf --> 10903.387695). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.16 .. Rec_loss: 12249.35 .. NELBO:
12257.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5432.61 .. NELBO: 5433.11
*****
*****
Validation loss decreased (10903.387695 --> 10866.220703). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 12211.44 .. NELBO:
12212.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.48 .. NELBO: 5410.56
*****
*****
Validation loss decreased (10866.220703 --> 10821.117188). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12143.62 .. NELBO:
12143.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.58 .. NELBO: 5378.61
*****
*****
Validation loss decreased (10821.117188 --> 10757.226562). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12048.94 .. NELBO:
12048.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.39 .. NELBO: 5342.41

```

```

*****
*****
Validation loss decreased (10757.226562 --> 10684.818359). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11942.02 .. NELBO:
11942.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.21 .. NELBO: 5312.23
*****
*****
Validation loss decreased (10684.818359 --> 10624.465820). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11847.78 .. NELBO:
11847.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.32 .. NELBO: 5300.34
*****
*****
Validation loss decreased (10624.465820 --> 10600.680664). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.85 .. NELBO:
11790.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.61 .. NELBO: 5311.63
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.89 .. NELBO:
11780.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.62 .. NELBO: 5334.64

```



```

*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.53 .. NELBO:
11792.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.77 .. NELBO: 5350.79
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.14 .. NELBO:
11796.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.27 .. NELBO: 5353.29
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.71 .. NELBO:
11784.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.56 .. NELBO: 5347.58
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 37
model: ETM(
  (t_drop): Dropout(p=0.059082864516156436, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=100, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)

```

```

    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=100, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=100, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 98.62 .. Rec_loss: 12264.49 .. NELBO:
12363.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.15 .. Rec_loss: 5444.37 .. NELBO: 5452.52
*****
*****
Validation loss decreased (inf --> 10905.038086). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.92 .. Rec_loss: 12249.66 .. NELBO:
12258.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5432.78 .. NELBO: 5433.28
*****
*****
Validation loss decreased (10905.038086 --> 10866.571289). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 12211.38 .. NELBO:
12212.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.28 .. NELBO: 5410.36
*****
*****
Validation loss decreased (10866.571289 --> 10820.731445). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12142.58 .. NELBO:
12142.71
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.02 .. NELBO: 5378.05
*****
*****
Validation loss decreased (10820.731445 --> 10756.093750). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12046.45 .. NELBO:
12046.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.6 .. NELBO: 5341.62
*****
*****
Validation loss decreased (10756.093750 --> 10683.252930). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11939.4 .. NELBO:
11939.45
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.59 .. NELBO: 5311.61
*****
*****
Validation loss decreased (10683.252930 --> 10623.236328). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11844.66 .. NELBO:
11844.71
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.34 .. NELBO: 5300.36
*****
*****
Validation loss decreased (10623.236328 --> 10600.728516). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11790.26 .. NELBO:
11790.31
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.37 .. NELBO: 5312.39
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11781.49 .. NELBO:
11781.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.59 .. NELBO: 5335.61
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.49 .. NELBO:
11793.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.28 .. NELBO: 5351.3
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.39 .. NELBO:
11796.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.21 .. NELBO: 5353.23
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11784.65 .. NELBO:
11784.7
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.19 .. NELBO: 5347.21
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.059082864516156436, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=100, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=100, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=100, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 93.74 .. Rec_loss: 12264.25 .. NELBO:
12357.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.18 .. Rec_loss: 5444.3 .. NELBO: 5452.48
*****
*****
Validation loss decreased (inf --> 10904.957031). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.87 .. Rec_loss: 12249.07 .. NELBO:
12257.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5432.59 .. NELBO: 5433.0
*****
*****
Validation loss decreased (10904.957031 --> 10865.998047). Saving model ...
*****
*****

```

```

Epoch---->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12210.44 .. NELBO:
12211.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.22 .. NELBO: 5410.29
*****
*****
Validation loss decreased (10865.998047 --> 10820.565430). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12141.69 .. NELBO:
12141.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.03 .. NELBO: 5378.06
*****
*****
Validation loss decreased (10820.565430 --> 10756.115234). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12045.92 .. NELBO:
12045.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.69 .. NELBO: 5341.71
*****
*****
Validation loss decreased (10756.115234 --> 10683.430664). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11937.94 .. NELBO:
11937.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.71 .. NELBO: 5311.73
*****
*****
Validation loss decreased (10683.430664 --> 10623.453125). Saving model ...
*****
*****

```

```
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11843.2 .. NELBO:
11843.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.45 .. NELBO: 5300.47
*****
*****
Validation loss decreased (10623.453125 --> 10600.933594). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.93 .. NELBO:
11788.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.54 .. NELBO: 5312.56
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.33 .. NELBO:
11780.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.9 .. NELBO: 5335.92
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.48 .. NELBO:
11792.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.69 .. NELBO: 5351.71
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
```

```

Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.07 .. NELBO:
11796.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.63 .. NELBO: 5353.65
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.02 .. NELBO:
11785.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.52 .. NELBO: 5347.54
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.059082864516156436, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=100, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=100, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=100, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 95.47 .. Rec_loss: 12264.15 .. NELBO:
12359.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.92 .. Rec_loss: 5444.04 .. NELBO: 5451.96
*****
*****

```



```

Validation loss decreased (inf --> 10903.906250). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.65 .. Rec_loss: 12247.64 .. NELBO:
12256.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5431.19 .. NELBO: 5431.66
*****
*****
Validation loss decreased (10903.906250 --> 10863.323242). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12205.26 .. NELBO:
12205.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5407.28 .. NELBO: 5407.36
*****
*****
Validation loss decreased (10863.323242 --> 10814.722656). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12132.29 .. NELBO:
12132.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5373.88 .. NELBO: 5373.91
*****
*****
Validation loss decreased (10814.722656 --> 10747.817383). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12033.32 .. NELBO:
12033.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.44 .. NELBO: 5337.46
*****
*****

```

```
Validation loss decreased (10747.817383 --> 10674.930664). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11925.07 .. NELBO:
11925.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.23 .. NELBO: 5309.25
*****
*****
Validation loss decreased (10674.930664 --> 10618.511719). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11834.27 .. NELBO:
11834.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5301.2 .. NELBO: 5301.22
*****
*****
Validation loss decreased (10618.511719 --> 10602.445312). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.13 .. NELBO:
11786.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.75 .. NELBO: 5315.77
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.5 .. NELBO:
11782.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.8 .. NELBO: 5338.82
*****
*****
```

```

EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.88 .. NELBO:
11794.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.48 .. NELBO: 5352.5
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.77 .. NELBO:
11795.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.71 .. NELBO: 5352.73
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.59 .. NELBO:
11782.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.09 .. NELBO: 5346.11
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 38
model: ETM(
  (t_drop): Dropout(p=0.06515394005853979, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=56, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)

```

```

    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=56, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=56, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 72.11 .. Rec_loss: 12264.16 .. NELBO:
12336.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.43 .. Rec_loss: 5443.67 .. NELBO: 5451.1
*****
*****
Validation loss decreased (inf --> 10902.193359). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.86 .. Rec_loss: 12248.07 .. NELBO:
12255.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5432.12 .. NELBO: 5432.42
*****
*****
Validation loss decreased (10902.193359 --> 10864.842773). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 12210.0 .. NELBO:
12210.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.87 .. NELBO: 5409.94
*****
*****
Validation loss decreased (10864.842773 --> 10819.887695). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12141.75 .. NELBO:
12141.86
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.08 .. NELBO: 5378.1
*****
*****
Validation loss decreased (10819.887695 --> 10756.193359). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12047.6 .. NELBO:
12047.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5342.15 .. NELBO: 5342.16
*****
*****
Validation loss decreased (10756.193359 --> 10684.322266). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11941.1 .. NELBO:
11941.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.14 .. NELBO: 5312.15
*****
*****
Validation loss decreased (10684.322266 --> 10624.297852). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11846.49 .. NELBO:
11846.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.14 .. NELBO: 5300.15
*****
*****
Validation loss decreased (10624.297852 --> 10600.294922). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11790.81 .. NELBO:
11790.83
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.14 .. NELBO: 5311.15
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.31 .. NELBO:
11780.34
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5334.2 .. NELBO: 5334.21
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11791.86 .. NELBO:
11791.88
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5350.77 .. NELBO: 5350.78
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11796.38 .. NELBO:
11796.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.66 .. NELBO: 5353.67
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11785.93 .. NELBO:
11785.95
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.02 .. NELBO: 5348.03
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06515394005853979, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=56, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=56, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=56, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 75.44 .. Rec_loss: 12264.08 .. NELBO:
12339.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.19 .. Rec_loss: 5443.83 .. NELBO: 5451.02
*****
*****
Validation loss decreased (inf --> 10902.040039). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.83 .. Rec_loss: 12248.23 .. NELBO:
12256.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5431.92 .. NELBO: 5432.37
*****
*****
Validation loss decreased (10902.040039 --> 10864.732422). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12208.79 .. NELBO:
12209.46

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5408.7 .. NELBO: 5408.8
*****
*****
Validation loss decreased (10864.732422 --> 10817.586914). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 12137.35 .. NELBO:
12137.5
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5375.84 .. NELBO: 5375.88
*****
*****
Validation loss decreased (10817.586914 --> 10751.750000). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 12040.99 .. NELBO:
12041.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5339.33 .. NELBO: 5339.36
*****
*****
Validation loss decreased (10751.750000 --> 10678.727539). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11933.23 .. NELBO:
11933.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5309.99 .. NELBO: 5310.02
*****
*****
Validation loss decreased (10678.727539 --> 10620.048828). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11839.9 .. NELBO:
11839.97

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5300.09 .. NELBO: 5300.13
*****
*****
Validation loss decreased (10620.048828 --> 10600.270508). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11788.01 .. NELBO:
11788.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5313.33 .. NELBO: 5313.39
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11781.66 .. NELBO:
11781.78
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5336.64 .. NELBO: 5336.7
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11793.67 .. NELBO:
11793.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5351.62 .. NELBO: 5351.68
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11796.64 .. NELBO:
11796.75

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5352.85 .. NELBO: 5352.9
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11783.87 .. NELBO:
11783.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5346.57 .. NELBO: 5346.61
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06515394005853979, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=56, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=56, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=56, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 64.76 .. Rec_loss: 12264.6 .. NELBO:
12329.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.79 .. Rec_loss: 5444.0 .. NELBO: 5450.79
*****
*****
Validation loss decreased (inf --> 10901.580078). Saving model ...
*****

```

```

*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.4 .. Rec_loss: 12249.36 .. NELBO:
12256.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5432.87 .. NELBO: 5433.25
*****
*****
Validation loss decreased (10901.580078 --> 10866.492188). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12212.24 .. NELBO:
12212.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5411.11 .. NELBO: 5411.17
*****
*****
Validation loss decreased (10866.492188 --> 10822.333984). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12144.76 .. NELBO:
12144.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.59 .. NELBO: 5379.61
*****
*****
Validation loss decreased (10822.333984 --> 10759.221680). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12051.74 .. NELBO:
12051.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5343.58 .. NELBO: 5343.59
*****
*****
Validation loss decreased (10759.221680 --> 10687.186523). Saving model ...
*****

```

```

*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11945.7 .. NELBO:
11945.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.14 .. NELBO: 5313.15
*****
*****
Validation loss decreased (10687.186523 --> 10626.294922). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11850.02 .. NELBO:
11850.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.41 .. NELBO: 5300.42
*****
*****
Validation loss decreased (10626.294922 --> 10600.845703). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11792.17 .. NELBO:
11792.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.71 .. NELBO: 5310.72
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11780.83 .. NELBO:
11780.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5333.45 .. NELBO: 5333.46
*****
*****
EarlyStopping counter: 2 out of 5
*****

```

```

*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.89 .. NELBO:
11791.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5350.12 .. NELBO: 5350.13
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.2 .. NELBO:
11796.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.2 .. NELBO: 5353.21
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11785.29 .. NELBO:
11785.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.75 .. NELBO: 5347.76
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 39
model: ETM(
  (t_drop): Dropout(p=0.05878505586091312, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=79, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
)

```

```

(mu_q_theta): Linear(in_features=800, out_features=79, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=79, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 906.39 .. Rec_loss: 12264.69 .. NELBO:
13171.08
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 27.98 .. Rec_loss: 5445.79 .. NELBO:
5473.77
*****
*****
Validation loss decreased (inf --> 10947.537109). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 37.51 .. Rec_loss: 12254.68 .. NELBO:
12292.19
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 11.07 .. Rec_loss: 5437.44 .. NELBO:
5448.51
*****
*****
Validation loss decreased (10947.537109 --> 10897.005859). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 22.77 .. Rec_loss: 12227.75 .. NELBO:
12250.52
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.49 .. Rec_loss: 5421.04 .. NELBO: 5430.53
*****
*****
Validation loss decreased (10897.005859 --> 10861.067383). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 16.7 .. Rec_loss: 12175.94 .. NELBO:
12192.64
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.54 .. Rec_loss: 5395.51 .. NELBO: 5400.05
*****
*****
Validation loss decreased (10861.067383 --> 10800.093750). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 8.12 .. Rec_loss: 12097.93 .. NELBO:
12106.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.32 .. Rec_loss: 5362.81 .. NELBO: 5365.13
*****
*****
Validation loss decreased (10800.093750 --> 10730.245117). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 4.33 .. Rec_loss: 12000.18 .. NELBO:
12004.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.41 .. Rec_loss: 5329.21 .. NELBO: 5330.62
*****
*****
Validation loss decreased (10730.245117 --> 10661.241211). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 2.67 .. Rec_loss: 11897.8 .. NELBO:
11900.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.91 .. Rec_loss: 5305.47 .. NELBO: 5306.38
*****
*****
Validation loss decreased (10661.241211 --> 10612.772461). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.73 .. Rec_loss: 11817.03 .. NELBO:
11818.76
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 5302.26 .. NELBO: 5302.85
*****
*****
Validation loss decreased (10612.772461 --> 10605.708984). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 11779.38 .. NELBO:
11780.5
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5319.66 .. NELBO: 5320.02
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 11781.8 .. NELBO:
11782.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5342.29 .. NELBO: 5342.48
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 11795.21 .. NELBO:
11795.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5354.04 .. NELBO: 5354.12
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 11793.87 .. NELBO:
11794.01
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5352.86 .. NELBO: 5352.9
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11780.73 .. NELBO:
11780.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.72 .. NELBO: 5345.74
*****
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05878505586091312, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=79, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=79, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=79, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1322.29 .. Rec_loss: 12264.12 .. NELBO:
13586.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 28.35 .. Rec_loss: 5445.54 .. NELBO:
5473.89
*****
*****
Validation loss decreased (inf --> 10947.769531). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 42.67 .. Rec_loss: 12254.19 .. NELBO:

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```

12296.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 21.73 .. Rec_loss: 5436.88 .. NELBO:
5458.61
*****
*****
Validation loss decreased (10947.769531 --> 10917.221680). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 44.91 .. Rec_loss: 12225.47 .. NELBO:
12270.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.93 .. Rec_loss: 5419.99 .. NELBO:
5438.92
*****
*****
Validation loss decreased (10917.221680 --> 10877.832031). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 36.31 .. Rec_loss: 12173.0 .. NELBO:
12209.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 13.38 .. Rec_loss: 5394.56 .. NELBO:
5407.94
*****
*****
Validation loss decreased (10877.832031 --> 10815.890625). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 26.97 .. Rec_loss: 12095.55 .. NELBO:
12122.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 11.3 .. Rec_loss: 5361.76 .. NELBO: 5373.06
*****
*****
Validation loss decreased (10815.890625 --> 10746.116211). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 23.46 .. Rec_loss: 11997.39 .. NELBO:
12020.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.32 .. Rec_loss: 5328.15 .. NELBO:
5338.47
*****
*****
Validation loss decreased (10746.116211 --> 10676.927734). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 21.35 .. Rec_loss: 11894.81 .. NELBO:
11916.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.42 .. Rec_loss: 5304.75 .. NELBO: 5314.17
*****
*****
Validation loss decreased (10676.927734 --> 10628.338867). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 19.09 .. Rec_loss: 11815.33 .. NELBO:
11834.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.91 .. Rec_loss: 5301.77 .. NELBO: 5309.68
*****
*****
Validation loss decreased (10628.338867 --> 10619.361328). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 15.76 .. Rec_loss: 11778.87 .. NELBO:
11794.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.96 .. Rec_loss: 5318.51 .. NELBO: 5324.47
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 11.95 .. Rec_loss: 11780.51 .. NELBO:
11792.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.6 .. Rec_loss: 5338.85 .. NELBO: 5343.45
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 9.74 .. Rec_loss: 11790.43 .. NELBO:
11800.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.19 .. Rec_loss: 5348.14 .. NELBO: 5352.33
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 9.19 .. Rec_loss: 11787.56 .. NELBO:
11796.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.14 .. Rec_loss: 5346.33 .. NELBO: 5350.47
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 9.26 .. Rec_loss: 11773.68 .. NELBO:
11782.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.12 .. Rec_loss: 5339.89 .. NELBO: 5344.01
*****
*****

```

EarlyStopping counter: 5 out of 5

Early stopping

model: ETM(

(t_drop): Dropout(p=0.05878505586091312, inplace=False)

(theta_act): Softplus(beta=1, threshold=20)

(rho): Linear(in_features=300, out_features=13198, bias=False)

(alphas): Linear(in_features=300, out_features=79, bias=False)

(q_theta): Sequential(

(0): Linear(in_features=13198, out_features=800, bias=True)

(1): Softplus(beta=1, threshold=20)

(2): Linear(in_features=800, out_features=800, bias=True)

(3): Softplus(beta=1, threshold=20)

)

(mu_q_theta): Linear(in_features=800, out_features=79, bias=True)

(logsigma_q_theta): Linear(in_features=800, out_features=79, bias=True)

)

Epoch---->1 .. LR: 0.005 .. KL_theta: 1102.54 .. Rec_loss: 12264.43 .. NELBO:
13366.97

VALIDATION .. LR: 0.005 .. KL_theta: 20.67 .. Rec_loss: 5445.23 .. NELBO: 5465.9

Validation loss decreased (inf --> 10931.804688). Saving model ...

Epoch---->2 .. LR: 0.005 .. KL_theta: 24.87 .. Rec_loss: 12253.13 .. NELBO:
12278.0

VALIDATION .. LR: 0.005 .. KL_theta: 5.23 .. Rec_loss: 5436.46 .. NELBO: 5441.69

Validation loss decreased (10931.804688 --> 10883.381836). Saving model ...

Epoch---->3 .. LR: 0.005 .. KL_theta: 10.47 .. Rec_loss: 12224.74 .. NELBO:
12235.21


```

VALIDATION .. LR: 0.005 .. KL_theta: 3.76 .. Rec_loss: 5419.37 .. NELBO: 5423.13
*****
*****
Validation loss decreased (10883.381836 --> 10846.261719). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 6.62 .. Rec_loss: 12171.0 .. NELBO:
12177.62
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.77 .. Rec_loss: 5392.78 .. NELBO: 5394.55
*****
*****
Validation loss decreased (10846.261719 --> 10789.100586). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 3.17 .. Rec_loss: 12090.31 .. NELBO:
12093.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 5359.2 .. NELBO: 5359.99
*****
*****
Validation loss decreased (10789.100586 --> 10719.994141). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 1.4 .. Rec_loss: 11990.15 .. NELBO:
11991.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5325.69 .. NELBO: 5326.11
*****
*****
Validation loss decreased (10719.994141 --> 10652.216797). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.82 .. Rec_loss: 11887.48 .. NELBO:
11888.3
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5303.53 .. NELBO: 5303.79
*****
*****
Validation loss decreased (10652.216797 --> 10607.581055). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 11810.42 .. NELBO:
11810.86
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5302.85 .. NELBO: 5302.94
*****
*****
Validation loss decreased (10607.581055 --> 10605.889648). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 11777.66 .. NELBO:
11777.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5321.94 .. NELBO: 5321.98
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11782.73 .. NELBO:
11782.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.27 .. NELBO: 5344.29
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11795.33 .. NELBO:
11795.38
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.71 .. NELBO: 5354.73
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.15 .. NELBO:
11793.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.69 .. NELBO: 5352.71
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.03 .. NELBO:
11779.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.47 .. NELBO: 5345.49
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 40
model: ETM(
  (t_drop): Dropout(p=0.04413623598327181, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 91.75 .. Rec_loss: 12264.09 .. NELBO:
12355.84

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.2 .. Rec_loss: 5444.21 .. NELBO: 5452.41
*****
*****
Validation loss decreased (inf --> 10904.821289). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.84 .. Rec_loss: 12249.7 .. NELBO:
12258.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5433.32 .. NELBO: 5433.79
*****
*****
Validation loss decreased (10904.821289 --> 10867.583984). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12213.76 .. NELBO:
12214.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.7 .. NELBO: 5411.77
*****
*****
Validation loss decreased (10867.583984 --> 10823.546875). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12147.09 .. NELBO:
12147.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5380.35 .. NELBO: 5380.37
*****
*****
Validation loss decreased (10823.546875 --> 10760.740234). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12053.5 .. NELBO:
12053.54

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.35 .. NELBO: 5344.37
*****
*****
Validation loss decreased (10760.740234 --> 10688.740234). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11946.95 .. NELBO:
11946.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.62 .. NELBO: 5313.64
*****
*****
Validation loss decreased (10688.740234 --> 10627.280273). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11851.08 .. NELBO:
11851.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.45 .. NELBO: 5300.47
*****
*****
Validation loss decreased (10627.280273 --> 10600.936523). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.24 .. NELBO:
11792.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.56 .. NELBO: 5310.58
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.1 .. NELBO:
11780.13

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.6 .. NELBO: 5333.62
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.79 .. NELBO:
11791.82
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.73 .. NELBO: 5350.75
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.79 .. NELBO:
11796.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.94 .. NELBO: 5353.96
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.15 .. NELBO:
11786.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.34 .. NELBO: 5348.36
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04413623598327181, inplace=False)
  (theta_act): Sigmoid()

```

```

(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=81, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 99.15 .. Rec_loss: 12264.02 .. NELBO:
12363.17
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.81 .. Rec_loss: 5443.86 .. NELBO: 5451.67
*****
*****
Validation loss decreased (inf --> 10903.333008). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.52 .. Rec_loss: 12248.14 .. NELBO:
12256.66
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 5431.99 .. NELBO: 5432.55
*****
*****
Validation loss decreased (10903.333008 --> 10865.085938). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 12209.15 .. NELBO:
12209.94
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.2 .. NELBO: 5409.29
*****
*****
Validation loss decreased (10865.085938 --> 10818.588867). Saving model ...
*****

```

```

*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12138.85 .. NELBO:
12138.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.78 .. NELBO: 5376.81
*****
*****
Validation loss decreased (10818.588867 --> 10753.630859). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12043.0 .. NELBO:
12043.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.47 .. NELBO: 5340.49
*****
*****
Validation loss decreased (10753.630859 --> 10680.987305). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11935.36 .. NELBO:
11935.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.88 .. NELBO: 5310.9
*****
*****
Validation loss decreased (10680.987305 --> 10621.811523). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11842.37 .. NELBO:
11842.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.25 .. NELBO: 5300.27
*****
*****
Validation loss decreased (10621.811523 --> 10600.543945). Saving model ...
*****

```

```

*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.55 .. NELBO:
11788.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.69 .. NELBO: 5312.71
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.85 .. NELBO:
11780.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.98 .. NELBO: 5336.0
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.23 .. NELBO:
11793.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.54 .. NELBO: 5351.56
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.3 .. NELBO:
11796.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.32 .. NELBO: 5353.34
*****
*****
EarlyStopping counter: 4 out of 5
*****

```

```

*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.46 .. NELBO:
11784.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.29 .. NELBO: 5347.31
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04413623598327181, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 98.89 .. Rec_loss: 12264.02 .. NELBO:
12362.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.42 .. Rec_loss: 5444.14 .. NELBO: 5452.56
*****
*****
Validation loss decreased (inf --> 10905.119141). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.04 .. Rec_loss: 12248.83 .. NELBO:
12257.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5432.3 .. NELBO: 5432.81
*****

```

```

*****
Validation loss decreased (10905.119141 --> 10865.618164). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 12210.02 .. NELBO:
12210.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.78 .. NELBO: 5409.87
*****
*****
Validation loss decreased (10865.618164 --> 10819.731445). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12140.75 .. NELBO:
12140.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.46 .. NELBO: 5377.49
*****
*****
Validation loss decreased (10819.731445 --> 10754.980469). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12045.05 .. NELBO:
12045.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.02 .. NELBO: 5341.04
*****
*****
Validation loss decreased (10754.980469 --> 10682.084961). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11937.47 .. NELBO:
11937.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.07 .. NELBO: 5311.09
*****

```



```

*****
Validation loss decreased (10682.084961 --> 10622.181641). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11842.49 .. NELBO:
11842.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.08 .. NELBO: 5300.1
*****
*****
Validation loss decreased (10622.181641 --> 10600.193359). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.35 .. NELBO:
11788.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.55 .. NELBO: 5312.57
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.59 .. NELBO:
11780.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.12 .. NELBO: 5336.14
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.13 .. NELBO:
11793.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.84 .. NELBO: 5351.86
*****

```

```

*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.19 .. NELBO:
11796.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.67 .. NELBO: 5353.69
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.46 .. NELBO:
11784.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.59 .. NELBO: 5347.61
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 41
model: ETM(
  (t_drop): Dropout(p=0.09260951820619535, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1029.87 .. Rec_loss: 12265.13 .. NELBO:
13295.0
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 19.4 .. Rec_loss: 5445.72 .. NELBO: 5465.12
*****
*****
Validation loss decreased (inf --> 10930.242188). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 21.82 .. Rec_loss: 12254.96 .. NELBO:
12276.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 5437.45 .. NELBO: 5439.24
*****
*****
Validation loss decreased (10930.242188 --> 10878.483398). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 3.44 .. Rec_loss: 12227.22 .. NELBO:
12230.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 5420.58 .. NELBO: 5421.69
*****
*****
Validation loss decreased (10878.483398 --> 10843.367188). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 1.93 .. Rec_loss: 12174.09 .. NELBO:
12176.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5393.87 .. NELBO: 5394.38
*****
*****
Validation loss decreased (10843.367188 --> 10788.757812). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.92 .. Rec_loss: 12092.87 .. NELBO:
12093.79
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5359.86 .. NELBO: 5360.07
*****
*****
Validation loss decreased (10788.757812 --> 10720.142578). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 11991.98 .. NELBO:
11992.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5325.78 .. NELBO: 5325.87
*****
*****
Validation loss decreased (10720.142578 --> 10651.741211). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 11887.91 .. NELBO:
11888.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5303.25 .. NELBO: 5303.31
*****
*****
Validation loss decreased (10651.741211 --> 10606.621094). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11809.65 .. NELBO:
11809.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5302.87 .. NELBO: 5302.92
*****
*****
Validation loss decreased (10606.621094 --> 10605.828125). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11777.29 .. NELBO:
11777.38
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5322.79 .. NELBO: 5322.83
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11783.68 .. NELBO:
11783.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5345.49 .. NELBO: 5345.52
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11797.01 .. NELBO:
11797.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.59 .. NELBO: 5355.61
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.43 .. NELBO:
11793.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.12 .. NELBO: 5353.14
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11778.49 .. NELBO:
11778.54
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.72 .. NELBO: 5345.74
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.09260951820619535, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 998.59 .. Rec_loss: 12265.09 .. NELBO:
13263.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 22.19 .. Rec_loss: 5445.65 .. NELBO:
5467.84
*****
*****
Validation loss decreased (inf --> 10935.677734). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 26.79 .. Rec_loss: 12254.37 .. NELBO:
12281.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.23 .. Rec_loss: 5437.23 .. NELBO: 5442.46
*****
*****
Validation loss decreased (10935.677734 --> 10884.913086). Saving model ...
*****
*****

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```

Epoch----->3 .. LR: 0.005 .. KL_theta: 10.99 .. Rec_loss: 12226.65 .. NELBO:
12237.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.08 .. Rec_loss: 5420.4 .. NELBO: 5424.48
*****
*****
Validation loss decreased (10884.913086 --> 10848.962891). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 8.06 .. Rec_loss: 12173.34 .. NELBO:
12181.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.74 .. Rec_loss: 5393.97 .. NELBO: 5396.71
*****
*****
Validation loss decreased (10848.962891 --> 10793.425781). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 5.62 .. Rec_loss: 12092.32 .. NELBO:
12097.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.88 .. Rec_loss: 5360.34 .. NELBO: 5362.22
*****
*****
Validation loss decreased (10793.425781 --> 10724.441406). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 3.79 .. Rec_loss: 11991.27 .. NELBO:
11995.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.31 .. Rec_loss: 5326.54 .. NELBO: 5327.85
*****
*****
Validation loss decreased (10724.441406 --> 10655.711914). Saving model ...
*****
*****

```

```
Epoch----->7 .. LR: 0.005 .. KL_theta: 2.7 .. Rec_loss: 11887.92 .. NELBO:
11890.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.95 .. Rec_loss: 5304.0 .. NELBO: 5304.95
*****
*****
Validation loss decreased (10655.711914 --> 10609.900391). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 1.95 .. Rec_loss: 11810.06 .. NELBO:
11812.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 5303.15 .. NELBO: 5303.79
*****
*****
Validation loss decreased (10609.900391 --> 10607.584961). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 1.31 .. Rec_loss: 11777.28 .. NELBO:
11778.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5322.4 .. NELBO: 5322.8
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 11782.93 .. NELBO:
11783.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5344.73 .. NELBO: 5344.94
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
```



```

Epoch---->11 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 11795.12 .. NELBO:
11795.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5354.91 .. NELBO: 5355.0
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 11793.15 .. NELBO:
11793.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.45 .. NELBO: 5352.48
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11779.45 .. NELBO:
11779.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5344.88 .. NELBO: 5344.93
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.09260951820619535, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1077.07 .. Rec_loss: 12264.44 .. NELBO:
13341.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 22.61 .. Rec_loss: 5445.34 .. NELBO:
5467.95
*****
*****
Validation loss decreased (inf --> 10935.903320). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 28.07 .. Rec_loss: 12253.9 .. NELBO:
12281.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.19 .. Rec_loss: 5437.28 .. NELBO: 5442.47
*****
*****
Validation loss decreased (10935.903320 --> 10884.931641). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 10.38 .. Rec_loss: 12226.47 .. NELBO:
12236.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.48 .. Rec_loss: 5420.19 .. NELBO: 5423.67
*****
*****
Validation loss decreased (10884.931641 --> 10847.333008). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 6.37 .. Rec_loss: 12172.07 .. NELBO:
12178.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.61 .. Rec_loss: 5393.24 .. NELBO: 5394.85
*****

```

```

*****
Validation loss decreased (10847.333008 --> 10789.710938). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.97 .. Rec_loss: 12090.13 .. NELBO:
12093.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 5359.31 .. NELBO: 5359.98
*****
*****
Validation loss decreased (10789.710938 --> 10719.956055). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.24 .. Rec_loss: 11988.73 .. NELBO:
11989.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5325.65 .. NELBO: 5325.96
*****
*****
Validation loss decreased (10719.956055 --> 10651.912109). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 11886.08 .. NELBO:
11886.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5303.68 .. NELBO: 5303.85
*****
*****
Validation loss decreased (10651.912109 --> 10607.703125). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 11808.66 .. NELBO:
11809.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5303.64 .. NELBO: 5303.74
*****

```

```

*****
Validation loss decreased (10607.703125 --> 10607.479492). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 11776.9 .. NELBO:
11777.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5323.4 .. NELBO: 5323.45
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11783.31 .. NELBO:
11783.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5345.72 .. NELBO: 5345.75
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11796.47 .. NELBO:
11796.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.62 .. NELBO: 5355.64
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.48 .. NELBO:
11793.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.07 .. NELBO: 5353.09
*****

```

```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.16 .. NELBO:
11779.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.6 .. NELBO: 5345.62
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 42
model: ETM(
  (t_drop): Dropout(p=0.05731474515169653, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=96, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=96, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=96, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 12263.73 .. NELBO:
12264.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.33 .. Rec_loss: 5442.93 .. NELBO: 5445.26
*****
*****
Validation loss decreased (inf --> 10890.509766). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 2.64 .. Rec_loss: 12242.82 .. NELBO:
12245.46
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5426.96 .. NELBO: 5426.99
*****
*****
Validation loss decreased (10890.509766 --> 10853.985352). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12192.13 .. NELBO:
12192.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5399.4 .. NELBO: 5399.57
*****
*****
Validation loss decreased (10853.985352 --> 10799.150391). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 12109.3 .. NELBO:
12109.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 5363.35 .. NELBO: 5364.11
*****
*****
Validation loss decreased (10799.150391 --> 10728.208008). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.48 .. Rec_loss: 12002.64 .. NELBO:
12006.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 5327.81 .. NELBO: 5328.46
*****
*****
Validation loss decreased (10728.208008 --> 10656.931641). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.01 .. Rec_loss: 11898.13 .. NELBO:
11899.14
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5304.54 .. NELBO: 5304.67
*****
*****
Validation loss decreased (10656.931641 --> 10609.340820). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11818.71 .. NELBO:
11819.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5303.01 .. NELBO: 5303.39
*****
*****
Validation loss decreased (10609.340820 --> 10606.784180). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 11783.8 .. NELBO:
11784.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5320.88 .. NELBO: 5321.07
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 11785.86 .. NELBO:
11786.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5341.44 .. NELBO: 5341.83
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 11794.07 .. NELBO:
11794.74
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 5350.39 .. NELBO: 5350.99
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.15 .. Rec_loss: 11788.67 .. NELBO:
11789.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.15 .. Rec_loss: 5347.52 .. NELBO: 5348.67
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.08 .. Rec_loss: 11774.29 .. NELBO:
11776.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.31 .. Rec_loss: 5340.68 .. NELBO: 5341.99
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05731474515169653, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=96, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=96, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=96, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12263.68 .. NELBO:

```



```
12264.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 5442.93 .. NELBO: 5444.02
*****
*****
Validation loss decreased (inf --> 10888.041992). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 12243.05 .. NELBO:
12244.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5427.05 .. NELBO: 5427.06
*****
*****
Validation loss decreased (10888.041992 --> 10854.114258). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 12192.32 .. NELBO:
12192.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5399.68 .. NELBO: 5400.05
*****
*****
Validation loss decreased (10854.114258 --> 10800.086914). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 12110.19 .. NELBO:
12110.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5364.06 .. NELBO: 5364.21
*****
*****
Validation loss decreased (10800.086914 --> 10728.433594). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 12005.53 .. NELBO:
```

```

12005.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.06 .. Rec_loss: 5328.02 .. NELBO: 5329.08
*****
*****
Validation loss decreased (10728.433594 --> 10658.157227). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.76 .. Rec_loss: 11898.66 .. NELBO:
11900.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5304.61 .. NELBO: 5304.88
*****
*****
Validation loss decreased (10658.157227 --> 10609.755859). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 11819.41 .. NELBO:
11819.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5302.83 .. NELBO: 5302.89
*****
*****
Validation loss decreased (10609.755859 --> 10605.790039). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 11783.67 .. NELBO:
11784.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5320.78 .. NELBO: 5320.88
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 11785.68 .. NELBO:

```

```

11785.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5341.44 .. NELBO: 5341.91
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 11794.51 .. NELBO:
11795.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 5350.6 .. NELBO: 5351.31
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.76 .. Rec_loss: 11789.28 .. NELBO:
11791.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.87 .. Rec_loss: 5348.21 .. NELBO: 5349.08
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.39 .. Rec_loss: 11775.02 .. NELBO:
11776.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.25 .. Rec_loss: 5341.08 .. NELBO: 5342.33
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
    (t_drop): Dropout(p=0.05731474515169653, inplace=False)

```

```

(theta_act): SELU()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=96, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): SELU()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=96, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=96, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 12263.63 .. NELBO:
12263.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.73 .. Rec_loss: 5442.95 .. NELBO: 5445.68
*****
*****
Validation loss decreased (inf --> 10891.352539). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 2.88 .. Rec_loss: 12242.95 .. NELBO:
12245.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5426.96 .. NELBO: 5426.98
*****
*****
Validation loss decreased (10891.352539 --> 10853.970703). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12191.8 .. NELBO:
12192.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5399.15 .. NELBO: 5399.33
*****
*****
Validation loss decreased (10853.970703 --> 10798.663086). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12108.19 .. NELBO:
12108.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.03 .. Rec_loss: 5362.78 .. NELBO: 5363.81
*****
*****
Validation loss decreased (10798.663086 --> 10727.625977). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.09 .. Rec_loss: 12001.1 .. NELBO:
12004.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 5327.66 .. NELBO: 5328.66
*****
*****
Validation loss decreased (10727.625977 --> 10657.321289). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.69 .. Rec_loss: 11897.18 .. NELBO:
11898.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 5304.12 .. NELBO: 5305.21
*****
*****
Validation loss decreased (10657.321289 --> 10610.430664). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 11816.7 .. NELBO:
11818.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5303.23 .. NELBO: 5303.34
*****
*****
Validation loss decreased (10610.430664 --> 10606.665039). Saving model ...

```

```

*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 11783.24 .. NELBO:
11783.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5321.42 .. NELBO: 5321.68
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 11785.7 .. NELBO:
11786.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5342.08 .. NELBO: 5342.42
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.77 .. Rec_loss: 11794.33 .. NELBO:
11795.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5350.85 .. NELBO: 5351.28
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 1.35 .. Rec_loss: 11788.61 .. NELBO:
11789.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.58 .. Rec_loss: 5346.78 .. NELBO: 5348.36
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 4.52 .. Rec_loss: 11773.37 .. NELBO:
11777.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 5339.9 .. NELBO: 5341.69
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 43
model: ETM(
  (t_drop): Dropout(p=0.046229183415471616, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=54, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=54, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=54, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 65.5 .. Rec_loss: 12264.16 .. NELBO:
12329.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.66 .. Rec_loss: 5443.81 .. NELBO: 5450.47
*****
*****
Validation loss decreased (inf --> 10900.949219). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.12 .. Rec_loss: 12248.44 .. NELBO:
12255.56
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 5432.15 .. NELBO: 5432.47
*****
*****
Validation loss decreased (10900.949219 --> 10864.935547). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 12210.07 .. NELBO:
12210.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.96 .. NELBO: 5410.03
*****
*****
Validation loss decreased (10864.935547 --> 10820.047852). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12142.13 .. NELBO:
12142.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.01 .. NELBO: 5378.03
*****
*****
Validation loss decreased (10820.047852 --> 10756.057617). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12047.55 .. NELBO:
12047.59
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.75 .. NELBO: 5341.77
*****
*****
Validation loss decreased (10756.057617 --> 10683.526367). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11939.67 .. NELBO:
11939.7
*****
*****
*****

```



```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.54 .. NELBO: 5311.56
*****
*****
Validation loss decreased (10683.526367 --> 10623.118164). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.18 .. NELBO:
11845.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.79 .. NELBO: 5299.81
*****
*****
Validation loss decreased (10623.118164 --> 10599.631836). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11789.07 .. NELBO:
11789.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5311.49 .. NELBO: 5311.52
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11779.47 .. NELBO:
11779.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5335.06 .. NELBO: 5335.1
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11792.72 .. NELBO:
11792.8
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5351.4 .. NELBO: 5351.43
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11796.25 .. NELBO:
11796.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.68 .. NELBO: 5353.7
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.86 .. NELBO:
11784.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.75 .. NELBO: 5347.76
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.046229183415471616, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=54, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=54, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=54, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 66.63 .. Rec_loss: 12263.83 .. NELBO:
12330.46
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.89 .. Rec_loss: 5443.17 .. NELBO: 5450.06
*****
*****
Validation loss decreased (inf --> 10900.132812). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.4 .. Rec_loss: 12245.67 .. NELBO:
12253.07
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5429.87 .. NELBO: 5430.23
*****
*****
Validation loss decreased (10900.132812 --> 10860.460938). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 12202.59 .. NELBO:
12203.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5405.63 .. NELBO: 5405.69
*****
*****
Validation loss decreased (10860.460938 --> 10811.395508). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12129.32 .. NELBO:
12129.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5372.23 .. NELBO: 5372.25
*****
*****
Validation loss decreased (10811.395508 --> 10744.504883). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12030.54 .. NELBO:
12030.58
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.18 .. NELBO: 5336.19
*****
*****
Validation loss decreased (10744.504883 --> 10672.385742). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11923.38 .. NELBO:
11923.41
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5308.42 .. NELBO: 5308.43
*****
*****
Validation loss decreased (10672.385742 --> 10616.871094). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11834.56 .. NELBO:
11834.59
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.5 .. NELBO: 5300.51
*****
*****
Validation loss decreased (10616.871094 --> 10601.021484). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.73 .. NELBO:
11786.76
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5314.69 .. NELBO: 5314.7
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.88 .. NELBO:
11781.91
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.53 .. NELBO: 5337.54
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.86 .. NELBO:
11794.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.4 .. NELBO: 5351.41
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.46 .. NELBO:
11794.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.17 .. NELBO: 5352.18
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.0 .. NELBO:
11783.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.02 .. NELBO: 5346.03
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.046229183415471616, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)

```

```

(alphas): Linear(in_features=300, out_features=54, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=54, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=54, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 78.28 .. Rec_loss: 12263.82 .. NELBO:
12342.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.62 .. Rec_loss: 5443.54 .. NELBO: 5451.16
*****
*****
Validation loss decreased (inf --> 10902.316406). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.1 .. Rec_loss: 12247.03 .. NELBO:
12255.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5431.47 .. NELBO: 5431.92
*****
*****
Validation loss decreased (10902.316406 --> 10863.837891). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12207.25 .. NELBO:
12207.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.65 .. NELBO: 5408.73
*****
*****
Validation loss decreased (10863.837891 --> 10817.459961). Saving model ...
*****
*****

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```

Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12136.96 .. NELBO:
12137.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.27 .. NELBO: 5376.29
*****
*****
Validation loss decreased (10817.459961 --> 10752.594727). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12040.91 .. NELBO:
12040.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5340.12 .. NELBO: 5340.13
*****
*****
Validation loss decreased (10752.594727 --> 10680.274414). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11933.29 .. NELBO:
11933.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.73 .. NELBO: 5310.74
*****
*****
Validation loss decreased (10680.274414 --> 10621.486328). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11840.38 .. NELBO:
11840.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.31 .. NELBO: 5300.32
*****
*****
Validation loss decreased (10621.486328 --> 10600.641602). Saving model ...
*****
*****

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```
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.75 .. NELBO:
11787.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.04 .. NELBO: 5313.05
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.53 .. NELBO:
11780.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.52 .. NELBO: 5336.53
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.38 .. NELBO:
11793.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.94 .. NELBO: 5351.95
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.2 .. NELBO:
11796.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.43 .. NELBO: 5353.44
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
```



```

Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.16 .. NELBO:
11784.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.17 .. NELBO: 5347.18
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 44
model: ETM(
  (t_drop): Dropout(p=0.05542261110857152, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1051.9 .. Rec_loss: 12264.26 .. NELBO:
13316.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.23 .. Rec_loss: 5445.45 .. NELBO:
5465.68
*****
*****
Validation loss decreased (inf --> 10931.373047). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 23.94 .. Rec_loss: 12253.75 .. NELBO:
12277.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.79 .. Rec_loss: 5436.75 .. NELBO: 5440.54

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```

*****
*****
Validation loss decreased (10931.373047 --> 10881.074219). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 7.32 .. Rec_loss: 12225.11 .. NELBO:
12232.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.46 .. Rec_loss: 5419.52 .. NELBO: 5421.98
*****
*****
Validation loss decreased (10881.074219 --> 10843.962891). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 4.33 .. Rec_loss: 12171.0 .. NELBO:
12175.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.04 .. Rec_loss: 5392.54 .. NELBO: 5393.58
*****
*****
Validation loss decreased (10843.962891 --> 10787.149414). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.72 .. Rec_loss: 12088.92 .. NELBO:
12090.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5358.5 .. NELBO: 5358.83
*****
*****
Validation loss decreased (10787.149414 --> 10717.664062). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 11986.64 .. NELBO:
11987.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5324.86 .. NELBO: 5324.97

```

```

*****
*****
Validation loss decreased (10717.664062 --> 10649.937500). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 11884.04 .. NELBO:
11884.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5303.24 .. NELBO: 5303.31
*****
*****
Validation loss decreased (10649.937500 --> 10606.605469). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11807.56 .. NELBO:
11807.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5303.75 .. NELBO: 5303.81
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11777.37 .. NELBO:
11777.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5323.85 .. NELBO: 5323.88
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11784.14 .. NELBO:
11784.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.92 .. NELBO: 5345.94

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.58 .. NELBO:
11796.63
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.36 .. NELBO: 5355.38
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.89 .. NELBO:
11792.94
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.59 .. NELBO: 5352.61
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05542261110857152, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1275.46 .. Rec_loss: 12264.12 .. NELBO:
13539.58
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.1 .. Rec_loss: 5444.96 .. NELBO: 5469.06
*****
*****
Validation loss decreased (inf --> 10938.112305). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 28.94 .. Rec_loss: 12252.49 .. NELBO:
12281.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.17 .. Rec_loss: 5436.18 .. NELBO: 5442.35
*****
*****
Validation loss decreased (10938.112305 --> 10884.715820). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 12.0 .. Rec_loss: 12223.36 .. NELBO:
12235.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.88 .. Rec_loss: 5418.47 .. NELBO: 5422.35
*****
*****
Validation loss decreased (10884.715820 --> 10844.697266). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 6.76 .. Rec_loss: 12167.4 .. NELBO:
12174.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.68 .. Rec_loss: 5391.0 .. NELBO: 5392.68
*****
*****
Validation loss decreased (10844.697266 --> 10785.362305). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.15 .. Rec_loss: 12084.09 .. NELBO:
12087.24
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.07 .. Rec_loss: 5356.77 .. NELBO: 5357.84
*****
*****
Validation loss decreased (10785.362305 --> 10715.681641). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.18 .. Rec_loss: 11982.01 .. NELBO:
11984.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.87 .. Rec_loss: 5323.39 .. NELBO: 5324.26
*****
*****
Validation loss decreased (10715.681641 --> 10648.535156). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.68 .. Rec_loss: 11879.88 .. NELBO:
11881.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 5302.69 .. NELBO: 5303.44
*****
*****
Validation loss decreased (10648.535156 --> 10606.876953). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.55 .. Rec_loss: 11805.41 .. NELBO:
11806.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 5304.46 .. NELBO: 5305.13
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.38 .. Rec_loss: 11777.36 .. NELBO:
11778.74
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 5325.12 .. NELBO: 5325.69
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.15 .. Rec_loss: 11785.4 .. NELBO:
11786.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5346.6 .. NELBO: 5347.05
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.89 .. Rec_loss: 11796.4 .. NELBO:
11797.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5355.15 .. NELBO: 5355.49
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 11791.96 .. NELBO:
11792.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5351.91 .. NELBO: 5352.17
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05542261110857152, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)

```

```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1052.68 .. Rec_loss: 12264.56 .. NELBO:
13317.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 19.04 .. Rec_loss: 5445.48 .. NELBO:
5464.52
*****
*****
Validation loss decreased (inf --> 10929.033203). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 24.95 .. Rec_loss: 12253.66 .. NELBO:
12278.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.92 .. Rec_loss: 5436.51 .. NELBO: 5444.43
*****
*****
Validation loss decreased (10929.033203 --> 10888.865234). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 16.43 .. Rec_loss: 12224.11 .. NELBO:
12240.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.28 .. Rec_loss: 5418.86 .. NELBO: 5426.14
*****
*****
Validation loss decreased (10888.865234 --> 10852.299805). Saving model ...
*****
*****

```



```

Epoch---->4 .. LR: 0.005 .. KL_theta: 14.14 .. Rec_loss: 12168.29 .. NELBO:
12182.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.06 .. Rec_loss: 5391.32 .. NELBO: 5396.38
*****
*****
Validation loss decreased (10852.299805 --> 10792.755859). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 9.55 .. Rec_loss: 12084.69 .. NELBO:
12094.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.0 .. Rec_loss: 5356.92 .. NELBO: 5359.92
*****
*****
Validation loss decreased (10792.755859 --> 10719.831055). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 5.67 .. Rec_loss: 11981.82 .. NELBO:
11987.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.75 .. Rec_loss: 5323.37 .. NELBO: 5325.12
*****
*****
Validation loss decreased (10719.831055 --> 10650.239258). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.28 .. Rec_loss: 11879.27 .. NELBO:
11882.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.01 .. Rec_loss: 5302.59 .. NELBO: 5303.6
*****
*****
Validation loss decreased (10650.239258 --> 10607.209961). Saving model ...
*****
*****

```

```
Epoch----->8 .. LR: 0.005 .. KL_theta: 1.92 .. Rec_loss: 11804.24 .. NELBO:
11806.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 5304.43 .. NELBO: 5304.97
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 1.01 .. Rec_loss: 11776.87 .. NELBO:
11777.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5325.29 .. NELBO: 5325.55
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11785.22 .. NELBO:
11785.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5346.88 .. NELBO: 5346.98
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 11796.27 .. NELBO:
11796.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5355.32 .. NELBO: 5355.36
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
```

```

Epoch---->12 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11791.67 .. NELBO:
11791.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.92 .. NELBO: 5351.94
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 45
model: ETM(
  (t_drop): Dropout(p=0.8132266140034801, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 23.91 .. Rec_loss: 12264.12 .. NELBO:
12288.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.88 .. Rec_loss: 5443.66 .. NELBO: 5444.54
*****
*****
Validation loss decreased (inf --> 10889.082031). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 12245.85 .. NELBO:
12247.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5429.08 .. NELBO: 5429.1
*****

```

```

*****
Validation loss decreased (10889.082031 --> 10858.189453). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12198.6 .. NELBO:
12198.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5403.11 .. NELBO: 5403.12
*****
*****
Validation loss decreased (10858.189453 --> 10806.246094). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12120.13 .. NELBO:
12120.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5368.3 .. NELBO: 5368.31
*****
*****
Validation loss decreased (10806.246094 --> 10736.625000). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12018.49 .. NELBO:
12018.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5332.02 .. NELBO: 5332.04
*****
*****
Validation loss decreased (10736.625000 --> 10664.079102). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11910.63 .. NELBO:
11910.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5306.18 .. NELBO: 5306.2
*****

```

```

*****
Validation loss decreased (10664.079102 --> 10612.392578). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11825.56 .. NELBO:
11825.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5301.88 .. NELBO: 5301.9
*****
*****
Validation loss decreased (10612.392578 --> 10603.800781). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11784.88 .. NELBO:
11784.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5318.86 .. NELBO: 5318.89
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11785.24 .. NELBO:
11785.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5341.04 .. NELBO: 5341.07
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11795.75 .. NELBO:
11795.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.3 .. NELBO: 5352.33
*****

```

```

*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11793.39 .. NELBO:
11793.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5351.05 .. NELBO: 5351.08
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11779.72 .. NELBO:
11779.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.26 .. NELBO: 5344.28
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.8132266140034801, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 23.14 .. Rec_loss: 12264.13 .. NELBO:
12287.27
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 5443.62 .. NELBO: 5444.28
*****
*****
Validation loss decreased (inf --> 10888.573242). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.32 .. Rec_loss: 12245.24 .. NELBO:
12246.56
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5428.74 .. NELBO: 5428.75
*****
*****
Validation loss decreased (10888.573242 --> 10857.500000). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12197.08 .. NELBO:
12197.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5402.23 .. NELBO: 5402.24
*****
*****
Validation loss decreased (10857.500000 --> 10804.483398). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12116.88 .. NELBO:
12116.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5366.98 .. NELBO: 5366.99
*****
*****
Validation loss decreased (10804.483398 --> 10733.978516). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 12013.24 .. NELBO:
12013.26
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5330.73 .. NELBO: 5330.74
*****
*****
Validation loss decreased (10733.978516 --> 10661.486328). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11905.58 .. NELBO:
11905.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5305.65 .. NELBO: 5305.67
*****
*****
Validation loss decreased (10661.486328 --> 10611.325195). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11822.28 .. NELBO:
11822.31
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5302.6 .. NELBO: 5302.62
*****
*****
Validation loss decreased (10611.325195 --> 10605.249023). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.93 .. NELBO:
11783.97
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5320.47 .. NELBO: 5320.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11785.79 .. NELBO:
11785.84
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.4 .. NELBO: 5342.42
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.38 .. NELBO:
11796.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.74 .. NELBO: 5352.76
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.08 .. NELBO:
11793.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.78 .. NELBO: 5350.8
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11778.77 .. NELBO:
11778.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.78 .. NELBO: 5343.8
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.8132266140034801, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(

```

```

    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 21.95 .. Rec_loss: 12264.13 .. NELBO:
12286.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 5443.78 .. NELBO: 5444.44
*****
*****
Validation loss decreased (inf --> 10888.862305). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.24 .. Rec_loss: 12245.85 .. NELBO:
12247.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5429.09 .. NELBO: 5429.11
*****
*****
Validation loss decreased (10888.862305 --> 10858.222656). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12198.39 .. NELBO:
12198.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5402.83 .. NELBO: 5402.84
*****
*****
Validation loss decreased (10858.222656 --> 10805.684570). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12118.9 .. NELBO:
12118.93

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5367.63 .. NELBO: 5367.64
*****
*****
Validation loss decreased (10805.684570 --> 10735.286133). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12015.41 .. NELBO:
12015.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5331.22 .. NELBO: 5331.24
*****
*****
Validation loss decreased (10735.286133 --> 10662.473633). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11907.4 .. NELBO:
11907.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5305.85 .. NELBO: 5305.87
*****
*****
Validation loss decreased (10662.473633 --> 10611.739258). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11822.74 .. NELBO:
11822.78
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5302.56 .. NELBO: 5302.58
*****
*****
Validation loss decreased (10611.739258 --> 10605.161133). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11783.92 .. NELBO:
11783.97

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5320.28 .. NELBO: 5320.31
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11785.6 .. NELBO:
11785.66
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5342.31 .. NELBO: 5342.34
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11796.09 .. NELBO:
11796.15
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.84 .. NELBO: 5352.87
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11793.02 .. NELBO:
11793.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5350.96 .. NELBO: 5350.99
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11778.72 .. NELBO:
11778.77

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.95 .. NELBO: 5343.97
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 46
model: ETM(
  (t_drop): Dropout(p=0.015349228821726204, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1372.31 .. Rec_loss: 12264.41 .. NELBO:
13636.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 22.86 .. Rec_loss: 5445.71 .. NELBO:
5468.57
*****
*****
Validation loss decreased (inf --> 10937.132812). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 31.47 .. Rec_loss: 12254.25 .. NELBO:
12285.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.47 .. Rec_loss: 5436.99 .. NELBO:
5449.46
*****

```

```

*****
Validation loss decreased (10937.132812 --> 10898.920898). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 25.62 .. Rec_loss: 12226.17 .. NELBO:
12251.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.01 .. Rec_loss: 5420.09 .. NELBO: 5432.1
*****
*****
Validation loss decreased (10898.920898 --> 10864.200195). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 22.78 .. Rec_loss: 12172.86 .. NELBO:
12195.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.85 .. Rec_loss: 5393.49 .. NELBO: 5402.34
*****
*****
Validation loss decreased (10864.200195 --> 10804.685547). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 16.33 .. Rec_loss: 12092.2 .. NELBO:
12108.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.95 .. Rec_loss: 5359.74 .. NELBO: 5365.69
*****
*****
Validation loss decreased (10804.685547 --> 10731.396484). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 11.08 .. Rec_loss: 11991.57 .. NELBO:
12002.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.06 .. Rec_loss: 5325.87 .. NELBO: 5329.93
*****

```

```

*****
Validation loss decreased (10731.396484 --> 10659.853516). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 7.51 .. Rec_loss: 11887.9 .. NELBO:
11895.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.74 .. Rec_loss: 5303.35 .. NELBO: 5306.09
*****
*****
Validation loss decreased (10659.853516 --> 10612.195312). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 5.07 .. Rec_loss: 11809.72 .. NELBO:
11814.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.75 .. Rec_loss: 5302.76 .. NELBO: 5304.51
*****
*****
Validation loss decreased (10612.195312 --> 10609.017578). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 3.14 .. Rec_loss: 11776.87 .. NELBO:
11780.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.01 .. Rec_loss: 5322.43 .. NELBO: 5323.44
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.8 .. Rec_loss: 11783.13 .. NELBO:
11784.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 5344.88 .. NELBO: 5345.42
*****

```

```

*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.95 .. Rec_loss: 11795.67 .. NELBO:
11796.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5354.74 .. NELBO: 5355.03
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 11792.49 .. NELBO:
11793.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5352.03 .. NELBO: 5352.24
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 11777.3 .. NELBO:
11777.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5344.56 .. NELBO: 5344.72
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.015349228821726204, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)

```



```

    (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1240.39 .. Rec_loss: 12264.35 .. NELBO:
13504.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.28 .. Rec_loss: 5445.89 .. NELBO:
5469.17
*****
*****
Validation loss decreased (inf --> 10938.345703). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 28.85 .. Rec_loss: 12254.62 .. NELBO:
12283.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.66 .. Rec_loss: 5437.1 .. NELBO: 5444.76
*****
*****
Validation loss decreased (10938.345703 --> 10889.538086). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 14.58 .. Rec_loss: 12226.17 .. NELBO:
12240.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.14 .. Rec_loss: 5419.94 .. NELBO: 5425.08
*****
*****
Validation loss decreased (10889.538086 --> 10850.163086). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 9.01 .. Rec_loss: 12171.7 .. NELBO:
12180.71
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.79 .. Rec_loss: 5393.09 .. NELBO: 5395.88
*****
*****
Validation loss decreased (10850.163086 --> 10791.757812). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 4.91 .. Rec_loss: 12089.54 .. NELBO:
12094.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.65 .. Rec_loss: 5359.0 .. NELBO: 5360.65
*****
*****
Validation loss decreased (10791.757812 --> 10721.301758). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.04 .. Rec_loss: 11987.31 .. NELBO:
11990.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 5325.16 .. NELBO: 5326.27
*****
*****
Validation loss decreased (10721.301758 --> 10652.537109). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 2.09 .. Rec_loss: 11883.56 .. NELBO:
11885.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 5303.48 .. NELBO: 5304.32
*****
*****
Validation loss decreased (10652.537109 --> 10608.630859). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.59 .. Rec_loss: 11807.0 .. NELBO:
11808.59
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 5304.18 .. NELBO: 5304.8
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 11777.09 .. NELBO:
11778.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5324.34 .. NELBO: 5324.73
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 11784.44 .. NELBO:
11785.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5346.16 .. NELBO: 5346.41
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11796.12 .. NELBO:
11796.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5355.21 .. NELBO: 5355.35
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 11791.8 .. NELBO:
11792.05
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5352.16 .. NELBO: 5352.23
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.015349228821726204, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1085.21 .. Rec_loss: 12264.22 .. NELBO:
13349.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 22.45 .. Rec_loss: 5445.2 .. NELBO: 5467.65
*****
*****
Validation loss decreased (inf --> 10935.302734). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 28.23 .. Rec_loss: 12252.93 .. NELBO:
12281.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.41 .. Rec_loss: 5436.26 .. NELBO: 5443.67
*****
*****
Validation loss decreased (10935.302734 --> 10887.327148). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 14.69 .. Rec_loss: 12223.94 .. NELBO:

```

```
12238.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.23 .. Rec_loss: 5418.11 .. NELBO: 5424.34
*****
*****
Validation loss decreased (10887.327148 --> 10848.692383). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 11.74 .. Rec_loss: 12166.25 .. NELBO:
12177.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.62 .. Rec_loss: 5390.03 .. NELBO: 5394.65
*****
*****
Validation loss decreased (10848.692383 --> 10789.295898). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 8.74 .. Rec_loss: 12081.12 .. NELBO:
12089.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.52 .. Rec_loss: 5355.28 .. NELBO: 5358.8
*****
*****
Validation loss decreased (10789.295898 --> 10717.597656). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 6.64 .. Rec_loss: 11977.44 .. NELBO:
11984.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.67 .. Rec_loss: 5322.02 .. NELBO: 5324.69
*****
*****
Validation loss decreased (10717.597656 --> 10649.389648). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.06 .. Rec_loss: 11875.59 .. NELBO:
```

```
11880.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.02 .. Rec_loss: 5302.11 .. NELB0: 5304.13
*****
*****
Validation loss decreased (10649.389648 --> 10608.256836). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.8 .. Rec_loss: 11802.04 .. NELB0:
11805.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.47 .. Rec_loss: 5304.87 .. NELB0: 5306.34
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.78 .. Rec_loss: 11776.57 .. NELB0:
11779.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 5325.75 .. NELB0: 5326.77
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.88 .. Rec_loss: 11785.0 .. NELB0:
11786.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 5346.68 .. NELB0: 5347.34
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.22 .. Rec_loss: 11795.88 .. NELB0:
```

```

11797.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5354.53 .. NELBO: 5354.95
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 11790.31 .. NELBO:
11791.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5350.91 .. NELBO: 5351.18
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 47
model: ETM(
  (t_drop): Dropout(p=0.055126276259664486, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.8 .. Rec_loss: 12264.19 .. NELBO:
12350.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.09 .. Rec_loss: 5444.36 .. NELBO: 5452.45
*****
*****

```

```

Validation loss decreased (inf --> 10904.900391). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.8 .. Rec_loss: 12249.57 .. NELBO:
12258.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5432.99 .. NELBO: 5433.43
*****
*****
Validation loss decreased (10904.900391 --> 10866.876953). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12211.9 .. NELBO:
12212.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.9 .. NELBO: 5410.98
*****
*****
Validation loss decreased (10866.876953 --> 10821.954102). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12143.97 .. NELBO:
12144.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.0 .. NELBO: 5379.03
*****
*****
Validation loss decreased (10821.954102 --> 10758.052734). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12048.8 .. NELBO:
12048.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.72 .. NELBO: 5342.74
*****
*****

```



```

Validation loss decreased (10758.052734 --> 10685.479492). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11941.94 .. NELBO:
11941.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.4 .. NELBO: 5312.42
*****
*****
Validation loss decreased (10685.479492 --> 10624.841797). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11846.36 .. NELBO:
11846.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.45 .. NELBO: 5300.47
*****
*****
Validation loss decreased (10624.841797 --> 10600.947266). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.53 .. NELBO:
11790.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.84 .. NELBO: 5311.86
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.33 .. NELBO:
11780.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.09 .. NELBO: 5335.11
*****
*****

```

```

EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.81 .. NELBO:
11792.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.36 .. NELBO: 5351.38
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.15 .. NELBO:
11796.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.77 .. NELBO: 5353.79
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.24 .. NELBO:
11785.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.86 .. NELBO: 5347.88
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.055126276259664486, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
)

```

```

)
(mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 80.84 .. Rec_loss: 12264.4 .. NELBO:
12345.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.86 .. Rec_loss: 5444.13 .. NELBO: 5451.99
*****
*****
Validation loss decreased (inf --> 10903.966797). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.45 .. Rec_loss: 12248.37 .. NELBO:
12256.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5431.69 .. NELBO: 5432.07
*****
*****
Validation loss decreased (10903.966797 --> 10864.128906). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 12208.12 .. NELBO:
12208.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5408.32 .. NELBO: 5408.38
*****
*****
Validation loss decreased (10864.128906 --> 10816.765625). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12136.49 .. NELBO:
12136.59
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.31 .. NELBO: 5375.33
*****
*****
Validation loss decreased (10816.765625 --> 10750.663086). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12039.36 .. NELBO:
12039.41
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.78 .. NELBO: 5338.8
*****
*****
Validation loss decreased (10750.663086 --> 10677.593750). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11931.04 .. NELBO:
11931.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.7 .. NELBO: 5309.72
*****
*****
Validation loss decreased (10677.593750 --> 10619.444336). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11838.8 .. NELBO:
11838.84
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.27 .. NELBO: 5300.29
*****
*****
Validation loss decreased (10619.444336 --> 10600.572266). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.82 .. NELBO:
11787.86
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.84 .. NELBO: 5313.86
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.83 .. NELBO:
11781.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.16 .. NELBO: 5337.18
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.12 .. NELBO:
11794.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.87 .. NELBO: 5351.89
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.65 .. NELBO:
11795.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.95 .. NELBO: 5352.97
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.43 .. NELBO:
11783.47
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.63 .. NELBO: 5346.65
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.055126276259664486, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 90.17 .. Rec_loss: 12264.13 .. NELBO:
12354.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.5 .. Rec_loss: 5444.28 .. NELBO: 5452.78
*****
*****
Validation loss decreased (inf --> 10905.555664). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.06 .. Rec_loss: 12249.17 .. NELBO:
12258.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5432.57 .. NELBO: 5432.98
*****
*****
Validation loss decreased (10905.555664 --> 10865.951172). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12210.6 .. NELBO:
12211.19
*****

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```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.14 .. NELBO: 5410.21
*****
*****
Validation loss decreased (10865.951172 --> 10820.431641). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12142.17 .. NELBO:
12142.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.9 .. NELBO: 5377.93
*****
*****
Validation loss decreased (10820.431641 --> 10755.849609). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12045.9 .. NELBO:
12045.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.53 .. NELBO: 5341.55
*****
*****
Validation loss decreased (10755.849609 --> 10683.098633). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11938.14 .. NELBO:
11938.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.57 .. NELBO: 5311.59
*****
*****
Validation loss decreased (10683.098633 --> 10623.184570). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11843.73 .. NELBO:
11843.77
*****

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```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELBO: 5300.39
*****
*****
Validation loss decreased (10623.184570 --> 10600.768555). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.23 .. NELBO:
11789.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.43 .. NELBO: 5312.45
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.75 .. NELBO:
11780.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.73 .. NELBO: 5335.75
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.08 .. NELBO:
11793.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.53 .. NELBO: 5351.55
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.37 .. NELBO:
11796.41
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.54 .. NELBO: 5353.56
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.15 .. NELBO:
11785.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.52 .. NELBO: 5347.54
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 48
model: ETM(
  (t_drop): Dropout(p=0.02997893857525457, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 92.0 .. Rec_loss: 12264.14 .. NELBO:
12356.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.3 .. Rec_loss: 5444.06 .. NELBO: 5452.36
*****
*****
Validation loss decreased (inf --> 10904.730469). Saving model ...
*****

```

```

*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.95 .. Rec_loss: 12248.23 .. NELBO:
12257.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5431.7 .. NELBO: 5432.16
*****
*****
Validation loss decreased (10904.730469 --> 10864.336914). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12207.58 .. NELBO:
12208.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.31 .. NELBO: 5408.39
*****
*****
Validation loss decreased (10864.336914 --> 10816.766602). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12135.89 .. NELBO:
12136.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.31 .. NELBO: 5375.34
*****
*****
Validation loss decreased (10816.766602 --> 10750.686523). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12038.22 .. NELBO:
12038.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.83 .. NELBO: 5338.85
*****
*****
Validation loss decreased (10750.686523 --> 10677.704102). Saving model ...
*****

```

```

*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11929.98 .. NELBO:
11930.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.89 .. NELBO: 5309.91
*****
*****
Validation loss decreased (10677.704102 --> 10619.810547). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11837.96 .. NELBO:
11838.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.68 .. NELBO: 5300.7
*****
*****
Validation loss decreased (10619.810547 --> 10601.405273). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.48 .. NELBO:
11787.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.47 .. NELBO: 5314.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.07 .. NELBO:
11782.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.79 .. NELBO: 5337.81
*****
*****
EarlyStopping counter: 2 out of 5
*****

```

```

*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.48 .. NELBO:
11794.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.26 .. NELBO: 5352.28
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.0 .. NELBO:
11796.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.09 .. NELBO: 5353.11
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.68 .. NELBO:
11783.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.64 .. NELBO: 5346.66
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.02997893857525457, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)

```

```

(logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.57 .. Rec_loss: 12264.36 .. NELBO:
12350.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.07 .. Rec_loss: 5444.5 .. NELBO: 5452.57
*****
*****
Validation loss decreased (inf --> 10905.130859). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.66 .. Rec_loss: 12249.77 .. NELBO:
12258.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5432.67 .. NELBO: 5433.11
*****
*****
Validation loss decreased (10905.130859 --> 10866.216797). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12210.83 .. NELBO:
12211.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.86 .. NELBO: 5409.94
*****
*****
Validation loss decreased (10866.216797 --> 10819.864258). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12140.77 .. NELBO:
12140.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.18 .. NELBO: 5377.21
*****

```

```

*****
Validation loss decreased (10819.864258 --> 10754.416016). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12044.35 .. NELBO:
12044.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.56 .. NELBO: 5340.58
*****
*****
Validation loss decreased (10754.416016 --> 10681.165039). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11935.62 .. NELBO:
11935.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.86 .. NELBO: 5310.88
*****
*****
Validation loss decreased (10681.165039 --> 10621.751953). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.97 .. NELBO:
11842.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.47 .. NELBO: 5300.49
*****
*****
Validation loss decreased (10621.751953 --> 10600.988281). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.93 .. NELBO:
11788.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.4 .. NELBO: 5313.42
*****

```

```

*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.72 .. NELBO:
11781.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.75 .. NELBO: 5336.77
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.92 .. NELBO:
11793.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.91 .. NELBO: 5351.93
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.36 .. NELBO:
11796.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.32 .. NELBO: 5353.34
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.25 .. NELBO:
11784.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.11 .. NELBO: 5347.13
*****

```

```

*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.02997893857525457, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 85.73 .. Rec_loss: 12264.25 .. NELB0:
12349.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.82 .. Rec_loss: 5444.54 .. NELB0: 5452.36
*****
*****
Validation loss decreased (inf --> 10904.733398). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.4 .. Rec_loss: 12250.45 .. NELB0:
12258.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5433.58 .. NELB0: 5434.01
*****
*****
Validation loss decreased (10904.733398 --> 10868.009766). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12213.65 .. NELB0:
12214.25
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.92 .. NELBO: 5411.99
*****
*****
Validation loss decreased (10868.009766 --> 10823.976562). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12146.44 .. NELBO:
12146.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5380.24 .. NELBO: 5380.26
*****
*****
Validation loss decreased (10823.976562 --> 10760.521484). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12052.26 .. NELBO:
12052.31
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.85 .. NELBO: 5343.87
*****
*****
Validation loss decreased (10760.521484 --> 10687.739258). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11944.02 .. NELBO:
11944.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.17 .. NELBO: 5313.19
*****
*****
Validation loss decreased (10687.739258 --> 10626.377930). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.67 .. NELBO:
11847.7
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.74 .. NELB0: 5300.76
*****
*****
Validation loss decreased (10626.377930 --> 10601.510742). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.12 .. NELB0:
11791.15
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.79 .. NELB0: 5311.81
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.33 .. NELB0:
11780.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.04 .. NELB0: 5335.06
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.72 .. NELB0:
11792.76
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.4 .. NELB0: 5351.42
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.4 .. NELB0:
11796.44
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.83 .. NELBO: 5353.85
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.81 .. NELBO:
11785.84
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.87 .. NELBO: 5347.89
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 49
model: ETM(
  (t_drop): Dropout(p=0.08914007511273868, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1288.39 .. Rec_loss: 12263.91 .. NELBO:
13552.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 29.63 .. Rec_loss: 5445.86 .. NELBO:
5475.49
*****
*****
Validation loss decreased (inf --> 10950.979492). Saving model ...
*****
*****

```

```

Epoch----->2 .. LR: 0.005 .. KL_theta: 39.87 .. Rec_loss: 12254.5 .. NELBO:
12294.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.34 .. Rec_loss: 5437.27 .. NELBO:
5449.61
*****
*****
Validation loss decreased (10950.979492 --> 10899.209961). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 25.76 .. Rec_loss: 12226.83 .. NELBO:
12252.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.22 .. Rec_loss: 5420.83 .. NELBO:
5431.05
*****
*****
Validation loss decreased (10899.209961 --> 10862.101562). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 19.58 .. Rec_loss: 12174.78 .. NELBO:
12194.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.45 .. Rec_loss: 5394.99 .. NELBO: 5401.44
*****
*****
Validation loss decreased (10862.101562 --> 10802.869141). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 12.87 .. Rec_loss: 12095.85 .. NELBO:
12108.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.73 .. Rec_loss: 5361.9 .. NELBO: 5366.63
*****
*****
Validation loss decreased (10802.869141 --> 10733.263672). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 9.91 .. Rec_loss: 11996.76 .. NELBO:
12006.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.88 .. Rec_loss: 5328.21 .. NELBO: 5332.09
*****
*****
Validation loss decreased (10733.263672 --> 10664.193359). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 8.16 .. Rec_loss: 11893.85 .. NELBO:
11902.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.44 .. Rec_loss: 5305.05 .. NELBO: 5308.49
*****
*****
Validation loss decreased (10664.193359 --> 10616.993164). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 7.34 .. Rec_loss: 11813.94 .. NELBO:
11821.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.91 .. Rec_loss: 5302.95 .. NELBO: 5305.86
*****
*****
Validation loss decreased (10616.993164 --> 10611.718750). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 6.01 .. Rec_loss: 11778.6 .. NELBO:
11784.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.27 .. Rec_loss: 5320.89 .. NELBO: 5323.16
*****
*****
EarlyStopping counter: 1 out of 5

```

```

*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 4.69 .. Rec_loss: 11782.01 .. NELBO:
11786.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.69 .. Rec_loss: 5342.71 .. NELBO: 5344.4
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 3.52 .. Rec_loss: 11794.38 .. NELBO:
11797.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 5353.07 .. NELBO: 5354.36
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 2.64 .. Rec_loss: 11792.0 .. NELBO:
11794.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 5351.06 .. NELBO: 5352.15
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 2.28 .. Rec_loss: 11778.05 .. NELBO:
11780.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 5343.9 .. NELBO: 5344.9
*****
*****
EarlyStopping counter: 5 out of 5

```

Early stopping

```
model: ETM(
  (t_drop): Dropout(p=0.08914007511273868, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1124.92 .. Rec_loss: 12264.65 .. NELBO:
13389.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.2 .. Rec_loss: 5445.98 .. NELBO: 5471.18
*****
*****
Validation loss decreased (inf --> 10942.363281). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 29.88 .. Rec_loss: 12255.4 .. NELBO:
12285.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.56 .. Rec_loss: 5437.94 .. NELBO: 5443.5
*****
*****
Validation loss decreased (10942.363281 --> 10887.008789). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 12.31 .. Rec_loss: 12228.76 .. NELBO:
12241.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.28 .. Rec_loss: 5421.62 .. NELBO: 5426.9
```

```

*****
*****
Validation loss decreased (10887.008789 --> 10853.802734). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 10.16 .. Rec_loss: 12177.15 .. NELBO:
12187.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.32 .. Rec_loss: 5395.52 .. NELBO: 5398.84
*****
*****
Validation loss decreased (10853.802734 --> 10797.680664). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 6.05 .. Rec_loss: 12097.38 .. NELBO:
12103.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.9 .. Rec_loss: 5361.87 .. NELBO: 5363.77
*****
*****
Validation loss decreased (10797.680664 --> 10727.532227). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.61 .. Rec_loss: 11996.73 .. NELBO:
12000.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.08 .. Rec_loss: 5327.63 .. NELBO: 5328.71
*****
*****
Validation loss decreased (10727.532227 --> 10657.426758). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 2.1 .. Rec_loss: 11892.15 .. NELBO:
11894.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 5304.37 .. NELBO: 5305.02

```



```

*****
*****
Validation loss decreased (10657.426758 --> 10610.042969). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.24 .. Rec_loss: 11811.99 .. NELBO:
11813.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5302.97 .. NELBO: 5303.35
*****
*****
Validation loss decreased (10610.042969 --> 10606.706055). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 11777.7 .. NELBO:
11778.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5322.27 .. NELBO: 5322.48
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 11783.19 .. NELBO:
11783.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5345.18 .. NELBO: 5345.28
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 11796.71 .. NELBO:
11796.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5355.74 .. NELBO: 5355.78

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11794.55 .. NELBO:
11794.62
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.4 .. NELBO: 5353.42
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.6 .. NELBO:
11779.64
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.83 .. NELBO: 5345.85
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.08914007511273868, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1575.54 .. Rec_loss: 12264.4 .. NELBO:
13839.94
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.37 .. Rec_loss: 5445.69 .. NELBO:
5471.06
*****
*****
Validation loss decreased (inf --> 10942.108398). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 32.38 .. Rec_loss: 12254.34 .. NELBO:
12286.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.19 .. Rec_loss: 5437.17 .. NELBO: 5446.36
*****
*****
Validation loss decreased (10942.108398 --> 10892.720703). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 19.4 .. Rec_loss: 12226.57 .. NELBO:
12245.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.19 .. Rec_loss: 5420.35 .. NELBO: 5427.54
*****
*****
Validation loss decreased (10892.720703 --> 10855.064453). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 13.52 .. Rec_loss: 12172.97 .. NELBO:
12186.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.41 .. Rec_loss: 5393.85 .. NELBO: 5398.26
*****
*****
Validation loss decreased (10855.064453 --> 10796.522461). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 8.76 .. Rec_loss: 12092.42 .. NELBO:
12101.18
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.15 .. Rec_loss: 5360.12 .. NELBO: 5363.27
*****
*****
Validation loss decreased (10796.522461 --> 10726.543945). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 6.29 .. Rec_loss: 11991.65 .. NELBO:
11997.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.36 .. Rec_loss: 5326.22 .. NELBO: 5328.58
*****
*****
Validation loss decreased (10726.543945 --> 10657.159180). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.86 .. Rec_loss: 11888.41 .. NELBO:
11893.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 5303.67 .. NELBO: 5305.52
*****
*****
Validation loss decreased (10657.159180 --> 10611.028320). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.68 .. Rec_loss: 11809.27 .. NELBO:
11812.95
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.33 .. Rec_loss: 5303.06 .. NELBO: 5304.39
*****
*****
Validation loss decreased (10611.028320 --> 10608.777344). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.73 .. Rec_loss: 11776.68 .. NELBO:
11779.41
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.92 .. Rec_loss: 5322.73 .. NELBO: 5323.65
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.82 .. Rec_loss: 11783.06 .. NELBO:
11784.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 5345.3 .. NELBO: 5345.92
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.25 .. Rec_loss: 11795.51 .. NELBO:
11796.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5355.32 .. NELBO: 5355.71
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 11792.16 .. NELBO:
11792.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5352.68 .. NELBO: 5352.92
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 11778.48 .. NELBO:
11778.94
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5345.07 .. NELBO: 5345.22
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 50
model: ETM(
  (t_drop): Dropout(p=0.05300681002765519, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 85.06 .. Rec_loss: 12263.81 .. NELBO:
12348.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.34 .. Rec_loss: 5443.9 .. NELBO: 5451.24
*****
*****
Validation loss decreased (inf --> 10902.497070). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.08 .. Rec_loss: 12247.84 .. NELBO:
12255.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5431.89 .. NELBO: 5432.37
*****
*****
Validation loss decreased (10902.497070 --> 10864.724609). Saving model ...
*****

```

```

*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12209.05 .. NELBO:
12209.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.42 .. NELBO: 5409.5
*****
*****
Validation loss decreased (10864.724609 --> 10818.986328). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12139.57 .. NELBO:
12139.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.28 .. NELBO: 5377.31
*****
*****
Validation loss decreased (10818.986328 --> 10754.622070). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12044.29 .. NELBO:
12044.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.06 .. NELBO: 5341.08
*****
*****
Validation loss decreased (10754.622070 --> 10682.168945). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.84 .. NELBO:
11936.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.31 .. NELBO: 5311.33
*****
*****
Validation loss decreased (10682.168945 --> 10622.660156). Saving model ...
*****

```

```

*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11843.03 .. NELBO:
11843.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.31 .. NELBO: 5300.33
*****
*****
Validation loss decreased (10622.660156 --> 10600.656250). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.88 .. NELBO:
11788.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.52 .. NELBO: 5312.54
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.77 .. NELBO:
11780.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.86 .. NELBO: 5335.88
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.07 .. NELBO:
11793.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.55 .. NELBO: 5351.57
*****
*****
EarlyStopping counter: 3 out of 5
*****

```



```

*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.59 .. NELBO:
11796.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.39 .. NELBO: 5353.41
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.69 .. NELBO:
11784.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.28 .. NELBO: 5347.3
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05300681002765519, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 87.4 .. Rec_loss: 12264.5 .. NELBO:
12351.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.52 .. Rec_loss: 5444.45 .. NELBO: 5452.97
*****

```

```

*****
Validation loss decreased (inf --> 10905.926758). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.18 .. Rec_loss: 12249.5 .. NELBO:
12258.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5432.8 .. NELBO: 5433.24
*****
*****
Validation loss decreased (10905.926758 --> 10866.472656). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12211.27 .. NELBO:
12211.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.73 .. NELBO: 5410.8
*****
*****
Validation loss decreased (10866.472656 --> 10821.607422). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12143.67 .. NELBO:
12143.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.95 .. NELBO: 5378.98
*****
*****
Validation loss decreased (10821.607422 --> 10757.955078). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12049.08 .. NELBO:
12049.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.79 .. NELBO: 5342.81
*****

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```

*****
Validation loss decreased (10757.955078 --> 10685.617188). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11942.61 .. NELBO:
11942.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.51 .. NELBO: 5312.53
*****
*****
Validation loss decreased (10685.617188 --> 10625.048828). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11846.95 .. NELBO:
11846.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.44 .. NELBO: 5300.46
*****
*****
Validation loss decreased (10625.048828 --> 10600.919922). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.69 .. NELBO:
11790.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.62 .. NELBO: 5311.64
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.91 .. NELBO:
11779.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.88 .. NELBO: 5334.9
*****

```

```

*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.14 .. NELBO:
11792.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.46 .. NELBO: 5351.48
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.48 .. NELBO:
11796.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.15 .. NELBO: 5354.17
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.14 .. NELBO:
11786.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.32 .. NELBO: 5348.34
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05300681002765519, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)

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```

    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 94.47 .. Rec_loss: 12264.26 .. NELBO:
12358.73
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.25 .. Rec_loss: 5444.18 .. NELBO: 5452.43
*****
*****
Validation loss decreased (inf --> 10904.867188). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.87 .. Rec_loss: 12249.34 .. NELBO:
12258.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5432.89 .. NELBO: 5433.37
*****
*****
Validation loss decreased (10904.867188 --> 10866.742188). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 12211.84 .. NELBO:
12212.53
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.64 .. NELBO: 5410.72
*****
*****
Validation loss decreased (10866.742188 --> 10821.425781). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12143.02 .. NELBO:
12143.14
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.51 .. NELBO: 5378.53
*****
*****
Validation loss decreased (10821.425781 --> 10757.069336). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12047.94 .. NELBO:
12047.98
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.1 .. NELBO: 5342.12
*****
*****
Validation loss decreased (10757.069336 --> 10684.240234). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11940.72 .. NELBO:
11940.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.89 .. NELBO: 5311.91
*****
*****
Validation loss decreased (10684.240234 --> 10623.822266). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.71 .. NELBO:
11845.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.3 .. NELBO: 5300.32
*****
*****
Validation loss decreased (10623.822266 --> 10600.634766). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.8 .. NELBO:
11789.83
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.06 .. NELB0: 5312.08
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.11 .. NELB0:
11781.14
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.3 .. NELB0: 5335.32
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.03 .. NELB0:
11793.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.23 .. NELB0: 5351.25
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.35 .. NELB0:
11796.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.37 .. NELB0: 5353.39
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.03 .. NELB0:
11785.06
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.41 .. NELBO: 5347.43
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 51
model: ETM(
  (t_drop): Dropout(p=0.045539232334743024, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=57, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=57, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=57, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1012.26 .. Rec_loss: 12264.45 .. NELBO:
13276.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 28.05 .. Rec_loss: 5445.46 .. NELBO:
5473.51
*****
*****
Validation loss decreased (inf --> 10947.027344). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 35.32 .. Rec_loss: 12254.11 .. NELBO:
12289.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.83 .. Rec_loss: 5437.18 .. NELBO: 5447.01
*****
*****
Validation loss decreased (10947.027344 --> 10894.009766). Saving model ...
*****
*****

```



```

Epoch----->3 .. LR: 0.005 .. KL_theta: 20.43 .. Rec_loss: 12226.67 .. NELBO:
12247.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.01 .. Rec_loss: 5420.43 .. NELBO: 5429.44
*****
*****
Validation loss decreased (10894.009766 --> 10858.874023). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 17.16 .. Rec_loss: 12173.83 .. NELBO:
12190.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.29 .. Rec_loss: 5393.97 .. NELBO: 5400.26
*****
*****
Validation loss decreased (10858.874023 --> 10800.528320). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 11.97 .. Rec_loss: 12093.78 .. NELBO:
12105.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.45 .. Rec_loss: 5360.28 .. NELBO: 5364.73
*****
*****
Validation loss decreased (10800.528320 --> 10729.453125). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 8.5 .. Rec_loss: 11993.45 .. NELBO:
12001.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.41 .. Rec_loss: 5326.43 .. NELBO: 5329.84
*****
*****
Validation loss decreased (10729.453125 --> 10659.666016). Saving model ...
*****
*****

```

```

Epoch----->7 .. LR: 0.005 .. KL_theta: 6.63 .. Rec_loss: 11889.53 .. NELBO:
11896.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.65 .. Rec_loss: 5303.79 .. NELBO: 5306.44
*****
*****
Validation loss decreased (10659.666016 --> 10612.885742). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 5.2 .. Rec_loss: 11811.4 .. NELBO:
11816.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.01 .. Rec_loss: 5302.72 .. NELBO: 5304.73
*****
*****
Validation loss decreased (10612.885742 --> 10609.461914). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 3.8 .. Rec_loss: 11778.02 .. NELBO:
11781.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 5321.65 .. NELBO: 5323.08
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 2.71 .. Rec_loss: 11782.9 .. NELBO:
11785.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.98 .. Rec_loss: 5343.59 .. NELBO: 5344.57
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

```

```

Epoch---->11 .. LR: 0.005 .. KL_theta: 1.88 .. Rec_loss: 11794.98 .. NELBO:
11796.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 5353.57 .. NELBO: 5354.26
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.32 .. Rec_loss: 11791.68 .. NELBO:
11793.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5351.28 .. NELBO: 5351.8
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 11777.88 .. NELBO:
11778.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5343.99 .. NELBO: 5344.44
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.045539232334743024, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=57, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=57, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=57, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1364.34 .. Rec_loss: 12263.88 .. NELBO:
13628.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 36.36 .. Rec_loss: 5444.72 .. NELBO:
5481.08
*****
*****
Validation loss decreased (inf --> 10962.153320). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 53.25 .. Rec_loss: 12251.74 .. NELBO:
12304.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 30.32 .. Rec_loss: 5435.38 .. NELBO: 5465.7
*****
*****
Validation loss decreased (10962.153320 --> 10931.401367). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 65.79 .. Rec_loss: 12220.74 .. NELBO:
12286.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 29.57 .. Rec_loss: 5417.75 .. NELBO:
5447.32
*****
*****
Validation loss decreased (10931.401367 --> 10894.657227). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 54.65 .. Rec_loss: 12165.99 .. NELBO:
12220.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.69 .. Rec_loss: 5391.84 .. NELBO:

```

```

5412.53
*****
*****
Validation loss decreased (10894.657227 --> 10825.056641). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 40.77 .. Rec_loss: 12088.05 .. NELBO:
12128.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.01 .. Rec_loss: 5359.41 .. NELBO:
5377.42
*****
*****
Validation loss decreased (10825.056641 --> 10754.849609). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 36.23 .. Rec_loss: 11989.97 .. NELBO:
12026.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.87 .. Rec_loss: 5326.09 .. NELBO:
5342.96
*****
*****
Validation loss decreased (10754.849609 --> 10685.911133). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 34.1 .. Rec_loss: 11886.75 .. NELBO:
11920.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.28 .. Rec_loss: 5303.65 .. NELBO:
5319.93
*****
*****
Validation loss decreased (10685.911133 --> 10639.868164). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 32.79 .. Rec_loss: 11809.14 .. NELBO:
11841.93
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 14.61 .. Rec_loss: 5302.66 .. NELBO:
5317.27
*****
*****
Validation loss decreased (10639.868164 --> 10634.544922). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 28.33 .. Rec_loss: 11777.0 .. NELBO:
11805.33
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 11.51 .. Rec_loss: 5320.5 .. NELBO: 5332.01
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 22.33 .. Rec_loss: 11780.78 .. NELBO:
11803.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.88 .. Rec_loss: 5340.55 .. NELBO: 5349.43
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 17.4 .. Rec_loss: 11789.99 .. NELBO:
11807.39
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.51 .. Rec_loss: 5349.39 .. NELBO: 5356.9
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 15.01 .. Rec_loss: 11784.66 .. NELBO:
11799.67

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.98 .. Rec_loss: 5346.56 .. NELBO: 5353.54
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 14.37 .. Rec_loss: 11772.1 .. NELBO:
11786.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.47 .. Rec_loss: 5339.24 .. NELBO: 5345.71
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.045539232334743024, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=57, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=57, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=57, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 731.88 .. Rec_loss: 12264.82 .. NELBO:
12996.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.23 .. Rec_loss: 5445.38 .. NELBO:
5465.61
*****
*****
Validation loss decreased (inf --> 10931.219727). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 24.96 .. Rec_loss: 12253.45 .. NELBO:
12278.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.4 .. Rec_loss: 5436.42 .. NELBO: 5441.82
*****
*****
Validation loss decreased (10931.219727 --> 10883.628906). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 10.98 .. Rec_loss: 12224.79 .. NELBO:
12235.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.81 .. Rec_loss: 5419.55 .. NELBO: 5424.36
*****
*****
Validation loss decreased (10883.628906 --> 10848.718750). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 8.73 .. Rec_loss: 12171.39 .. NELBO:
12180.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.6 .. Rec_loss: 5393.02 .. NELBO: 5395.62
*****
*****
Validation loss decreased (10848.718750 --> 10791.246094). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 4.38 .. Rec_loss: 12090.68 .. NELBO:
12095.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.1 .. Rec_loss: 5359.33 .. NELBO: 5360.43
*****
*****
Validation loss decreased (10791.246094 --> 10720.857422). Saving model ...

```



```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.84 .. Rec_loss: 11989.8 .. NELBO:
11991.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5325.7 .. NELBO: 5326.13
*****
*****
Validation loss decreased (10720.857422 --> 10652.261719). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 11887.78 .. NELBO:
11888.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5303.51 .. NELBO: 5303.7
*****
*****
Validation loss decreased (10652.261719 --> 10607.416016). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 11810.09 .. NELBO:
11810.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5303.04 .. NELBO: 5303.14
*****
*****
Validation loss decreased (10607.416016 --> 10606.274414). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 11777.56 .. NELBO:
11777.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5322.51 .. NELBO: 5322.55
*****
*****
EarlyStopping counter: 1 out of 5

```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11783.69 .. NELBO:
11783.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.88 .. NELBO: 5344.9
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.17 .. NELBO:
11796.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.93 .. NELBO: 5354.95
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.48 .. NELBO:
11792.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.55 .. NELBO: 5352.56
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.06 .. NELBO:
11779.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5345.2 .. NELBO: 5345.21
*****
*****
EarlyStopping counter: 5 out of 5

```

```

Early stopping
Current call: 52
model: ETM(
  (t_drop): Dropout(p=0.12292156783926446, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 84.92 .. Rec_loss: 12264.05 .. NELBO:
12348.97
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.94 .. Rec_loss: 5444.08 .. NELBO: 5452.02
*****
*****
Validation loss decreased (inf --> 10904.044922). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.76 .. Rec_loss: 12248.33 .. NELBO:
12257.09
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5431.83 .. NELBO: 5432.24
*****
*****
Validation loss decreased (10904.044922 --> 10864.485352). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12208.05 .. NELBO:
12208.64
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.7 .. NELBO: 5408.77
*****
*****
Validation loss decreased (10864.485352 --> 10817.531250). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12137.21 .. NELBO:
12137.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.0 .. NELBO: 5376.03
*****
*****
Validation loss decreased (10817.531250 --> 10752.055664). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12040.74 .. NELBO:
12040.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.73 .. NELBO: 5339.75
*****
*****
Validation loss decreased (10752.055664 --> 10679.500000). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11932.92 .. NELBO:
11932.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.55 .. NELBO: 5310.57
*****
*****
Validation loss decreased (10679.500000 --> 10621.146484). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11840.01 .. NELBO:
11840.05
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.49 .. NELBO: 5300.51
*****
*****
Validation loss decreased (10621.146484 --> 10601.008789). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.36 .. NELBO:
11788.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.2 .. NELBO: 5313.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.32 .. NELBO:
11781.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.25 .. NELBO: 5336.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.09 .. NELBO:
11793.13
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.43 .. NELBO: 5351.45
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.64 .. NELBO:
11795.68
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.08 .. NELBO: 5353.1
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.35 .. NELBO:
11784.39
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.05 .. NELBO: 5347.07
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.12292156783926446, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 86.6 .. Rec_loss: 12264.59 .. NELBO:
12351.19
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.69 .. Rec_loss: 5444.28 .. NELBO: 5451.97
*****
*****
Validation loss decreased (inf --> 10903.948242). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.62 .. Rec_loss: 12249.58 .. NELBO:
12258.2
*****

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```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.82 .. NELBO: 5433.27
*****
*****
Validation loss decreased (10903.948242 --> 10866.537109). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12212.19 .. NELBO:
12212.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.55 .. NELBO: 5410.62
*****
*****
Validation loss decreased (10866.537109 --> 10821.233398). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12143.79 .. NELBO:
12143.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.56 .. NELBO: 5378.58
*****
*****
Validation loss decreased (10821.233398 --> 10757.167969). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12048.68 .. NELBO:
12048.72
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.3 .. NELBO: 5342.32
*****
*****
Validation loss decreased (10757.167969 --> 10684.638672). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11941.84 .. NELBO:
11941.87
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.05 .. NELBO: 5312.07
*****
*****
Validation loss decreased (10684.638672 --> 10624.130859). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.8 .. NELBO:
11847.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.05 .. NELBO: 5300.07
*****
*****
Validation loss decreased (10624.130859 --> 10600.136719). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.21 .. NELBO:
11791.24
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.25 .. NELBO: 5311.27
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.95 .. NELBO:
11780.98
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.36 .. NELBO: 5334.38
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.64 .. NELBO:
11792.67
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.72 .. NELBO: 5350.74
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.97 .. NELBO:
11796.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.37 .. NELBO: 5353.39
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.37 .. NELBO:
11785.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.69 .. NELBO: 5347.71
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.12292156783926446, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****

```

```

Epoch----->1 .. LR: 0.005 .. KL_theta: 86.81 .. Rec_loss: 12264.14 .. NELBO:
12350.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.88 .. Rec_loss: 5444.12 .. NELBO: 5452.0
*****
*****
Validation loss decreased (inf --> 10904.000977). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.79 .. Rec_loss: 12248.82 .. NELBO:
12257.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5432.04 .. NELBO: 5432.5
*****
*****
Validation loss decreased (10904.000977 --> 10865.004883). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12209.06 .. NELBO:
12209.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.8 .. NELBO: 5408.87
*****
*****
Validation loss decreased (10865.004883 --> 10817.738281). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12137.93 .. NELBO:
12138.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.87 .. NELBO: 5375.89
*****
*****
Validation loss decreased (10817.738281 --> 10751.792969). Saving model ...
*****
*****

```

```

Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12040.39 .. NELBO:
12040.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.32 .. NELBO: 5339.34
*****
*****
Validation loss decreased (10751.792969 --> 10678.679688). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11932.24 .. NELBO:
11932.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.09 .. NELBO: 5310.11
*****
*****
Validation loss decreased (10678.679688 --> 10620.216797). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.88 .. NELBO:
11839.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.45 .. NELBO: 5300.47
*****
*****
Validation loss decreased (10620.216797 --> 10600.934570). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.03 .. NELBO:
11788.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.88 .. NELBO: 5313.9
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****

```

```
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.72 .. NELB0:
11781.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.28 .. NELB0: 5337.3
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.47 .. NELB0:
11794.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.16 .. NELB0: 5352.18
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.12 .. NELB0:
11796.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.29 .. NELB0: 5353.31
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.2 .. NELB0:
11784.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.91 .. NELB0: 5346.93
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 53
```

```

model: ETM(
  (t_drop): Dropout(p=0.05424595283128114, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 81.19 .. Rec_loss: 12264.4 .. NELBO:
12345.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.95 .. Rec_loss: 5444.11 .. NELBO: 5452.06
*****
*****
Validation loss decreased (inf --> 10904.108398). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.57 .. Rec_loss: 12248.69 .. NELBO:
12257.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5432.07 .. NELBO: 5432.44
*****
*****
Validation loss decreased (10904.108398 --> 10864.872070). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 12209.31 .. NELBO:
12209.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5409.4 .. NELBO: 5409.46
*****

```

```

*****
Validation loss decreased (10864.872070 --> 10818.937500). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12139.78 .. NELBO:
12139.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.08 .. NELBO: 5377.1
*****
*****
Validation loss decreased (10818.937500 --> 10754.208008). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12044.25 .. NELBO:
12044.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.85 .. NELBO: 5340.87
*****
*****
Validation loss decreased (10754.208008 --> 10681.732422). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11937.47 .. NELBO:
11937.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.14 .. NELBO: 5311.16
*****
*****
Validation loss decreased (10681.732422 --> 10622.320312). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11843.63 .. NELBO:
11843.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.14 .. NELBO: 5300.16
*****

```

```

*****
Validation loss decreased (10622.320312 --> 10600.319336). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.44 .. NELBO:
11789.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.2 .. NELBO: 5312.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.01 .. NELBO:
11781.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.33 .. NELBO: 5335.35
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.04 .. NELBO:
11793.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.05 .. NELBO: 5351.07
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.79 .. NELBO:
11795.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.12 .. NELBO: 5353.14
*****

```

```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.04 .. NELBO:
11784.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.24 .. NELBO: 5347.26
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05424595283128114, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 87.73 .. Rec_loss: 12264.32 .. NELBO:
12352.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.72 .. Rec_loss: 5444.22 .. NELBO: 5451.94
*****
*****
Validation loss decreased (inf --> 10903.875000). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.33 .. Rec_loss: 12248.92 .. NELBO:
12257.25
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.15 .. NELBO: 5432.58
*****
*****
Validation loss decreased (10903.875000 --> 10865.171875). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12209.42 .. NELBO:
12210.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.28 .. NELBO: 5409.35
*****
*****
Validation loss decreased (10865.171875 --> 10818.711914). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12139.04 .. NELBO:
12139.15
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.77 .. NELBO: 5376.8
*****
*****
Validation loss decreased (10818.711914 --> 10753.588867). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12042.99 .. NELBO:
12043.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.45 .. NELBO: 5340.47
*****
*****
Validation loss decreased (10753.588867 --> 10680.941406). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11934.69 .. NELBO:
11934.73
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.98 .. NELBO: 5311.0
*****
*****
Validation loss decreased (10680.941406 --> 10621.994141). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11842.04 .. NELBO:
11842.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.47 .. NELBO: 5300.49
*****
*****
Validation loss decreased (10621.994141 --> 10600.987305). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.04 .. NELBO:
11789.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.95 .. NELBO: 5312.97
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.08 .. NELBO:
11781.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.14 .. NELBO: 5336.16
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.24 .. NELBO:
11793.28
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.57 .. NELBO: 5351.59
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.86 .. NELBO:
11795.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.29 .. NELBO: 5353.31
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.2 .. NELBO:
11784.24
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.2 .. NELBO: 5347.22
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05424595283128114, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 99.86 .. Rec_loss: 12263.91 .. NELBO:
12363.77

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.81 .. Rec_loss: 5443.94 .. NELBO: 5452.75
*****
*****
Validation loss decreased (inf --> 10905.492188). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 9.55 .. Rec_loss: 12247.67 .. NELBO:
12257.22
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5431.73 .. NELBO: 5432.26
*****
*****
Validation loss decreased (10905.492188 --> 10864.517578). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 12207.75 .. NELBO:
12208.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5408.42 .. NELBO: 5408.51
*****
*****
Validation loss decreased (10864.517578 --> 10817.012695). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12136.78 .. NELBO:
12136.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.46 .. NELBO: 5375.49
*****
*****
Validation loss decreased (10817.012695 --> 10750.972656). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12038.8 .. NELBO:
12038.85

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.97 .. NELBO: 5338.99
*****
*****
Validation loss decreased (10750.972656 --> 10677.992188). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11931.31 .. NELBO:
11931.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.85 .. NELBO: 5309.87
*****
*****
Validation loss decreased (10677.992188 --> 10619.740234). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11838.52 .. NELBO:
11838.56
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.3 .. NELBO: 5300.32
*****
*****
Validation loss decreased (10619.740234 --> 10600.641602). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.31 .. NELBO:
11787.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.8 .. NELBO: 5313.82
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.43 .. NELBO:
11781.47

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.17 .. NELBO: 5337.19
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.59 .. NELBO:
11793.63
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.06 .. NELBO: 5352.08
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.8 .. NELBO:
11795.84
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.28 .. NELBO: 5353.3
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.71 .. NELBO:
11783.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.0 .. NELBO: 5347.02
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 54
model: ETM(
    (t_drop): Dropout(p=0.05552574250624165, inplace=False)

```

```

(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=58, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=58, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=58, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 68.41 .. Rec_loss: 12264.31 .. NELBO:
12332.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.91 .. Rec_loss: 5443.98 .. NELBO: 5450.89
*****
*****
Validation loss decreased (inf --> 10901.782227). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.38 .. Rec_loss: 12248.79 .. NELBO:
12256.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5432.27 .. NELBO: 5432.63
*****
*****
Validation loss decreased (10901.782227 --> 10865.265625). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12209.92 .. NELBO:
12210.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5409.71 .. NELBO: 5409.77
*****
*****
Validation loss decreased (10865.265625 --> 10819.548828). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12140.88 .. NELBO:
12140.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.45 .. NELBO: 5377.47
*****
*****
Validation loss decreased (10819.548828 --> 10754.936523). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12045.75 .. NELBO:
12045.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5341.11 .. NELBO: 5341.12
*****
*****
Validation loss decreased (10754.936523 --> 10682.252930). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11937.72 .. NELBO:
11937.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.28 .. NELBO: 5311.29
*****
*****
Validation loss decreased (10682.252930 --> 10622.578125). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11844.21 .. NELBO:
11844.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.24 .. NELBO: 5300.25
*****
*****
Validation loss decreased (10622.578125 --> 10600.505859). Saving model ...

```



```

*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11789.27 .. NELBO:
11789.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.4 .. NELBO: 5312.41
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.84 .. NELBO:
11780.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.68 .. NELBO: 5335.69
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.54 .. NELBO:
11793.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.29 .. NELBO: 5351.3
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.07 .. NELBO:
11796.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.09 .. NELBO: 5353.1
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11783.97 .. NELBO:
11783.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.07 .. NELBO: 5347.08
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05552574250624165, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=58, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=58, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=58, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.01 .. Rec_loss: 12263.89 .. NELBO:
12342.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.85 .. Rec_loss: 5443.86 .. NELBO: 5451.71
*****
*****
Validation loss decreased (inf --> 10903.417969). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.4 .. Rec_loss: 12248.1 .. NELBO:
12256.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5432.25 .. NELBO: 5432.62

```

```

*****
*****
Validation loss decreased (10903.417969 --> 10865.229492). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12209.91 .. NELBO:
12210.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5410.15 .. NELBO: 5410.21
*****
*****
Validation loss decreased (10865.229492 --> 10820.426758). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12141.8 .. NELBO:
12141.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.52 .. NELBO: 5378.54
*****
*****
Validation loss decreased (10820.426758 --> 10757.078125). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12048.15 .. NELBO:
12048.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5342.67 .. NELBO: 5342.68
*****
*****
Validation loss decreased (10757.078125 --> 10685.364258). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11940.79 .. NELBO:
11940.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.66 .. NELBO: 5312.67

```

```

*****
*****
Validation loss decreased (10685.364258 --> 10625.337891). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11846.82 .. NELBO:
11846.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.61 .. NELBO: 5300.62
*****
*****
Validation loss decreased (10625.337891 --> 10601.246094). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.6 .. NELBO:
11790.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.58 .. NELBO: 5311.59
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.96 .. NELBO:
11779.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.59 .. NELBO: 5334.61
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.21 .. NELBO:
11792.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.97 .. NELBO: 5350.99

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.96 .. NELBO:
11795.99
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.56 .. NELBO: 5353.58
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.16 .. NELBO:
11785.19
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.78 .. NELBO: 5347.79
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05552574250624165, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=58, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=58, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=58, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 73.77 .. Rec_loss: 12263.79 .. NELBO:
12337.56
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.08 .. Rec_loss: 5443.8 .. NELBO: 5450.88
*****
*****
Validation loss decreased (inf --> 10901.759766). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.7 .. Rec_loss: 12247.72 .. NELBO:
12255.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5431.9 .. NELBO: 5432.41
*****
*****
Validation loss decreased (10901.759766 --> 10864.810547). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 12208.4 .. NELBO:
12209.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5409.36 .. NELBO: 5409.46
*****
*****
Validation loss decreased (10864.810547 --> 10818.917969). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12139.19 .. NELBO:
12139.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.22 .. NELBO: 5377.24
*****
*****
Validation loss decreased (10818.917969 --> 10754.488281). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12044.25 .. NELBO:
12044.29
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5341.08 .. NELBO: 5341.09
*****
*****
Validation loss decreased (10754.488281 --> 10682.194336). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11936.7 .. NELBO:
11936.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.41 .. NELBO: 5311.42
*****
*****
Validation loss decreased (10682.194336 --> 10622.836914). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11842.27 .. NELBO:
11842.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.43 .. NELBO: 5300.44
*****
*****
Validation loss decreased (10622.836914 --> 10600.889648). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11788.43 .. NELBO:
11788.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.62 .. NELBO: 5312.63
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11780.18 .. NELBO:
11780.2
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.0 .. NELBO: 5336.01
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11793.09 .. NELBO:
11793.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.83 .. NELBO: 5351.84
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11796.67 .. NELBO:
11796.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.74 .. NELBO: 5353.75
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11785.03 .. NELBO:
11785.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.6 .. NELBO: 5347.61
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 55
model: ETM(
  (t_drop): Dropout(p=0.05616845975971447, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)

```



```

(alphas): Linear(in_features=300, out_features=52, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): SELU()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 12263.3 .. NELBO:
12263.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5442.43 .. NELBO: 5442.81
*****
*****
Validation loss decreased (inf --> 10885.627930). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.58 .. Rec_loss: 12241.31 .. NELBO:
12242.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5425.96 .. NELBO: 5426.0
*****
*****
Validation loss decreased (10885.627930 --> 10852.002930). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12189.42 .. NELBO:
12189.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5398.1 .. NELBO: 5398.2
*****
*****
Validation loss decreased (10852.002930 --> 10796.394531). Saving model ...
*****
*****

```

```

Epoch---->4 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 12105.29 .. NELBO:
12105.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 5361.39 .. NELBO: 5362.82
*****
*****
Validation loss decreased (10796.394531 --> 10725.631836). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.52 .. Rec_loss: 11996.53 .. NELBO:
12000.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.61 .. Rec_loss: 5326.1 .. NELBO: 5327.71
*****
*****
Validation loss decreased (10725.631836 --> 10655.425781). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.33 .. Rec_loss: 11893.23 .. NELBO:
11895.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5303.62 .. NELBO: 5304.08
*****
*****
Validation loss decreased (10655.425781 --> 10608.156250). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.03 .. Rec_loss: 11815.4 .. NELBO:
11816.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5302.42 .. NELBO: 5302.65
*****
*****
Validation loss decreased (10608.156250 --> 10605.300781). Saving model ...
*****
*****

```

```

Epoch----->8 .. LR: 0.005 .. KL_theta: 1.39 .. Rec_loss: 11781.4 .. NELBO:
11782.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 5320.14 .. NELBO: 5320.82
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 1.45 .. Rec_loss: 11784.01 .. NELBO:
11785.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5340.53 .. NELBO: 5340.74
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 11791.95 .. NELBO:
11792.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.13 .. Rec_loss: 5347.41 .. NELBO: 5348.54
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 3.64 .. Rec_loss: 11783.34 .. NELBO:
11786.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.29 .. Rec_loss: 5342.94 .. NELBO: 5345.23
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****

```

```

Epoch----->12 .. LR: 0.005 .. KL_theta: 3.89 .. Rec_loss: 11768.21 .. NELBO:
11772.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.71 .. Rec_loss: 5337.15 .. NELBO: 5338.86
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05616845975971447, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=52, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 12263.06 .. NELBO:
12263.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5441.96 .. NELBO: 5442.27
*****
*****
Validation loss decreased (inf --> 10884.539062). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 12239.39 .. NELBO:
12241.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5424.45 .. NELBO: 5424.5
*****
*****

```

```

Validation loss decreased (10884.539062 --> 10849.002930). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12183.87 .. NELBO:
12183.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5395.54 .. NELBO: 5395.64
*****
*****
Validation loss decreased (10849.002930 --> 10791.274414). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 12097.72 .. NELBO:
12098.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 5358.33 .. NELBO: 5359.45
*****
*****
Validation loss decreased (10791.274414 --> 10718.904297). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.64 .. Rec_loss: 11986.5 .. NELBO:
11990.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 5323.28 .. NELBO: 5325.07
*****
*****
Validation loss decreased (10718.904297 --> 10650.129883). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.3 .. Rec_loss: 11884.5 .. NELBO:
11886.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5302.7 .. NELBO: 5302.78
*****
*****

```

```

Validation loss decreased (10650.129883 --> 10605.545898). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11810.44 .. NELBO:
11810.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5303.97 .. NELBO: 5304.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 11781.07 .. NELBO:
11781.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5323.56 .. NELBO: 5323.7
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 11786.5 .. NELBO:
11786.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5343.08 .. NELBO: 5343.44
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 11793.8 .. NELBO:
11794.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5350.06 .. NELBO: 5350.5
*****
*****

```

```

EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.4 .. Rec_loss: 11786.47 .. NELBO:
11787.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.2 .. Rec_loss: 5345.25 .. NELBO: 5346.45
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05616845975971447, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=52, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 12263.31 .. NELBO:
12263.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5442.26 .. NELBO: 5442.63
*****
*****
Validation loss decreased (inf --> 10885.255859). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.65 .. Rec_loss: 12240.71 .. NELBO:
12242.36
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5425.36 .. NELBO: 5425.41
*****
*****
Validation loss decreased (10885.255859 --> 10850.814453). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12187.5 .. NELBO:
12187.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5397.04 .. NELBO: 5397.11
*****
*****
Validation loss decreased (10850.814453 --> 10794.214844). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 12102.13 .. NELBO:
12102.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 5360.41 .. NELBO: 5360.98
*****
*****
Validation loss decreased (10794.214844 --> 10721.958984). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 2.13 .. Rec_loss: 11994.84 .. NELBO:
11996.97
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.98 .. Rec_loss: 5324.92 .. NELBO: 5325.9
*****
*****
Validation loss decreased (10721.958984 --> 10651.801758). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 1.24 .. Rec_loss: 11890.18 .. NELBO:
11891.42
*****
*****
*****

```



```

VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5303.01 .. NELBO: 5303.22
*****
*****
Validation loss decreased (10651.801758 --> 10606.434570). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11813.67 .. NELBO:
11814.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5303.36 .. NELBO: 5303.67
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 11782.14 .. NELBO:
11782.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5322.05 .. NELBO: 5322.39
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 11785.63 .. NELBO:
11786.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5342.32 .. NELBO: 5342.62
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.89 .. Rec_loss: 11793.61 .. NELBO:
11794.5
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 1.36 .. Rec_loss: 5348.83 .. NELBO: 5350.19
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.99 .. Rec_loss: 11784.56 .. NELBO:
11788.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.72 .. Rec_loss: 5343.59 .. NELBO: 5346.31
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 56
model: ETM(
  (t_drop): Dropout(p=0.06336470859555748, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 854.4 .. Rec_loss: 12264.37 .. NELBO:
13118.77
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 19.91 .. Rec_loss: 5445.4 .. NELBO: 5465.31
*****
*****
Validation loss decreased (inf --> 10930.631836). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 22.41 .. Rec_loss: 12253.21 .. NELBO:
12275.62

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.11 .. Rec_loss: 5436.26 .. NELBO: 5438.37
*****
*****
Validation loss decreased (10930.631836 --> 10876.727539). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 3.75 .. Rec_loss: 12223.15 .. NELBO:
12226.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 5418.45 .. NELBO: 5419.45
*****
*****
Validation loss decreased (10876.727539 --> 10838.906250). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 12167.07 .. NELBO:
12168.67
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5390.9 .. NELBO: 5391.18
*****
*****
Validation loss decreased (10838.906250 --> 10782.353516). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 12083.68 .. NELBO:
12084.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5356.57 .. NELBO: 5356.67
*****
*****
Validation loss decreased (10782.353516 --> 10713.331055). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 11980.66 .. NELBO:
11980.83

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5323.23 .. NELBO: 5323.29
*****
*****
Validation loss decreased (10713.331055 --> 10646.574219). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11879.54 .. NELBO:
11879.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5302.66 .. NELBO: 5302.72
*****
*****
Validation loss decreased (10646.574219 --> 10605.440430). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11804.89 .. NELBO:
11805.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5304.54 .. NELBO: 5304.62
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 11777.24 .. NELBO:
11777.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5325.21 .. NELBO: 5325.26
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11785.22 .. NELBO:
11785.3

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.66 .. NELBO: 5346.69
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.57 .. NELBO:
11796.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.2 .. NELBO: 5355.22
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.04 .. NELBO:
11792.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.97 .. NELBO: 5351.99
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06336470859555748, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****

```

```

*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1286.17 .. Rec_loss: 12264.06 .. NELBO:
13550.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.79 .. Rec_loss: 5445.33 .. NELBO:
5471.12
*****
*****
Validation loss decreased (inf --> 10942.243164). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 32.88 .. Rec_loss: 12253.24 .. NELBO:
12286.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.7 .. Rec_loss: 5436.45 .. NELBO: 5445.15
*****
*****
Validation loss decreased (10942.243164 --> 10890.301758). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 18.41 .. Rec_loss: 12223.72 .. NELBO:
12242.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.21 .. Rec_loss: 5418.63 .. NELBO: 5426.84
*****
*****
Validation loss decreased (10890.301758 --> 10853.684570). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 16.16 .. Rec_loss: 12168.22 .. NELBO:
12184.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.08 .. Rec_loss: 5391.22 .. NELBO: 5397.3
*****
*****
Validation loss decreased (10853.684570 --> 10794.589844). Saving model ...

```

```

*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 11.96 .. Rec_loss: 12084.67 .. NELBO:
12096.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.27 .. Rec_loss: 5357.1 .. NELBO: 5361.37
*****
*****
Validation loss decreased (10794.589844 --> 10722.750000). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 8.24 .. Rec_loss: 11982.22 .. NELBO:
11990.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.1 .. Rec_loss: 5323.82 .. NELBO: 5326.92
*****
*****
Validation loss decreased (10722.750000 --> 10653.840820). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 6.1 .. Rec_loss: 11880.83 .. NELBO:
11886.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.26 .. Rec_loss: 5302.89 .. NELBO: 5305.15
*****
*****
Validation loss decreased (10653.840820 --> 10610.309570). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.42 .. Rec_loss: 11805.84 .. NELBO:
11810.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.62 .. Rec_loss: 5304.12 .. NELBO: 5305.74
*****
*****
EarlyStopping counter: 1 out of 5

```

```

*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 3.1 .. Rec_loss: 11776.75 .. NELBO:
11779.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 5324.43 .. NELBO: 5325.55
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.14 .. Rec_loss: 11784.33 .. NELBO:
11786.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.74 .. Rec_loss: 5346.05 .. NELBO: 5346.79
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.42 .. Rec_loss: 11795.99 .. NELBO:
11797.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5354.75 .. NELBO: 5355.22
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.9 .. Rec_loss: 11791.2 .. NELBO:
11792.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5351.5 .. NELBO: 5351.79
*****
*****
EarlyStopping counter: 5 out of 5

```



```

Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06336470859555748, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1153.06 .. Rec_loss: 12264.33 .. NELBO:
13417.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 22.27 .. Rec_loss: 5445.22 .. NELBO:
5467.49
*****
*****
Validation loss decreased (inf --> 10934.986328). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 25.13 .. Rec_loss: 12252.65 .. NELBO:
12277.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.17 .. Rec_loss: 5436.0 .. NELBO: 5438.17
*****
*****
Validation loss decreased (10934.986328 --> 10876.334961). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 4.25 .. Rec_loss: 12222.17 .. NELBO:
12226.42
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 1.57 .. Rec_loss: 5418.02 .. NELBO: 5419.59
*****
*****
Validation loss decreased (10876.334961 --> 10839.166016). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 2.93 .. Rec_loss: 12165.12 .. NELBO:
12168.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 5390.2 .. NELBO: 5391.22
*****
*****
Validation loss decreased (10839.166016 --> 10782.421875). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 1.94 .. Rec_loss: 12080.91 .. NELBO:
12082.85
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 5355.58 .. NELBO: 5356.28
*****
*****
Validation loss decreased (10782.421875 --> 10712.561523). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 1.35 .. Rec_loss: 11977.44 .. NELBO:
11978.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5322.13 .. NELBO: 5322.62
*****
*****
Validation loss decreased (10712.561523 --> 10645.253906). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 11875.1 .. NELBO:
11876.15
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5301.96 .. NELBO: 5302.34
*****
*****
Validation loss decreased (10645.253906 --> 10604.665039). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 11801.28 .. NELBO:
11802.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5304.76 .. NELBO: 5304.99
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 11775.64 .. NELBO:
11776.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5326.36 .. NELBO: 5326.52
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 11785.55 .. NELBO:
11785.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5348.1 .. NELBO: 5348.19
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 11797.2 .. NELBO:
11797.37
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5356.31 .. NELBO: 5356.36
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11791.99 .. NELBO:
11792.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.66 .. NELBO: 5352.69
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 57
model: ETM(
  (t_drop): Dropout(p=0.00478877349456689, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.46 .. Rec_loss: 12264.07 .. NELBO:
12350.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.82 .. Rec_loss: 5443.85 .. NELBO: 5451.67
*****
*****
Validation loss decreased (inf --> 10903.354492). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.4 .. Rec_loss: 12247.47 .. NELBO:
12255.87

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5431.08 .. NELBO: 5431.52
*****
*****
Validation loss decreased (10903.354492 --> 10863.055664). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12205.88 .. NELBO:
12206.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.3 .. NELBO: 5407.37
*****
*****
Validation loss decreased (10863.055664 --> 10814.750000). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12133.26 .. NELBO:
12133.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5373.91 .. NELBO: 5373.94
*****
*****
Validation loss decreased (10814.750000 --> 10747.877930). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12035.12 .. NELBO:
12035.17
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.3 .. NELBO: 5337.32
*****
*****
Validation loss decreased (10747.877930 --> 10674.634766). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11926.08 .. NELBO:
11926.12

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.7 .. NELBO: 5308.72
*****
*****
Validation loss decreased (10674.634766 --> 10617.436523). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11835.2 .. NELBO:
11835.24
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.26 .. NELBO: 5300.28
*****
*****
Validation loss decreased (10617.436523 --> 10600.558594). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.39 .. NELBO:
11786.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.73 .. NELBO: 5314.75
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.98 .. NELBO:
11782.01
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.15 .. NELBO: 5338.17
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.77 .. NELBO:
11794.8

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.34 .. NELBO: 5352.36
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.35 .. NELBO:
11795.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.95 .. NELBO: 5352.97
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.89 .. NELBO:
11782.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.5 .. NELBO: 5346.52
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.00478877349456689, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****

```

```

*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 96.12 .. Rec_loss: 12264.14 .. NELBO:
12360.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.25 .. Rec_loss: 5444.44 .. NELBO: 5452.69
*****
*****
Validation loss decreased (inf --> 10905.389648). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.85 .. Rec_loss: 12249.76 .. NELBO:
12258.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5433.22 .. NELBO: 5433.71
*****
*****
Validation loss decreased (10905.389648 --> 10867.418945). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 12212.63 .. NELBO:
12213.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5411.43 .. NELBO: 5411.51
*****
*****
Validation loss decreased (10867.418945 --> 10823.015625). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12145.16 .. NELBO:
12145.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.74 .. NELBO: 5379.77
*****
*****
Validation loss decreased (10823.015625 --> 10759.540039). Saving model ...
*****

```



```

*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12051.21 .. NELBO:
12051.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.44 .. NELBO: 5343.46
*****
*****
Validation loss decreased (10759.540039 --> 10686.909180). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11943.63 .. NELBO:
11943.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.78 .. NELBO: 5312.8
*****
*****
Validation loss decreased (10686.909180 --> 10625.587891). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.61 .. NELBO:
11847.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.31 .. NELBO: 5300.33
*****
*****
Validation loss decreased (10625.587891 --> 10600.659180). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.95 .. NELBO:
11789.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.37 .. NELBO: 5311.39
*****
*****
EarlyStopping counter: 1 out of 5
*****

```

```

*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.65 .. NELBO:
11779.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.79 .. NELBO: 5334.81
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.26 .. NELBO:
11792.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.48 .. NELBO: 5351.5
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.57 .. NELBO:
11796.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.14 .. NELBO: 5354.16
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.83 .. NELBO:
11785.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.24 .. NELBO: 5348.26
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping

```

```

model: ETM(
  (t_drop): Dropout(p=0.00478877349456689, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 92.74 .. Rec_loss: 12264.31 .. NELBO:
12357.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.28 .. Rec_loss: 5444.11 .. NELBO: 5452.39
*****
*****
Validation loss decreased (inf --> 10904.767578). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.92 .. Rec_loss: 12248.83 .. NELBO:
12257.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5432.56 .. NELBO: 5433.09
*****
*****
Validation loss decreased (10904.767578 --> 10866.169922). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 12210.92 .. NELBO:
12211.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.33 .. NELBO: 5410.41
*****
*****

```

```

*****
Validation loss decreased (10866.169922 --> 10820.832031). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12142.75 .. NELBO:
12142.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.21 .. NELBO: 5378.24
*****
*****
Validation loss decreased (10820.832031 --> 10756.475586). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12047.54 .. NELBO:
12047.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.73 .. NELBO: 5341.75
*****
*****
Validation loss decreased (10756.475586 --> 10683.511719). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11939.1 .. NELBO:
11939.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.53 .. NELBO: 5311.55
*****
*****
Validation loss decreased (10683.511719 --> 10623.106445). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11844.34 .. NELBO:
11844.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.14 .. NELBO: 5300.16
*****

```

```

*****
Validation loss decreased (10623.106445 --> 10600.326172). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.57 .. NELBO:
11789.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.27 .. NELBO: 5312.29
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.02 .. NELBO:
11781.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.76 .. NELBO: 5335.78
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.47 .. NELBO:
11793.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.57 .. NELBO: 5351.59
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.33 .. NELBO:
11796.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.44 .. NELBO: 5353.46
*****

```

```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.91 .. NELBO:
11784.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.32 .. NELBO: 5347.34
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 58
model: ETM(
  (t_drop): Dropout(p=0.15322569984956702, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1058.48 .. Rec_loss: 12263.98 .. NELBO:
13322.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.76 .. Rec_loss: 5445.46 .. NELBO:
5466.22
*****
*****
Validation loss decreased (inf --> 10932.433594). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 23.88 .. Rec_loss: 12253.41 .. NELBO:
12277.29
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.67 .. Rec_loss: 5436.1 .. NELBO: 5438.77
*****
*****
Validation loss decreased (10932.433594 --> 10877.537109). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 5.77 .. Rec_loss: 12222.6 .. NELBO:
12228.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.9 .. Rec_loss: 5417.93 .. NELBO: 5419.83
*****
*****
Validation loss decreased (10877.537109 --> 10839.653320). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.55 .. Rec_loss: 12165.61 .. NELBO:
12169.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.87 .. Rec_loss: 5389.87 .. NELBO: 5390.74
*****
*****
Validation loss decreased (10839.653320 --> 10781.476562). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.7 .. Rec_loss: 12080.76 .. NELBO:
12082.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5355.1 .. NELBO: 5355.51
*****
*****
Validation loss decreased (10781.476562 --> 10711.028320). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.82 .. Rec_loss: 11976.93 .. NELBO:
11977.75
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5321.73 .. NELBO: 5321.96
*****
*****
Validation loss decreased (10711.028320 --> 10643.911133). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 11874.74 .. NELBO:
11875.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5301.9 .. NELBO: 5302.08
*****
*****
Validation loss decreased (10643.911133 --> 10604.166016). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11802.19 .. NELBO:
11802.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5305.04 .. NELBO: 5305.21
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 11776.68 .. NELBO:
11777.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5326.41 .. NELBO: 5326.48
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11786.0 .. NELBO:
11786.11
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5347.52 .. NELBO: 5347.55
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11797.21 .. NELBO:
11797.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.28 .. NELBO: 5355.3
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.55 .. NELBO:
11790.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.62 .. NELBO: 5351.64
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.15322569984956702, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****

```

```

Epoch----->1 .. LR: 0.005 .. KL_theta: 894.89 .. Rec_loss: 12264.6 .. NELBO:
13159.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.62 .. Rec_loss: 5446.16 .. NELBO:
5469.78
*****
*****
Validation loss decreased (inf --> 10939.560547). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 28.09 .. Rec_loss: 12255.71 .. NELBO:
12283.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.08 .. Rec_loss: 5438.15 .. NELBO: 5441.23
*****
*****
Validation loss decreased (10939.560547 --> 10882.475586). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 6.44 .. Rec_loss: 12229.34 .. NELBO:
12235.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.94 .. Rec_loss: 5422.09 .. NELBO: 5424.03
*****
*****
Validation loss decreased (10882.475586 --> 10848.073242). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 3.66 .. Rec_loss: 12178.06 .. NELBO:
12181.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 5396.2 .. NELBO: 5396.93
*****
*****
Validation loss decreased (10848.073242 --> 10793.870117). Saving model ...
*****

```

```

*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 12099.09 .. NELBO:
12100.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5362.59 .. NELBO: 5362.8
*****
*****
Validation loss decreased (10793.870117 --> 10725.604492). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 11997.78 .. NELBO:
11998.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5328.23 .. NELBO: 5328.34
*****
*****
Validation loss decreased (10725.604492 --> 10656.683594). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 11893.56 .. NELBO:
11893.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5304.6 .. NELBO: 5304.72
*****
*****
Validation loss decreased (10656.683594 --> 10609.441406). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 11812.94 .. NELBO:
11813.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5302.62 .. NELBO: 5302.7
*****
*****
Validation loss decreased (10609.441406 --> 10605.394531). Saving model ...
*****

```

```

*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11777.95 .. NELBO:
11778.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5321.46 .. NELBO: 5321.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11782.27 .. NELBO:
11782.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.47 .. NELBO: 5344.49
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11795.91 .. NELBO:
11795.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.54 .. NELBO: 5355.56
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11794.02 .. NELBO:
11794.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.65 .. NELBO: 5353.67
*****
*****
EarlyStopping counter: 4 out of 5
*****

```

```

*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11779.88 .. NELBO:
11779.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.29 .. NELBO: 5346.31
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.15322569984956702, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1182.94 .. Rec_loss: 12264.58 .. NELBO:
13447.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 26.46 .. Rec_loss: 5445.59 .. NELBO:
5472.05
*****
*****
Validation loss decreased (inf --> 10944.106445). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 34.76 .. Rec_loss: 12254.02 .. NELBO:
12288.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.54 .. Rec_loss: 5436.78 .. NELBO: 5446.32

```

```

*****
*****
Validation loss decreased (10944.106445 --> 10892.654297). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 21.62 .. Rec_loss: 12225.23 .. NELBO:
12246.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.48 .. Rec_loss: 5419.52 .. NELBO: 5429.0
*****
*****
Validation loss decreased (10892.654297 --> 10857.982422). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 19.24 .. Rec_loss: 12170.77 .. NELBO:
12190.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.33 .. Rec_loss: 5392.42 .. NELBO: 5398.75
*****
*****
Validation loss decreased (10857.982422 --> 10797.504883). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 12.94 .. Rec_loss: 12088.53 .. NELBO:
12101.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.98 .. Rec_loss: 5358.29 .. NELBO: 5362.27
*****
*****
Validation loss decreased (10797.504883 --> 10724.532227). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 7.91 .. Rec_loss: 11986.11 .. NELBO:
11994.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.56 .. Rec_loss: 5324.63 .. NELBO: 5327.19

```

```

*****
*****
Validation loss decreased (10724.532227 --> 10654.392578). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.23 .. Rec_loss: 11883.34 .. NELBO:
11888.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.75 .. Rec_loss: 5303.1 .. NELBO: 5304.85
*****
*****
Validation loss decreased (10654.392578 --> 10609.693359). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.7 .. Rec_loss: 11807.59 .. NELBO:
11811.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.2 .. Rec_loss: 5303.69 .. NELBO: 5304.89
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.33 .. Rec_loss: 11777.42 .. NELBO:
11779.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.8 .. Rec_loss: 5323.64 .. NELBO: 5324.44
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.55 .. Rec_loss: 11784.34 .. NELBO:
11785.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5345.27 .. NELBO: 5345.79

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.03 .. Rec_loss: 11795.78 .. NELBO:
11796.81
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5354.25 .. NELBO: 5354.58
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 11791.7 .. NELBO:
11792.39
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5351.3 .. NELBO: 5351.53
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 59
model: ETM(
  (t_drop): Dropout(p=0.07860691530231233, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 964.73 .. Rec_loss: 12265.2 .. NELBO:
13229.93
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.75 .. Rec_loss: 5445.92 .. NELBO:
5464.67
*****
*****
Validation loss decreased (inf --> 10929.351562). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 22.89 .. Rec_loss: 12255.16 .. NELBO:
12278.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.44 .. Rec_loss: 5437.54 .. NELBO: 5441.98
*****
*****
Validation loss decreased (10929.351562 --> 10883.964844). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 8.88 .. Rec_loss: 12227.76 .. NELBO:
12236.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.25 .. Rec_loss: 5420.78 .. NELBO: 5424.03
*****
*****
Validation loss decreased (10883.964844 --> 10848.051758). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 6.01 .. Rec_loss: 12174.92 .. NELBO:
12180.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.9 .. Rec_loss: 5394.21 .. NELBO: 5396.11
*****
*****
Validation loss decreased (10848.051758 --> 10792.222656). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.47 .. Rec_loss: 12094.51 .. NELBO:
12097.98

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 5360.32 .. NELBO: 5361.43
*****
*****
Validation loss decreased (10792.222656 --> 10722.871094). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.18 .. Rec_loss: 11993.11 .. NELBO:
11995.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 5326.22 .. NELBO: 5326.98
*****
*****
Validation loss decreased (10722.871094 --> 10653.956055). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.53 .. Rec_loss: 11889.71 .. NELBO:
11891.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 5303.42 .. NELBO: 5303.98
*****
*****
Validation loss decreased (10653.956055 --> 10607.958984). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.17 .. Rec_loss: 11810.44 .. NELBO:
11811.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5302.55 .. NELBO: 5302.97
*****
*****
Validation loss decreased (10607.958984 --> 10605.921875). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 11777.47 .. NELBO:
11778.26

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5322.02 .. NELBO: 5322.28
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 11783.3 .. NELBO:
11783.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5344.62 .. NELBO: 5344.77
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 11796.22 .. NELBO:
11796.49
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5354.9 .. NELBO: 5354.97
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11792.54 .. NELBO:
11792.66
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.64 .. NELBO: 5352.67
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11779.32 .. NELBO:
11779.38

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.34 .. NELBO: 5345.36
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.07860691530231233, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 868.75 .. Rec_loss: 12264.78 .. NELBO:
13133.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 19.74 .. Rec_loss: 5445.54 .. NELBO:
5465.28
*****
*****
Validation loss decreased (inf --> 10930.555664). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 21.06 .. Rec_loss: 12254.21 .. NELBO:
12275.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 5437.06 .. NELBO: 5437.65
*****
*****
Validation loss decreased (10930.555664 --> 10875.297852). Saving model ...

```

```

*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.96 .. Rec_loss: 12225.69 .. NELBO:
12226.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5419.88 .. NELBO: 5420.08
*****
*****
Validation loss decreased (10875.297852 --> 10840.143555). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 12171.37 .. NELBO:
12171.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5392.84 .. NELBO: 5392.91
*****
*****
Validation loss decreased (10840.143555 --> 10785.808594). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12089.3 .. NELBO:
12089.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5358.63 .. NELBO: 5358.66
*****
*****
Validation loss decreased (10785.808594 --> 10717.320312). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11986.7 .. NELBO:
11986.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5324.77 .. NELBO: 5324.8
*****
*****
Validation loss decreased (10717.320312 --> 10649.597656). Saving model ...

```

```

*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11884.1 .. NELBO:
11884.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5303.15 .. NELBO: 5303.18
*****
*****
Validation loss decreased (10649.597656 --> 10606.357422). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11806.83 .. NELBO:
11806.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5304.03 .. NELBO: 5304.07
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11777.03 .. NELBO:
11777.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5324.62 .. NELBO: 5324.66
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11784.98 .. NELBO:
11785.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.82 .. NELBO: 5346.85
*****
*****
EarlyStopping counter: 3 out of 5

```

```

*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11797.02 .. NELBO:
11797.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.94 .. NELBO: 5355.96
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.4 .. NELBO:
11792.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.8 .. NELBO: 5352.82
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.07860691530231233, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1635.71 .. Rec_loss: 12264.66 .. NELBO:
13900.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 27.93 .. Rec_loss: 5445.62 .. NELBO:

```

```

5473.55
*****
*****
Validation loss decreased (inf --> 10947.086914). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 37.16 .. Rec_loss: 12254.68 .. NELBO:
12291.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.62 .. Rec_loss: 5437.56 .. NELBO:
5450.18
*****
*****
Validation loss decreased (10947.086914 --> 10900.344727). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 26.07 .. Rec_loss: 12228.16 .. NELBO:
12254.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.03 .. Rec_loss: 5421.3 .. NELBO: 5431.33
*****
*****
Validation loss decreased (10900.344727 --> 10862.665039). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 18.39 .. Rec_loss: 12176.37 .. NELBO:
12194.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.74 .. Rec_loss: 5395.35 .. NELBO: 5401.09
*****
*****
Validation loss decreased (10862.665039 --> 10802.173828). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 10.99 .. Rec_loss: 12097.35 .. NELBO:
12108.34
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.77 .. Rec_loss: 5361.98 .. NELBO: 5365.75
*****
*****
Validation loss decreased (10802.173828 --> 10731.494141). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 7.54 .. Rec_loss: 11997.88 .. NELBO:
12005.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.9 .. Rec_loss: 5327.91 .. NELBO: 5330.81
*****
*****
Validation loss decreased (10731.494141 --> 10661.625977). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.95 .. Rec_loss: 11893.62 .. NELBO:
11899.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.39 .. Rec_loss: 5304.45 .. NELBO: 5306.84
*****
*****
Validation loss decreased (10661.625977 --> 10613.685547). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.96 .. Rec_loss: 11813.51 .. NELBO:
11818.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.97 .. Rec_loss: 5302.39 .. NELBO: 5304.36
*****
*****
Validation loss decreased (10613.685547 --> 10608.723633). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 4.01 .. Rec_loss: 11777.88 .. NELBO:
11781.89
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.55 .. Rec_loss: 5320.93 .. NELBO: 5322.48
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.98 .. Rec_loss: 11781.98 .. NELBO:
11784.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.13 .. Rec_loss: 5343.55 .. NELBO: 5344.68
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.29 .. Rec_loss: 11795.0 .. NELBO:
11797.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 5354.39 .. NELBO: 5355.18
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.62 .. Rec_loss: 11793.42 .. NELBO:
11795.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 5352.41 .. NELBO: 5352.99
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 1.14 .. Rec_loss: 11778.34 .. NELBO:
11779.48
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5345.06 .. NELBO: 5345.52
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 60
model: ETM(
  (t_drop): Dropout(p=0.10176303415395928, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1070.32 .. Rec_loss: 12264.89 .. NELBO:
13335.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.31 .. Rec_loss: 5446.19 .. NELBO: 5469.5
*****
*****
Validation loss decreased (inf --> 10938.995117). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 27.5 .. Rec_loss: 12256.46 .. NELBO:
12283.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.68 .. Rec_loss: 5438.7 .. NELBO: 5443.38
*****
*****
Validation loss decreased (10938.995117 --> 10886.753906). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 9.43 .. Rec_loss: 12231.11 .. NELBO:

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```

12240.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.28 .. Rec_loss: 5423.01 .. NELBO: 5426.29
*****
*****
Validation loss decreased (10886.753906 --> 10852.582031). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 5.92 .. Rec_loss: 12181.33 .. NELBO:
12187.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.5 .. Rec_loss: 5397.68 .. NELBO: 5399.18
*****
*****
Validation loss decreased (10852.582031 --> 10798.358398). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.79 .. Rec_loss: 12103.48 .. NELBO:
12106.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 5364.54 .. NELBO: 5365.22
*****
*****
Validation loss decreased (10798.358398 --> 10730.439453). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 12004.48 .. NELBO:
12005.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5330.2 .. NELBO: 5330.54
*****
*****
Validation loss decreased (10730.439453 --> 10661.065430). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 11900.82 .. NELBO:

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```
11901.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5305.8 .. NELBO: 5305.92
*****
*****
Validation loss decreased (10661.065430 --> 10611.852539). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 11818.61 .. NELBO:
11818.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5302.31 .. NELBO: 5302.37
*****
*****
Validation loss decreased (10611.852539 --> 10604.735352). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11780.64 .. NELBO:
11780.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5319.85 .. NELBO: 5319.88
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11783.02 .. NELBO:
11783.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.67 .. NELBO: 5342.69
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.78 .. NELBO:
```

```

11795.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.46 .. NELBO: 5354.48
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.84 .. NELBO:
11794.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.28 .. NELBO: 5353.3
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.33 .. NELBO:
11781.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.14 .. NELBO: 5346.16
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.10176303415395928, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)

```

```

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1324.91 .. Rec_loss: 12264.69 .. NELBO:
13589.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.79 .. Rec_loss: 5445.78 .. NELBO:
5470.57
*****
*****
Validation loss decreased (inf --> 10941.126953). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 30.89 .. Rec_loss: 12254.97 .. NELBO:
12285.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.28 .. Rec_loss: 5437.6 .. NELBO: 5444.88
*****
*****
Validation loss decreased (10941.126953 --> 10889.756836). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 14.91 .. Rec_loss: 12227.96 .. NELBO:
12242.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.0 .. Rec_loss: 5421.0 .. NELBO: 5426.0
*****
*****
Validation loss decreased (10889.756836 --> 10851.993164). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 8.9 .. Rec_loss: 12175.28 .. NELBO:
12184.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.15 .. Rec_loss: 5394.74 .. NELBO: 5396.89
*****
*****

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```

Validation loss decreased (10851.993164 --> 10793.781250). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.76 .. Rec_loss: 12095.55 .. NELBO:
12099.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 5361.2 .. NELBO: 5362.2
*****
*****
Validation loss decreased (10793.781250 --> 10724.395508). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 11995.02 .. NELBO:
11996.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5327.18 .. NELBO: 5327.67
*****
*****
Validation loss decreased (10724.395508 --> 10655.333984). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.86 .. Rec_loss: 11891.87 .. NELBO:
11892.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5304.07 .. NELBO: 5304.33
*****
*****
Validation loss decreased (10655.333984 --> 10608.655273). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 11812.35 .. NELBO:
11812.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5302.6 .. NELBO: 5302.74
*****
*****

```



```

Validation loss decreased (10608.655273 --> 10605.483398). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 11777.65 .. NELBO:
11777.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5321.72 .. NELBO: 5321.8
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 11782.55 .. NELBO:
11782.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5344.64 .. NELBO: 5344.68
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11795.92 .. NELBO:
11795.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.42 .. NELBO: 5355.45
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.57 .. NELBO:
11793.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.31 .. NELBO: 5353.33
*****
*****

```

```

EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11779.56 .. NELBO:
11779.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.81 .. NELBO: 5345.83
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.10176303415395928, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1057.37 .. Rec_loss: 12264.22 .. NELBO:
13321.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 21.37 .. Rec_loss: 5445.39 .. NELBO:
5466.76
*****
*****
Validation loss decreased (inf --> 10933.528320). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 25.62 .. Rec_loss: 12253.55 .. NELBO:
12279.17
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.89 .. Rec_loss: 5436.4 .. NELBO: 5440.29
*****
*****
Validation loss decreased (10933.528320 --> 10880.567383). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 7.37 .. Rec_loss: 12223.89 .. NELBO:
12231.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.64 .. Rec_loss: 5418.69 .. NELBO: 5421.33
*****
*****
Validation loss decreased (10880.567383 --> 10842.655273). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 5.0 .. Rec_loss: 12167.7 .. NELBO:
12172.7
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.49 .. Rec_loss: 5391.12 .. NELBO: 5392.61
*****
*****
Validation loss decreased (10842.655273 --> 10785.209961). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.81 .. Rec_loss: 12084.37 .. NELBO:
12087.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 5356.59 .. NELBO: 5357.4
*****
*****
Validation loss decreased (10785.209961 --> 10714.781250). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.52 .. Rec_loss: 11981.12 .. NELBO:
11982.64
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5323.03 .. NELB0: 5323.5
*****
*****
Validation loss decreased (10714.781250 --> 10646.995117). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.85 .. Rec_loss: 11878.47 .. NELB0:
11879.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5302.43 .. NELB0: 5302.63
*****
*****
Validation loss decreased (10646.995117 --> 10605.258789). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 11804.19 .. NELB0:
11804.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5304.42 .. NELB0: 5304.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11776.57 .. NELB0:
11776.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5325.4 .. NELB0: 5325.43
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11785.1 .. NELB0:
11785.16
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5347.2 .. NELBO: 5347.23
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.68 .. NELBO:
11796.73
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.83 .. NELBO: 5355.85
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.01 .. NELBO:
11792.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.49 .. NELBO: 5352.51
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 61
model: ETM(
  (t_drop): Dropout(p=0.09842249873880367, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1105.69 .. Rec_loss: 12264.42 .. NELBO:

```

```
13370.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.04 .. Rec_loss: 5445.5 .. NELBO: 5470.54
*****
*****
Validation loss decreased (inf --> 10941.072266). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 32.93 .. Rec_loss: 12254.02 .. NELBO:
12286.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.96 .. Rec_loss: 5437.05 .. NELBO: 5446.01
*****
*****
Validation loss decreased (10941.072266 --> 10892.019531). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 19.93 .. Rec_loss: 12225.66 .. NELBO:
12245.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.08 .. Rec_loss: 5420.53 .. NELBO: 5429.61
*****
*****
Validation loss decreased (10892.019531 --> 10859.214844). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 17.79 .. Rec_loss: 12173.26 .. NELBO:
12191.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.09 .. Rec_loss: 5394.74 .. NELBO: 5400.83
*****
*****
Validation loss decreased (10859.214844 --> 10801.658203). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 11.56 .. Rec_loss: 12094.91 .. NELBO:
```

```

12106.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.71 .. Rec_loss: 5361.84 .. NELBO: 5365.55
*****
*****
Validation loss decreased (10801.658203 --> 10731.088867). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 7.19 .. Rec_loss: 11995.99 .. NELBO:
12003.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.39 .. Rec_loss: 5328.32 .. NELBO: 5330.71
*****
*****
Validation loss decreased (10731.088867 --> 10661.435547). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.73 .. Rec_loss: 11894.03 .. NELBO:
11898.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 5304.99 .. NELBO: 5306.59
*****
*****
Validation loss decreased (10661.435547 --> 10613.174805). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.12 .. Rec_loss: 11814.75 .. NELBO:
11817.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 5302.33 .. NELBO: 5303.35
*****
*****
Validation loss decreased (10613.174805 --> 10606.690430). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.96 .. Rec_loss: 11778.33 .. NELBO:

```

```

11780.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 5320.07 .. NELBO: 5320.64
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 11781.77 .. NELBO:
11782.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5342.52 .. NELBO: 5342.78
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11794.65 .. NELBO:
11795.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5353.84 .. NELBO: 5353.94
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11793.26 .. NELBO:
11793.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5352.4 .. NELBO: 5352.44
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11780.08 .. NELBO:

```



```

11780.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.24 .. NELBO: 5345.26
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.09842249873880367, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1517.27 .. Rec_loss: 12264.16 .. NELBO:
13781.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 27.83 .. Rec_loss: 5445.71 .. NELBO:
5473.54
*****
*****
Validation loss decreased (inf --> 10947.067383). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 35.4 .. Rec_loss: 12254.12 .. NELBO:
12289.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.98 .. Rec_loss: 5437.27 .. NELBO: 5446.25
*****
*****

```

```

Validation loss decreased (10947.067383 --> 10892.506836). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 19.92 .. Rec_loss: 12226.79 .. NELBO:
12246.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.43 .. Rec_loss: 5420.66 .. NELBO: 5430.09
*****
*****
Validation loss decreased (10892.506836 --> 10860.195312). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 18.99 .. Rec_loss: 12174.26 .. NELBO:
12193.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.17 .. Rec_loss: 5394.21 .. NELBO: 5401.38
*****
*****
Validation loss decreased (10860.195312 --> 10802.768555). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 14.33 .. Rec_loss: 12094.04 .. NELBO:
12108.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.19 .. Rec_loss: 5360.51 .. NELBO: 5365.7
*****
*****
Validation loss decreased (10802.768555 --> 10731.399414). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 10.63 .. Rec_loss: 11992.85 .. NELBO:
12003.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.86 .. Rec_loss: 5326.57 .. NELBO: 5330.43
*****
*****

```

```

Validation loss decreased (10731.399414 --> 10660.855469). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 8.03 .. Rec_loss: 11889.51 .. NELBO:
11897.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.9 .. Rec_loss: 5303.8 .. NELBO: 5306.7
*****
*****
Validation loss decreased (10660.855469 --> 10613.406250). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 5.76 .. Rec_loss: 11810.73 .. NELBO:
11816.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.0 .. Rec_loss: 5302.75 .. NELBO: 5304.75
*****
*****
Validation loss decreased (10613.406250 --> 10609.490234). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 4.02 .. Rec_loss: 11777.36 .. NELBO:
11781.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 5321.91 .. NELBO: 5323.2
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.54 .. Rec_loss: 11782.61 .. NELBO:
11785.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 5344.38 .. NELBO: 5345.19
*****
*****

```

```

EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.62 .. Rec_loss: 11795.29 .. NELBO:
11796.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5354.74 .. NELBO: 5355.25
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 11792.89 .. NELBO:
11793.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5352.46 .. NELBO: 5352.81
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 11778.7 .. NELBO:
11779.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5345.1 .. NELBO: 5345.37
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.09842249873880367, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)

```

```

)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 808.83 .. Rec_loss: 12264.13 .. NELBO:
13072.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 17.0 .. Rec_loss: 5445.13 .. NELBO: 5462.13
*****
*****
Validation loss decreased (inf --> 10924.267578). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 20.4 .. Rec_loss: 12252.71 .. NELBO:
12273.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.75 .. Rec_loss: 5435.84 .. NELBO: 5438.59
*****
*****
Validation loss decreased (10924.267578 --> 10877.190430). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 5.3 .. Rec_loss: 12222.05 .. NELBO:
12227.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.67 .. Rec_loss: 5417.41 .. NELBO: 5419.08
*****
*****
Validation loss decreased (10877.190430 --> 10838.156250). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 3.12 .. Rec_loss: 12163.85 .. NELBO:
12166.97
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.94 .. Rec_loss: 5389.01 .. NELBO: 5389.95
*****
*****
Validation loss decreased (10838.156250 --> 10779.885742). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 1.91 .. Rec_loss: 12077.92 .. NELBO:
12079.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 5354.04 .. NELBO: 5354.63
*****
*****
Validation loss decreased (10779.885742 --> 10709.264648). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 1.18 .. Rec_loss: 11974.13 .. NELBO:
11975.31
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5320.88 .. NELBO: 5321.32
*****
*****
Validation loss decreased (10709.264648 --> 10642.648438). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.99 .. Rec_loss: 11872.09 .. NELBO:
11873.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5301.74 .. NELBO: 5302.17
*****
*****
Validation loss decreased (10642.648438 --> 10604.321289). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 11800.59 .. NELBO:
11801.43
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5305.64 .. NELBO: 5305.89
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 11777.16 .. NELBO:
11777.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5327.16 .. NELBO: 5327.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 11787.12 .. NELBO:
11787.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5347.79 .. NELBO: 5347.84
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11796.83 .. NELBO:
11796.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.04 .. NELBO: 5355.07
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11791.06 .. NELBO:
11791.11
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.13 .. NELBO: 5351.15
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 62
model: ETM(
  (t_drop): Dropout(p=0.05285700566325802, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=95, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=95, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=95, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1180.84 .. Rec_loss: 12264.43 .. NELBO:
13445.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 22.11 .. Rec_loss: 5445.75 .. NELBO:
5467.86
*****
*****
Validation loss decreased (inf --> 10935.731445). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 24.84 .. Rec_loss: 12254.12 .. NELBO:
12278.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.24 .. Rec_loss: 5436.7 .. NELBO: 5438.94
*****
*****
Validation loss decreased (10935.731445 --> 10877.891602). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 4.0 .. Rec_loss: 12224.65 .. NELBO:

```



```
12228.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.08 .. Rec_loss: 5419.14 .. NELBO: 5420.22
*****
*****
Validation loss decreased (10877.891602 --> 10840.443359). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 12169.49 .. NELBO:
12171.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5391.58 .. NELBO: 5391.96
*****
*****
Validation loss decreased (10840.443359 --> 10783.930664). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12085.67 .. NELBO:
12086.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5356.96 .. NELBO: 5357.09
*****
*****
Validation loss decreased (10783.930664 --> 10714.181641). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 11982.35 .. NELBO:
11982.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5323.11 .. NELBO: 5323.17
*****
*****
Validation loss decreased (10714.181641 --> 10646.342773). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11878.96 .. NELBO:
```

```

11879.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5302.22 .. NELB0: 5302.26
*****
*****
Validation loss decreased (10646.342773 --> 10604.520508). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11804.21 .. NELB0:
11804.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5304.36 .. NELB0: 5304.4
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11776.55 .. NELB0:
11776.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5325.76 .. NELB0: 5325.8
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11786.17 .. NELB0:
11786.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5347.66 .. NELB0: 5347.69
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11797.42 .. NELB0:

```

```

11797.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5356.01 .. NELBO: 5356.04
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11792.41 .. NELBO:
11792.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.42 .. NELBO: 5352.45
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05285700566325802, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=95, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=95, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=95, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 955.5 .. Rec_loss: 12264.82 .. NELBO:
13220.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.37 .. Rec_loss: 5445.83 .. NELBO: 5466.2
*****
*****
Validation loss decreased (inf --> 10932.398438). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 23.07 .. Rec_loss: 12254.89 .. NELBO:
12277.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.35 .. Rec_loss: 5437.61 .. NELBO: 5439.96
*****
*****
Validation loss decreased (10932.398438 --> 10879.932617). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 4.39 .. Rec_loss: 12227.89 .. NELBO:
12232.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 5420.96 .. NELBO: 5422.22
*****
*****
Validation loss decreased (10879.932617 --> 10844.447266). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 2.16 .. Rec_loss: 12175.48 .. NELBO:
12177.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 5394.53 .. NELBO: 5395.08
*****
*****
Validation loss decreased (10844.447266 --> 10790.162109). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 12095.38 .. NELBO:
12096.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5360.69 .. NELBO: 5360.94
*****
*****
Validation loss decreased (10790.162109 --> 10721.884766). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11994.01 .. NELBO:
11994.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5326.55 .. NELBO: 5326.68
*****
*****
Validation loss decreased (10721.884766 --> 10653.363281). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 11890.83 .. NELBO:
11891.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5303.75 .. NELBO: 5303.88
*****
*****
Validation loss decreased (10653.363281 --> 10607.756836). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 11811.69 .. NELBO:
11811.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5302.93 .. NELBO: 5303.05
*****
*****
Validation loss decreased (10607.756836 --> 10606.112305). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 11778.31 .. NELBO:
11778.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5322.33 .. NELBO: 5322.37
*****
*****
EarlyStopping counter: 1 out of 5

```

```

*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11784.25 .. NELBO:
11784.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5344.77 .. NELBO: 5344.8
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.41 .. NELBO:
11796.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.0 .. NELBO: 5355.03
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.37 .. NELBO:
11793.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.72 .. NELBO: 5352.75
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11779.1 .. NELBO:
11779.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5345.37 .. NELBO: 5345.4
*****
*****
EarlyStopping counter: 5 out of 5

```

```

Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05285700566325802, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=95, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=95, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=95, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1608.44 .. Rec_loss: 12264.25 .. NELBO:
13872.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 27.85 .. Rec_loss: 5445.46 .. NELBO:
5473.31
*****
*****
Validation loss decreased (inf --> 10946.615234). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 35.73 .. Rec_loss: 12253.27 .. NELBO:
12289.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.99 .. Rec_loss: 5436.22 .. NELBO:
5447.21
*****
*****
Validation loss decreased (10946.615234 --> 10894.411133). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 23.41 .. Rec_loss: 12223.33 .. NELBO:
12246.74
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.52 .. Rec_loss: 5418.4 .. NELBO: 5428.92
*****
*****
Validation loss decreased (10894.411133 --> 10857.842773). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 20.21 .. Rec_loss: 12167.58 .. NELBO:
12187.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.38 .. Rec_loss: 5390.91 .. NELBO: 5398.29
*****
*****
Validation loss decreased (10857.842773 --> 10796.585938). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 14.04 .. Rec_loss: 12084.0 .. NELBO:
12098.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.14 .. Rec_loss: 5356.79 .. NELBO: 5361.93
*****
*****
Validation loss decreased (10796.585938 --> 10723.859375). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 10.07 .. Rec_loss: 11981.96 .. NELBO:
11992.03
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.79 .. Rec_loss: 5323.52 .. NELBO: 5327.31
*****
*****
Validation loss decreased (10723.859375 --> 10654.627930). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 7.58 .. Rec_loss: 11879.76 .. NELBO:
11887.34
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.03 .. Rec_loss: 5302.72 .. NELB0: 5305.75
*****
*****
Validation loss decreased (10654.627930 --> 10611.509766). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 6.11 .. Rec_loss: 11805.94 .. NELB0:
11812.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.52 .. Rec_loss: 5304.06 .. NELB0: 5306.58
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 5.05 .. Rec_loss: 11777.2 .. NELB0:
11782.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.0 .. Rec_loss: 5324.18 .. NELB0: 5326.18
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 3.93 .. Rec_loss: 11784.45 .. NELB0:
11788.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.5 .. Rec_loss: 5345.23 .. NELB0: 5346.73
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.02 .. Rec_loss: 11795.5 .. NELB0:
11798.52
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 5353.31 .. NELBO: 5354.42
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.23 .. Rec_loss: 11790.71 .. NELBO:
11792.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.87 .. Rec_loss: 5349.77 .. NELBO: 5350.64
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 63
model: ETM(
  (t_drop): Dropout(p=0.04996208298615453, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 85.34 .. Rec_loss: 12264.37 .. NELBO:
12349.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.45 .. Rec_loss: 5444.11 .. NELBO: 5451.56
*****
*****
Validation loss decreased (inf --> 10903.108398). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.05 .. Rec_loss: 12248.8 .. NELBO:

```

```
12256.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.31 .. NELBO: 5432.76
*****
*****
Validation loss decreased (10903.108398 --> 10865.522461). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12210.25 .. NELBO:
12210.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.9 .. NELBO: 5409.99
*****
*****
Validation loss decreased (10865.522461 --> 10819.964844). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12141.4 .. NELBO:
12141.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.8 .. NELBO: 5377.83
*****
*****
Validation loss decreased (10819.964844 --> 10755.660156). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12046.44 .. NELBO:
12046.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.6 .. NELBO: 5341.62
*****
*****
Validation loss decreased (10755.660156 --> 10683.249023). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11939.78 .. NELBO:
```

```
11939.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.68 .. NELB0: 5311.7
*****
*****
Validation loss decreased (10683.249023 --> 10623.412109). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11845.42 .. NELB0:
11845.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.28 .. NELB0: 5300.3
*****
*****
Validation loss decreased (10623.412109 --> 10600.609375). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.56 .. NELB0:
11790.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.0 .. NELB0: 5312.02
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.01 .. NELB0:
11781.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.08 .. NELB0: 5335.1
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.93 .. NELB0:
```

```

11792.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.92 .. NELBO: 5350.94
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.01 .. NELBO:
11796.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.14 .. NELBO: 5353.16
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.04 .. NELBO:
11784.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.38 .. NELBO: 5347.4
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04996208298615453, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)

```

```

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 85.63 .. Rec_loss: 12264.31 .. NELBO:
12349.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.98 .. Rec_loss: 5444.37 .. NELBO: 5452.35
*****
*****
Validation loss decreased (inf --> 10904.696289). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.57 .. Rec_loss: 12249.93 .. NELBO:
12258.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5433.35 .. NELBO: 5433.74
*****
*****
Validation loss decreased (10904.696289 --> 10867.489258). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12213.31 .. NELBO:
12213.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.76 .. NELBO: 5411.83
*****
*****
Validation loss decreased (10867.489258 --> 10823.659180). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12146.96 .. NELBO:
12147.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.34 .. NELBO: 5380.37
*****
*****
Validation loss decreased (10823.659180 --> 10760.729492). Saving model ...

```

```
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12053.49 .. NELBO:
12053.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.2 .. NELBO: 5344.22
*****
*****
Validation loss decreased (10760.729492 --> 10688.431641). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11945.83 .. NELBO:
11945.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.43 .. NELBO: 5313.45
*****
*****
Validation loss decreased (10688.431641 --> 10626.908203). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11850.35 .. NELBO:
11850.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.43 .. NELBO: 5300.45
*****
*****
Validation loss decreased (10626.908203 --> 10600.905273). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.99 .. NELBO:
11792.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.77 .. NELBO: 5310.79
*****
*****
EarlyStopping counter: 1 out of 5
```

```

*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.1 .. NELBO:
11780.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.89 .. NELBO: 5333.91
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.22 .. NELBO:
11792.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.84 .. NELBO: 5350.86
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.68 .. NELBO:
11796.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.94 .. NELBO: 5353.96
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.44 .. NELBO:
11786.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.32 .. NELBO: 5348.34
*****
*****
EarlyStopping counter: 5 out of 5

```


Early stopping

```
model: ETM(
  (t_drop): Dropout(p=0.04996208298615453, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 83.71 .. Rec_loss: 12264.09 .. NELBO:
12347.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.44 .. Rec_loss: 5444.07 .. NELBO: 5451.51
*****
*****
Validation loss decreased (inf --> 10903.015625). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.1 .. Rec_loss: 12248.23 .. NELBO:
12256.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5431.58 .. NELBO: 5432.01
*****
*****
Validation loss decreased (10903.015625 --> 10864.026367). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12207.13 .. NELBO:
12207.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.15 .. NELBO: 5408.22
```

```

*****
*****
Validation loss decreased (10864.026367 --> 10816.435547). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12135.5 .. NELBO:
12135.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.15 .. NELBO: 5375.17
*****
*****
Validation loss decreased (10816.435547 --> 10750.348633). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12037.75 .. NELBO:
12037.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.78 .. NELBO: 5338.8
*****
*****
Validation loss decreased (10750.348633 --> 10677.601562). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11929.83 .. NELBO:
11929.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.93 .. NELBO: 5309.95
*****
*****
Validation loss decreased (10677.601562 --> 10619.891602). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11837.59 .. NELBO:
11837.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.65 .. NELBO: 5300.67

```

```

*****
*****
Validation loss decreased (10619.891602 --> 10601.332031). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.37 .. NELBO:
11787.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.24 .. NELBO: 5314.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.64 .. NELBO:
11781.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.49 .. NELBO: 5337.51
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.37 .. NELBO:
11794.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.12 .. NELBO: 5352.14
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.59 .. NELBO:
11795.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.14 .. NELBO: 5353.16

```

```

*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.86 .. NELBO:
11783.89
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.77 .. NELBO: 5346.79
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 64
model: ETM(
  (t_drop): Dropout(p=0.10309170248147452, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1196.47 .. Rec_loss: 12264.89 .. NELBO:
13461.36
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.57 .. Rec_loss: 5445.63 .. NELBO: 5471.2
*****
*****
Validation loss decreased (inf --> 10942.412109). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 34.08 .. Rec_loss: 12254.61 .. NELBO:
12288.69
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 11.38 .. Rec_loss: 5437.15 .. NELBO:
5448.53
*****
*****
Validation loss decreased (10942.412109 --> 10897.068359). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 24.01 .. Rec_loss: 12226.66 .. NELBO:
12250.67
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.68 .. Rec_loss: 5420.27 .. NELBO: 5429.95
*****
*****
Validation loss decreased (10897.068359 --> 10859.896484). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 18.83 .. Rec_loss: 12173.6 .. NELBO:
12192.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.48 .. Rec_loss: 5393.81 .. NELBO: 5400.29
*****
*****
Validation loss decreased (10859.896484 --> 10800.572266). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 12.64 .. Rec_loss: 12093.14 .. NELBO:
12105.78
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.17 .. Rec_loss: 5360.15 .. NELBO: 5364.32
*****
*****
Validation loss decreased (10800.572266 --> 10728.644531). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 8.36 .. Rec_loss: 11992.36 .. NELBO:
12000.72

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.92 .. Rec_loss: 5326.29 .. NELBO: 5329.21
*****
*****
Validation loss decreased (10728.644531 --> 10658.424805). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 6.13 .. Rec_loss: 11888.86 .. NELBO:
11894.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.31 .. Rec_loss: 5303.65 .. NELBO: 5305.96
*****
*****
Validation loss decreased (10658.424805 --> 10611.921875). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.82 .. Rec_loss: 11810.86 .. NELBO:
11815.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 5302.57 .. NELBO: 5304.42
*****
*****
Validation loss decreased (10611.921875 --> 10608.825195). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 3.92 .. Rec_loss: 11778.22 .. NELBO:
11782.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.33 .. Rec_loss: 5321.36 .. NELBO: 5322.69
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.64 .. Rec_loss: 11783.06 .. NELBO:
11785.7

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.85 .. Rec_loss: 5343.14 .. NELBO: 5343.99
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.66 .. Rec_loss: 11794.36 .. NELBO:
11796.02
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5353.05 .. NELBO: 5353.58
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.07 .. Rec_loss: 11791.76 .. NELBO:
11792.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5350.79 .. NELBO: 5351.13
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 11777.26 .. NELBO:
11777.95
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5343.66 .. NELBO: 5343.9
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.10309170248147452, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)

```

```

(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=70, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1073.87 .. Rec_loss: 12264.27 .. NELBO:
13338.14
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 28.15 .. Rec_loss: 5445.81 .. NELBO:
5473.96
*****
*****
Validation loss decreased (inf --> 10947.929688). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 41.38 .. Rec_loss: 12255.29 .. NELBO:
12296.67
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 19.92 .. Rec_loss: 5437.86 .. NELBO:
5457.78
*****
*****
Validation loss decreased (10947.929688 --> 10915.563477). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 41.9 .. Rec_loss: 12229.04 .. NELBO:
12270.94
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.5 .. Rec_loss: 5421.89 .. NELBO: 5438.39
*****
*****

```



```

Validation loss decreased (10915.563477 --> 10876.775391). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 32.28 .. Rec_loss: 12178.78 .. NELBO:
12211.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 11.16 .. Rec_loss: 5397.14 .. NELBO: 5408.3
*****
*****
Validation loss decreased (10876.775391 --> 10816.593750). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 22.22 .. Rec_loss: 12102.95 .. NELBO:
12125.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.95 .. Rec_loss: 5365.17 .. NELBO: 5373.12
*****
*****
Validation loss decreased (10816.593750 --> 10746.239258). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 16.69 .. Rec_loss: 12006.07 .. NELBO:
12022.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.3 .. Rec_loss: 5331.49 .. NELBO: 5337.79
*****
*****
Validation loss decreased (10746.239258 --> 10675.583984). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 13.36 .. Rec_loss: 11904.62 .. NELBO:
11917.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.08 .. Rec_loss: 5306.54 .. NELBO: 5311.62
*****
*****

```

```

Validation loss decreased (10675.583984 --> 10623.251953). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 10.61 .. Rec_loss: 11821.51 .. NELBO:
11832.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.69 .. Rec_loss: 5301.38 .. NELBO: 5305.07
*****
*****
Validation loss decreased (10623.251953 --> 10610.130859). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 7.45 .. Rec_loss: 11779.97 .. NELBO:
11787.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.37 .. Rec_loss: 5317.01 .. NELBO: 5319.38
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 4.74 .. Rec_loss: 11779.11 .. NELBO:
11783.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.38 .. Rec_loss: 5338.97 .. NELBO: 5340.35
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.79 .. Rec_loss: 11791.67 .. NELBO:
11794.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 5350.91 .. NELBO: 5351.72
*****
*****

```

```

EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.04 .. Rec_loss: 11791.51 .. NELBO:
11793.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 5349.95 .. NELBO: 5350.76
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 1.99 .. Rec_loss: 11778.32 .. NELBO:
11780.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 5343.3 .. NELBO: 5344.09
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.10309170248147452, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1024.28 .. Rec_loss: 12264.52 .. NELBO:
13288.8
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 21.76 .. Rec_loss: 5445.79 .. NELBO:
5467.55
*****
*****
Validation loss decreased (inf --> 10935.095703). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 27.46 .. Rec_loss: 12254.37 .. NELBO:
12281.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.31 .. Rec_loss: 5436.73 .. NELBO: 5444.04
*****
*****
Validation loss decreased (10935.095703 --> 10888.074219). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 16.18 .. Rec_loss: 12225.92 .. NELBO:
12242.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.87 .. Rec_loss: 5419.68 .. NELBO: 5427.55
*****
*****
Validation loss decreased (10888.074219 --> 10855.101562). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 15.8 .. Rec_loss: 12172.15 .. NELBO:
12187.95
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.49 .. Rec_loss: 5392.86 .. NELBO: 5398.35
*****
*****
Validation loss decreased (10855.101562 --> 10796.707031). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 10.48 .. Rec_loss: 12090.77 .. NELBO:
12101.25
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.27 .. Rec_loss: 5358.92 .. NELBO: 5362.19
*****
*****
Validation loss decreased (10796.707031 --> 10724.388672). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 6.06 .. Rec_loss: 11989.57 .. NELBO:
11995.63
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 5325.16 .. NELBO: 5327.01
*****
*****
Validation loss decreased (10724.388672 --> 10654.009766). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.54 .. Rec_loss: 11886.76 .. NELBO:
11890.3
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 5303.1 .. NELBO: 5304.1
*****
*****
Validation loss decreased (10654.009766 --> 10608.202148). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.87 .. Rec_loss: 11808.97 .. NELBO:
11810.84
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5303.09 .. NELBO: 5303.61
*****
*****
Validation loss decreased (10608.202148 --> 10607.220703). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.95 .. Rec_loss: 11777.72 .. NELBO:
11778.67
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5322.97 .. NELBO: 5323.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11784.43 .. NELBO:
11784.88
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5345.14 .. NELBO: 5345.24
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 11795.88 .. NELBO:
11796.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5354.67 .. NELBO: 5354.71
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11792.39 .. NELBO:
11792.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.94 .. NELBO: 5351.96
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11778.04 .. NELBO:
11778.08
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.55 .. NELBO: 5344.57
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 65
model: ETM(
  (t_drop): Dropout(p=0.17702025523779424, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 722.34 .. Rec_loss: 12264.62 .. NELBO:
12986.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.28 .. Rec_loss: 5445.59 .. NELBO:
5461.87
*****
*****
Validation loss decreased (inf --> 10923.750000). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 18.3 .. Rec_loss: 12254.81 .. NELBO:
12273.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.78 .. Rec_loss: 5437.25 .. NELBO: 5438.03
*****
*****
Validation loss decreased (10923.750000 --> 10876.050781). Saving model ...
*****
*****

```

```

Epoch----->3 .. LR: 0.005 .. KL_theta: 1.52 .. Rec_loss: 12225.99 .. NELBO:
12227.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5419.53 .. NELBO: 5419.89
*****
*****
Validation loss decreased (10876.050781 --> 10839.767578). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12170.38 .. NELBO:
12171.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5391.73 .. NELBO: 5391.84
*****
*****
Validation loss decreased (10839.767578 --> 10783.677734). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 12086.5 .. NELBO:
12086.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5356.93 .. NELBO: 5356.98
*****
*****
Validation loss decreased (10783.677734 --> 10713.956055). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11982.86 .. NELBO:
11982.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5323.1 .. NELBO: 5323.17
*****
*****
Validation loss decreased (10713.956055 --> 10646.329102). Saving model ...
*****
*****

```



```

Epoch----->7 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 11879.56 .. NELBO:
11879.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5302.34 .. NELBO: 5302.56
*****
*****
Validation loss decreased (10646.329102 --> 10605.123047). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11805.4 .. NELBO:
11805.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5304.49 .. NELBO: 5304.59
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11778.04 .. NELBO:
11778.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5325.35 .. NELBO: 5325.38
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11786.59 .. NELBO:
11786.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.83 .. NELBO: 5346.86
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****

```

```

Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11797.02 .. NELBO:
11797.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.24 .. NELBO: 5355.26
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11791.43 .. NELBO:
11791.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.96 .. NELBO: 5351.98
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.17702025523779424, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 868.63 .. Rec_loss: 12264.47 .. NELBO:
13133.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.21 .. Rec_loss: 5445.79 .. NELBO: 5466.0
*****
*****

```

```

Validation loss decreased (inf --> 10932.003906). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 24.35 .. Rec_loss: 12254.57 .. NELBO:
12278.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.86 .. Rec_loss: 5437.15 .. NELBO: 5440.01
*****
*****
Validation loss decreased (10932.003906 --> 10880.024414). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 6.23 .. Rec_loss: 12226.43 .. NELBO:
12232.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.04 .. Rec_loss: 5420.06 .. NELBO: 5422.1
*****
*****
Validation loss decreased (10880.024414 --> 10844.185547). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 4.15 .. Rec_loss: 12172.43 .. NELBO:
12176.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.18 .. Rec_loss: 5393.14 .. NELBO: 5394.32
*****
*****
Validation loss decreased (10844.185547 --> 10788.650391). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.72 .. Rec_loss: 12090.7 .. NELBO:
12093.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 5359.07 .. NELBO: 5359.82
*****
*****

```

```
Validation loss decreased (10788.650391 --> 10719.639648). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.58 .. Rec_loss: 11989.66 .. NELBO:
11991.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5325.21 .. NELBO: 5325.66
*****
*****
Validation loss decreased (10719.639648 --> 10651.328125). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 11885.74 .. NELBO:
11886.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5303.16 .. NELBO: 5303.43
*****
*****
Validation loss decreased (10651.328125 --> 10606.871094). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 11808.74 .. NELBO:
11809.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5303.16 .. NELBO: 5303.33
*****
*****
Validation loss decreased (10606.871094 --> 10606.671875). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 11777.25 .. NELBO:
11777.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5323.02 .. NELBO: 5323.1
*****
*****
```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11783.61 .. NELBO:
11783.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5345.44 .. NELBO: 5345.48
*****
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11796.4 .. NELBO:
11796.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.42 .. NELBO: 5355.44
*****
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.43 .. NELBO:
11793.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.94 .. NELBO: 5352.96
*****
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11778.49 .. NELBO:
11778.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.55 .. NELBO: 5345.57
*****
*****
*****

```

```

EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.17702025523779424, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 971.55 .. Rec_loss: 12265.29 .. NELBO:
13236.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 17.15 .. Rec_loss: 5445.81 .. NELBO:
5462.96
*****
*****
Validation loss decreased (inf --> 10925.914062). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 19.52 .. Rec_loss: 12255.14 .. NELBO:
12274.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.65 .. Rec_loss: 5437.75 .. NELBO: 5439.4
*****
*****
Validation loss decreased (10925.914062 --> 10878.792969). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 3.4 .. Rec_loss: 12228.17 .. NELBO:
12231.57
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.83 .. Rec_loss: 5421.3 .. NELBO: 5422.13
*****
*****
Validation loss decreased (10878.792969 --> 10844.259766). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 1.37 .. Rec_loss: 12176.08 .. NELBO:
12177.45
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5395.0 .. NELBO: 5395.2
*****
*****
Validation loss decreased (10844.259766 --> 10790.408203). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 12096.1 .. NELBO:
12096.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5361.2 .. NELBO: 5361.26
*****
*****
Validation loss decreased (10790.408203 --> 10722.521484). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11995.07 .. NELBO:
11995.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5326.93 .. NELBO: 5326.96
*****
*****
Validation loss decreased (10722.521484 --> 10653.920898). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11890.93 .. NELBO:
11891.0
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5303.79 .. NELBO: 5303.82
*****
*****
Validation loss decreased (10653.920898 --> 10607.648438). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11811.55 .. NELBO:
11811.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5302.68 .. NELBO: 5302.71
*****
*****
Validation loss decreased (10607.648438 --> 10605.423828). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11777.23 .. NELBO:
11777.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5322.32 .. NELBO: 5322.35
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11783.34 .. NELBO:
11783.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5345.35 .. NELBO: 5345.38
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11796.89 .. NELBO:
11796.95
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.85 .. NELBO: 5355.88
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.45 .. NELBO:
11793.5
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.56 .. NELBO: 5353.59
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11779.13 .. NELBO:
11779.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.1 .. NELBO: 5346.13
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 66
model: ETM(
  (t_drop): Dropout(p=0.10634737923657511, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 12263.73 .. NELBO:

```

```

12264.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 5442.85 .. NELBO: 5443.64
*****
*****
Validation loss decreased (inf --> 10887.287109). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.47 .. Rec_loss: 12242.72 .. NELBO:
12244.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5426.56 .. NELBO: 5426.58
*****
*****
Validation loss decreased (10887.287109 --> 10853.156250). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12190.58 .. NELBO:
12190.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5398.43 .. NELBO: 5398.73
*****
*****
Validation loss decreased (10853.156250 --> 10797.457031). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 12106.49 .. NELBO:
12106.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5362.28 .. NELBO: 5362.51
*****
*****
Validation loss decreased (10797.457031 --> 10725.021484). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.8 .. Rec_loss: 12000.1 .. NELBO:

```

```
12000.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.77 .. Rec_loss: 5326.2 .. NELB0: 5327.97
*****
*****
Validation loss decreased (10725.021484 --> 10655.937500). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.44 .. Rec_loss: 11893.22 .. NELB0:
11895.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5303.9 .. NELB0: 5304.05
*****
*****
Validation loss decreased (10655.937500 --> 10608.092773). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 11816.42 .. NELB0:
11816.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5303.24 .. NELB0: 5303.34
*****
*****
Validation loss decreased (10608.092773 --> 10606.673828). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 11783.11 .. NELB0:
11783.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5321.55 .. NELB0: 5321.71
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11786.02 .. NELB0:
```

```

11786.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 5341.46 .. NELBO: 5342.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.24 .. Rec_loss: 11793.17 .. NELBO:
11794.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.06 .. Rec_loss: 5349.56 .. NELBO: 5350.62
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.09 .. Rec_loss: 11785.79 .. NELBO:
11788.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.33 .. Rec_loss: 5344.46 .. NELBO: 5347.79
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 5.49 .. Rec_loss: 11768.68 .. NELBO:
11774.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.82 .. Rec_loss: 5338.52 .. NELBO: 5341.34
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
    (t_drop): Dropout(p=0.10634737923657511, inplace=False)

```

```

(theta_act): SELU()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=84, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): SELU()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 12264.01 .. NELBO:
12264.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 5443.47 .. NELBO: 5444.9
*****
*****
Validation loss decreased (inf --> 10889.792969). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.66 .. Rec_loss: 12245.4 .. NELBO:
12247.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5428.66 .. NELBO: 5428.69
*****
*****
Validation loss decreased (10889.792969 --> 10857.387695). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12197.7 .. NELBO:
12198.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5402.22 .. NELBO: 5402.51
*****
*****
Validation loss decreased (10857.387695 --> 10805.029297). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 12117.95 .. NELBO:
12118.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.98 .. Rec_loss: 5366.92 .. NELBO: 5367.9
*****
*****
Validation loss decreased (10805.029297 --> 10735.797852). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.2 .. Rec_loss: 12013.83 .. NELBO:
12017.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.82 .. Rec_loss: 5330.88 .. NELBO: 5331.7
*****
*****
Validation loss decreased (10735.797852 --> 10663.411133). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 11908.95 .. NELBO:
11909.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5305.72 .. NELBO: 5305.97
*****
*****
Validation loss decreased (10663.411133 --> 10611.943359). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 11824.58 .. NELBO:
11825.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5301.67 .. NELBO: 5301.92
*****
*****
Validation loss decreased (10611.943359 --> 10603.837891). Saving model ...

```

```

*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 11784.65 .. NELBO:
11784.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5318.08 .. NELBO: 5318.52
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 11784.27 .. NELBO:
11784.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5339.72 .. NELBO: 5339.94
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11793.75 .. NELBO:
11794.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 5349.99 .. NELBO: 5350.61
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.24 .. Rec_loss: 11789.54 .. NELBO:
11790.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.81 .. Rec_loss: 5347.25 .. NELBO: 5349.06
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.18 .. Rec_loss: 11774.17 .. NELBO:
11777.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 5341.41 .. NELBO: 5342.68
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.10634737923657511, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 12263.6 .. NELBO:
12263.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 5442.63 .. NELBO: 5443.92
*****
*****
Validation loss decreased (inf --> 10887.826172). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.65 .. Rec_loss: 12241.74 .. NELBO:
12243.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5426.04 .. NELBO: 5426.07

```



```

*****
*****
Validation loss decreased (10887.826172 --> 10852.122070). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12188.7 .. NELBO:
12189.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5397.67 .. NELBO: 5398.05
*****
*****
Validation loss decreased (10852.122070 --> 10796.100586). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12103.7 .. NELBO:
12104.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.91 .. Rec_loss: 5361.25 .. NELBO: 5362.16
*****
*****
Validation loss decreased (10796.100586 --> 10724.333984). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.29 .. Rec_loss: 11996.39 .. NELBO:
11998.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.74 .. Rec_loss: 5325.82 .. NELBO: 5326.56
*****
*****
Validation loss decreased (10724.333984 --> 10653.108398). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.91 .. Rec_loss: 11892.49 .. NELBO:
11893.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5303.46 .. NELBO: 5303.86

```

```

*****
*****
Validation loss decreased (10653.108398 --> 10607.718750). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 11813.95 .. NELBO:
11815.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5303.24 .. NELBO: 5303.48
*****
*****
Validation loss decreased (10607.718750 --> 10606.948242). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 11782.13 .. NELBO:
11782.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5322.34 .. NELBO: 5322.37
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11786.21 .. NELBO:
11786.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 5342.05 .. NELBO: 5342.78
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.37 .. Rec_loss: 11793.27 .. NELBO:
11794.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 5350.16 .. NELBO: 5350.86

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.36 .. Rec_loss: 11787.69 .. NELBO:
11789.05
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 5346.54 .. NELBO: 5347.83
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.38 .. Rec_loss: 11772.12 .. NELBO:
11775.5
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.82 .. Rec_loss: 5339.2 .. NELBO: 5341.02
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 67
model: ETM(
  (t_drop): Dropout(p=0.06877329752709088, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1013.01 .. Rec_loss: 12264.83 .. NELBO:
13277.84
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 30.18 .. Rec_loss: 5446.29 .. NELBO:
5476.47
*****
*****
Validation loss decreased (inf --> 10952.946289). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 41.7 .. Rec_loss: 12256.04 .. NELBO:
12297.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 15.4 .. Rec_loss: 5438.08 .. NELBO: 5453.48
*****
*****
Validation loss decreased (10952.946289 --> 10906.957031). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 33.41 .. Rec_loss: 12229.34 .. NELBO:
12262.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 14.71 .. Rec_loss: 5422.13 .. NELBO:
5436.84
*****
*****
Validation loss decreased (10906.957031 --> 10873.680664). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 27.13 .. Rec_loss: 12178.86 .. NELBO:
12205.99
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.15 .. Rec_loss: 5396.89 .. NELBO: 5405.04
*****
*****
Validation loss decreased (10873.680664 --> 10810.073242). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 14.9 .. Rec_loss: 12101.99 .. NELBO:

```

```
12116.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.5 .. Rec_loss: 5364.26 .. NELB0: 5368.76
*****
*****
Validation loss decreased (10810.073242 --> 10737.514648). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 8.6 .. Rec_loss: 12004.0 .. NELB0:
12012.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.62 .. Rec_loss: 5330.3 .. NELB0: 5332.92
*****
*****
Validation loss decreased (10737.514648 --> 10665.850586). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.03 .. Rec_loss: 11901.21 .. NELB0:
11906.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.62 .. Rec_loss: 5305.7 .. NELB0: 5307.32
*****
*****
Validation loss decreased (10665.850586 --> 10614.622070). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.13 .. Rec_loss: 11818.71 .. NELB0:
11821.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 5301.56 .. NELB0: 5302.56
*****
*****
Validation loss decreased (10614.622070 --> 10605.125000). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.9 .. Rec_loss: 11779.4 .. NELB0:
```

```

11781.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 5318.67 .. NELBO: 5319.23
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.01 .. Rec_loss: 11780.87 .. NELBO:
11781.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5341.67 .. NELBO: 5341.94
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 11794.18 .. NELBO:
11794.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5353.83 .. NELBO: 5353.95
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 11794.29 .. NELBO:
11794.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5352.84 .. NELBO: 5352.89
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11780.9 .. NELBO:

```

```

11780.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.72 .. NELBO: 5345.74
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06877329752709088, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1216.94 .. Rec_loss: 12263.66 .. NELBO:
13480.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.71 .. Rec_loss: 5445.54 .. NELBO:
5470.25
*****
*****
Validation loss decreased (inf --> 10940.511719). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 28.79 .. Rec_loss: 12253.54 .. NELBO:
12282.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.96 .. Rec_loss: 5436.49 .. NELBO: 5440.45
*****
*****

```

```

Validation loss decreased (10940.511719 --> 10880.898438). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 7.88 .. Rec_loss: 12224.26 .. NELBO:
12232.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.72 .. Rec_loss: 5419.05 .. NELBO: 5421.77
*****
*****
Validation loss decreased (10880.898438 --> 10843.531250). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 4.62 .. Rec_loss: 12169.03 .. NELBO:
12173.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 5391.9 .. NELBO: 5392.95
*****
*****
Validation loss decreased (10843.531250 --> 10785.895508). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.74 .. Rec_loss: 12086.45 .. NELBO:
12088.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5357.78 .. NELBO: 5358.09
*****
*****
Validation loss decreased (10785.895508 --> 10716.184570). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 11984.03 .. NELBO:
11984.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5324.23 .. NELBO: 5324.33
*****
*****

```



```

Validation loss decreased (10716.184570 --> 10648.654297). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 11881.37 .. NELBO:
11881.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5303.01 .. NELBO: 5303.08
*****
*****
Validation loss decreased (10648.654297 --> 10606.173828). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 11805.72 .. NELBO:
11805.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5304.2 .. NELBO: 5304.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11776.13 .. NELBO:
11776.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5324.8 .. NELBO: 5324.83
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11784.6 .. NELBO:
11784.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.94 .. NELBO: 5346.97
*****
*****

```

```

EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.71 .. NELBO:
11796.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5356.09 .. NELBO: 5356.12
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.11 .. NELBO:
11793.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.02 .. NELBO: 5353.05
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06877329752709088, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1514.2 .. Rec_loss: 12264.3 .. NELBO:
13778.5
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 24.98 .. Rec_loss: 5445.94 .. NELBO:
5470.92
*****
*****
Validation loss decreased (inf --> 10941.836914). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 30.48 .. Rec_loss: 12254.85 .. NELBO:
12285.33
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.54 .. Rec_loss: 5437.39 .. NELBO: 5443.93
*****
*****
Validation loss decreased (10941.836914 --> 10887.856445). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 12.95 .. Rec_loss: 12227.24 .. NELBO:
12240.19
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.68 .. Rec_loss: 5420.85 .. NELBO: 5425.53
*****
*****
Validation loss decreased (10887.856445 --> 10851.055664). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 8.6 .. Rec_loss: 12174.69 .. NELBO:
12183.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.66 .. Rec_loss: 5394.9 .. NELBO: 5397.56
*****
*****
Validation loss decreased (10851.055664 --> 10795.121094). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 5.09 .. Rec_loss: 12095.64 .. NELBO:
12100.73
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.78 .. Rec_loss: 5361.54 .. NELB0: 5363.32
*****
*****
Validation loss decreased (10795.121094 --> 10726.641602). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.63 .. Rec_loss: 11995.31 .. NELB0:
11998.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.42 .. Rec_loss: 5327.59 .. NELB0: 5329.01
*****
*****
Validation loss decreased (10726.641602 --> 10658.011719). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 2.9 .. Rec_loss: 11892.03 .. NELB0:
11894.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.24 .. Rec_loss: 5304.4 .. NELB0: 5305.64
*****
*****
Validation loss decreased (10658.011719 --> 10611.274414). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 2.58 .. Rec_loss: 11812.31 .. NELB0:
11814.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 5302.7 .. NELB0: 5303.79
*****
*****
Validation loss decreased (10611.274414 --> 10607.582031). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.21 .. Rec_loss: 11777.18 .. NELB0:
11779.39
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.85 .. Rec_loss: 5321.41 .. NELBO: 5322.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.75 .. Rec_loss: 11782.59 .. NELBO:
11784.34
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 5343.84 .. NELBO: 5344.48
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.2 .. Rec_loss: 11794.98 .. NELBO:
11796.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5354.45 .. NELBO: 5354.95
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.98 .. Rec_loss: 11793.17 .. NELBO:
11794.15
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5352.43 .. NELBO: 5352.81
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 11779.22 .. NELBO:
11779.95
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5345.12 .. NELBO: 5345.41
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 68
model: ETM(
  (t_drop): Dropout(p=0.07757306648118548, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=55, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=55, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=55, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1273.07 .. Rec_loss: 12263.79 .. NELBO:
13536.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 26.59 .. Rec_loss: 5445.32 .. NELBO:
5471.91
*****
*****
Validation loss decreased (inf --> 10943.816406). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 34.16 .. Rec_loss: 12252.12 .. NELBO:
12286.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.59 .. Rec_loss: 5435.1 .. NELBO: 5447.69
*****
*****
Validation loss decreased (10943.816406 --> 10895.361328). Saving model ...
*****
*****

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Epoch----->3 .. LR: 0.005 .. KL_theta: 27.82 .. Rec_loss: 12220.03 .. NELBO:
12247.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 11.73 .. Rec_loss: 5416.51 .. NELBO:
5428.24
*****
*****
Validation loss decreased (10895.361328 --> 10856.479492). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 21.55 .. Rec_loss: 12162.38 .. NELBO:
12183.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.14 .. Rec_loss: 5388.84 .. NELBO: 5395.98
*****
*****
Validation loss decreased (10856.479492 --> 10791.957031). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 13.53 .. Rec_loss: 12078.34 .. NELBO:
12091.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.94 .. Rec_loss: 5354.57 .. NELBO: 5359.51
*****
*****
Validation loss decreased (10791.957031 --> 10719.020508). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 9.93 .. Rec_loss: 11974.83 .. NELBO:
11984.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.0 .. Rec_loss: 5321.57 .. NELBO: 5325.57
*****
*****
Validation loss decreased (10719.020508 --> 10651.151367). Saving model ...
*****

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```

*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 8.05 .. Rec_loss: 11874.51 .. NELBO:
11882.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.27 .. Rec_loss: 5301.98 .. NELBO: 5305.25
*****
*****
Validation loss decreased (10651.151367 --> 10610.485352). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 6.19 .. Rec_loss: 11801.31 .. NELBO:
11807.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.33 .. Rec_loss: 5304.93 .. NELBO: 5307.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 4.33 .. Rec_loss: 11775.93 .. NELBO:
11780.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.37 .. Rec_loss: 5325.76 .. NELBO: 5327.13
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.47 .. Rec_loss: 11784.65 .. NELBO:
11787.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 5346.5 .. NELBO: 5347.14
*****
*****
EarlyStopping counter: 3 out of 5
*****

```



```

*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 11795.31 .. NELBO:
11796.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5354.25 .. NELBO: 5354.49
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 11789.72 .. NELBO:
11790.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5350.69 .. NELBO: 5350.77
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.07757306648118548, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=55, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=55, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=55, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1012.58 .. Rec_loss: 12264.46 .. NELBO:
13277.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 38.7 .. Rec_loss: 5445.2 .. NELBO: 5483.9
*****

```

```

*****
Validation loss decreased (inf --> 10967.795898). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 57.5 .. Rec_loss: 12253.87 .. NELBO:
12311.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 31.38 .. Rec_loss: 5436.98 .. NELBO:
5468.36
*****
*****
Validation loss decreased (10967.795898 --> 10936.727539). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 68.99 .. Rec_loss: 12225.49 .. NELBO:
12294.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 30.91 .. Rec_loss: 5420.41 .. NELBO:
5451.32
*****
*****
Validation loss decreased (10936.727539 --> 10902.645508). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 58.39 .. Rec_loss: 12174.16 .. NELBO:
12232.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 21.27 .. Rec_loss: 5396.03 .. NELBO: 5417.3
*****
*****
Validation loss decreased (10902.645508 --> 10834.604492). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 42.96 .. Rec_loss: 12101.12 .. NELBO:
12144.08
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 19.3 .. Rec_loss: 5364.66 .. NELBO: 5383.96
*****
*****
Validation loss decreased (10834.604492 --> 10767.922852). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 41.29 .. Rec_loss: 12004.42 .. NELBO:
12045.71
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.92 .. Rec_loss: 5331.45 .. NELBO:
5350.37
*****
*****
Validation loss decreased (10767.922852 --> 10700.746094). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 39.31 .. Rec_loss: 11903.83 .. NELBO:
11943.14
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.88 .. Rec_loss: 5306.62 .. NELBO: 5323.5
*****
*****
Validation loss decreased (10700.746094 --> 10647.012695). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 34.37 .. Rec_loss: 11822.72 .. NELBO:
11857.09
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 14.32 .. Rec_loss: 5300.66 .. NELBO:
5314.98
*****
*****
Validation loss decreased (10647.012695 --> 10629.958008). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 28.96 .. Rec_loss: 11780.85 .. NELBO:
11809.81
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 11.41 .. Rec_loss: 5314.44 .. NELBO:
5325.85
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 23.27 .. Rec_loss: 11777.9 .. NELBO:
11801.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.36 .. Rec_loss: 5334.01 .. NELBO: 5343.37
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 19.74 .. Rec_loss: 11786.91 .. NELBO:
11806.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.01 .. Rec_loss: 5344.15 .. NELBO: 5353.16
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 19.92 .. Rec_loss: 11784.78 .. NELBO:
11804.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.69 .. Rec_loss: 5341.95 .. NELBO: 5351.64
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 20.94 .. Rec_loss: 11770.44 .. NELBO:
11791.38
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.18 .. Rec_loss: 5335.23 .. NELBO: 5344.41
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.07757306648118548, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=55, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=55, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=55, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1116.84 .. Rec_loss: 12263.35 .. NELBO:
13380.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 29.83 .. Rec_loss: 5443.94 .. NELBO:
5473.77
*****
*****
Validation loss decreased (inf --> 10947.524414). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 42.03 .. Rec_loss: 12249.4 .. NELBO:
12291.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.86 .. Rec_loss: 5434.4 .. NELBO: 5451.26
*****
*****
Validation loss decreased (10947.524414 --> 10902.511719). Saving model ...
*****

```

```

*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 36.26 .. Rec_loss: 12218.83 .. NELBO:
12255.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 15.95 .. Rec_loss: 5415.81 .. NELBO:
5431.76
*****
*****
Validation loss decreased (10902.511719 --> 10863.538086). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 30.72 .. Rec_loss: 12159.82 .. NELBO:
12190.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 11.14 .. Rec_loss: 5387.65 .. NELBO:
5398.79
*****
*****
Validation loss decreased (10863.538086 --> 10797.575195). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 21.33 .. Rec_loss: 12075.07 .. NELBO:
12096.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.35 .. Rec_loss: 5353.5 .. NELBO: 5361.85
*****
*****
Validation loss decreased (10797.575195 --> 10723.693359). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 16.48 .. Rec_loss: 11973.4 .. NELBO:
11989.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.34 .. Rec_loss: 5321.05 .. NELBO: 5327.39
*****
*****

```

```

Validation loss decreased (10723.693359 --> 10654.784180). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 12.39 .. Rec_loss: 11874.29 .. NELBO:
11886.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.62 .. Rec_loss: 5301.53 .. NELBO: 5306.15
*****
*****
Validation loss decreased (10654.784180 --> 10612.305664). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 8.96 .. Rec_loss: 11803.17 .. NELBO:
11812.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.07 .. Rec_loss: 5303.91 .. NELBO: 5306.98
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 5.75 .. Rec_loss: 11776.29 .. NELBO:
11782.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.84 .. Rec_loss: 5324.2 .. NELBO: 5326.04
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 3.42 .. Rec_loss: 11784.33 .. NELBO:
11787.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.99 .. Rec_loss: 5344.52 .. NELBO: 5345.51
*****
*****

```

```

EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 11793.26 .. NELBO:
11795.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5352.23 .. NELBO: 5352.74
*****
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.94 .. Rec_loss: 11788.57 .. NELBO:
11789.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5348.93 .. NELBO: 5349.21
*****
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 69
model: ETM(
  (t_drop): Dropout(p=0.06830186670217406, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=54, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=54, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=54, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 69.99 .. Rec_loss: 12263.98 .. NELBO:
12333.97
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.15 .. Rec_loss: 5443.98 .. NELBO: 5451.13
*****
*****
Validation loss decreased (inf --> 10902.256836). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.79 .. Rec_loss: 12249.03 .. NELBO:
12256.82
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5432.87 .. NELBO: 5433.25
*****
*****
Validation loss decreased (10902.256836 --> 10866.504883). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12212.14 .. NELBO:
12212.7
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.08 .. NELBO: 5411.15
*****
*****
Validation loss decreased (10866.504883 --> 10822.310547). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12144.57 .. NELBO:
12144.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.33 .. NELBO: 5379.35
*****
*****
Validation loss decreased (10822.310547 --> 10758.705078). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12050.99 .. NELBO:
12051.03
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5342.88 .. NELBO: 5342.89
*****
*****
Validation loss decreased (10758.705078 --> 10685.787109). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11941.59 .. NELBO:
11941.62
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.12 .. NELBO: 5312.13
*****
*****
Validation loss decreased (10685.787109 --> 10624.273438). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11845.91 .. NELBO:
11845.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.81 .. NELBO: 5299.82
*****
*****
Validation loss decreased (10624.273438 --> 10599.644531). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11789.37 .. NELBO:
11789.39
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.4 .. NELBO: 5311.41
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11779.33 .. NELBO:
11779.35
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.37 .. NELBO: 5335.38
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11792.77 .. NELBO:
11792.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.21 .. NELBO: 5352.22
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11797.37 .. NELBO:
11797.39
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5354.67 .. NELBO: 5354.68
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11786.11 .. NELBO:
11786.13
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.55 .. NELBO: 5348.56
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06830186670217406, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=54, bias=False)
  (q_theta): Sequential(

```

```

(0): Linear(in_features=13198, out_features=800, bias=True)
(1): Sigmoid()
(2): Linear(in_features=800, out_features=800, bias=True)
(3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=54, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=54, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 67.46 .. Rec_loss: 12264.01 .. NELBO:
12331.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.02 .. Rec_loss: 5443.82 .. NELBO: 5450.84
*****
*****
Validation loss decreased (inf --> 10901.671875). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.61 .. Rec_loss: 12248.44 .. NELBO:
12256.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.17 .. NELBO: 5432.62
*****
*****
Validation loss decreased (10901.671875 --> 10865.226562). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12209.54 .. NELBO:
12210.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.31 .. NELBO: 5409.38
*****
*****
Validation loss decreased (10865.226562 --> 10818.779297). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12140.39 .. NELBO:
12140.5

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.81 .. NELBO: 5376.83
*****
*****
Validation loss decreased (10818.779297 --> 10753.659180). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12042.74 .. NELBO:
12042.78
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5340.43 .. NELBO: 5340.44
*****
*****
Validation loss decreased (10753.659180 --> 10680.877930). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11936.44 .. NELBO:
11936.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.73 .. NELBO: 5310.74
*****
*****
Validation loss decreased (10680.877930 --> 10621.486328). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.86 .. NELBO:
11842.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.97 .. NELBO: 5299.99
*****
*****
Validation loss decreased (10621.486328 --> 10599.972656). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.82 .. NELBO:
11788.86

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5312.36 .. NELBO: 5312.39
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11781.18 .. NELBO:
11781.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5335.54 .. NELBO: 5335.57
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11793.41 .. NELBO:
11793.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5350.98 .. NELBO: 5351.01
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11796.18 .. NELBO:
11796.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.8 .. NELBO: 5352.83
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11784.33 .. NELBO:
11784.38

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.86 .. NELBO: 5346.88
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06830186670217406, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=54, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=54, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=54, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 65.09 .. Rec_loss: 12264.13 .. NELBO:
12329.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.39 .. Rec_loss: 5443.61 .. NELBO: 5450.0
*****
*****
Validation loss decreased (inf --> 10900.009766). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 6.91 .. Rec_loss: 12247.53 .. NELBO:
12254.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5431.45 .. NELBO: 5431.81
*****
*****
Validation loss decreased (10900.009766 --> 10863.612305). Saving model ...
*****

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```

*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12207.75 .. NELBO:
12208.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.43 .. NELBO: 5408.5
*****
*****
Validation loss decreased (10863.612305 --> 10817.002930). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12136.65 .. NELBO:
12136.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.79 .. NELBO: 5375.81
*****
*****
Validation loss decreased (10817.002930 --> 10751.625000). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12040.5 .. NELBO:
12040.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.43 .. NELBO: 5339.45
*****
*****
Validation loss decreased (10751.625000 --> 10678.881836). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11933.01 .. NELBO:
11933.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.11 .. NELBO: 5310.12
*****
*****
Validation loss decreased (10678.881836 --> 10620.245117). Saving model ...
*****

```



```

*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.06 .. NELBO:
11839.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.16 .. NELBO: 5300.17
*****
*****
Validation loss decreased (10620.245117 --> 10600.349609). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.95 .. NELBO:
11786.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.46 .. NELBO: 5313.47
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.11 .. NELBO:
11781.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.04 .. NELBO: 5337.06
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.25 .. NELBO:
11794.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.22 .. NELBO: 5352.24
*****
*****
EarlyStopping counter: 3 out of 5
*****

```

```

*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.31 .. NELBO:
11796.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.47 .. NELBO: 5353.48
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.88 .. NELBO:
11783.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.18 .. NELBO: 5347.19
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 70
model: ETM(
  (t_drop): Dropout(p=0.08579805262091107, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 12263.26 .. NELBO:
12263.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.37 .. Rec_loss: 5442.12 .. NELBO: 5443.49

```

```

*****
*****
Validation loss decreased (inf --> 10886.973633). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.77 .. Rec_loss: 12240.12 .. NELBO:
12241.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5425.02 .. NELBO: 5425.05
*****
*****
Validation loss decreased (10886.973633 --> 10850.100586). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 12185.95 .. NELBO:
12186.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5396.32 .. NELBO: 5396.61
*****
*****
Validation loss decreased (10850.100586 --> 10793.208008). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 12100.13 .. NELBO:
12100.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 5359.95 .. NELBO: 5360.6
*****
*****
Validation loss decreased (10793.208008 --> 10721.194336). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.35 .. Rec_loss: 11992.59 .. NELBO:
11994.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.41 .. Rec_loss: 5324.52 .. NELBO: 5325.93

```

```

*****
*****
Validation loss decreased (10721.194336 --> 10651.868164). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.73 .. Rec_loss: 11888.34 .. NELBO:
11890.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5303.22 .. NELBO: 5303.47
*****
*****
Validation loss decreased (10651.868164 --> 10606.940430). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 11812.8 .. NELBO:
11813.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5303.95 .. NELBO: 5304.31
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 11782.46 .. NELBO:
11782.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5322.9 .. NELBO: 5322.98
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 11786.35 .. NELBO:
11786.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 5342.61 .. NELBO: 5343.36

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.2 .. Rec_loss: 11793.8 .. NELBO:
11795.0
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 5350.52 .. NELBO: 5351.12
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 11787.64 .. NELBO:
11788.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.37 .. Rec_loss: 5346.65 .. NELBO: 5348.02
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.08579805262091107, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 12263.42 .. NELBO:
12263.73
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.13 .. Rec_loss: 5442.54 .. NELBO: 5443.67
*****
*****
Validation loss decreased (inf --> 10887.336914). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.62 .. Rec_loss: 12241.51 .. NELBO:
12243.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5426.07 .. NELBO: 5426.09
*****
*****
Validation loss decreased (10887.336914 --> 10852.189453). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 12189.07 .. NELBO:
12189.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5398.09 .. NELBO: 5398.51
*****
*****
Validation loss decreased (10852.189453 --> 10797.004883). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12105.48 .. NELBO:
12106.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5362.15 .. NELBO: 5362.38
*****
*****
Validation loss decreased (10797.004883 --> 10724.750977). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.83 .. Rec_loss: 11999.14 .. NELBO:
11999.97
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.38 .. Rec_loss: 5326.32 .. NELBO: 5327.7
*****
*****
Validation loss decreased (10724.750977 --> 10655.392578). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.77 .. Rec_loss: 11893.29 .. NELBO:
11895.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5303.97 .. NELBO: 5304.17
*****
*****
Validation loss decreased (10655.392578 --> 10608.331055). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.9 .. Rec_loss: 11815.7 .. NELBO:
11816.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5303.42 .. NELBO: 5303.56
*****
*****
Validation loss decreased (10608.331055 --> 10607.124023). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 11782.67 .. NELBO:
11782.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5321.6 .. NELBO: 5322.0
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 11785.51 .. NELBO:
11786.11
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5342.43 .. NELBO: 5342.56
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 11794.17 .. NELBO:
11794.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.33 .. Rec_loss: 5348.68 .. NELBO: 5351.01
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.11 .. Rec_loss: 11785.34 .. NELBO:
11789.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.39 .. Rec_loss: 5346.6 .. NELBO: 5347.99
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.0 .. Rec_loss: 11772.3 .. NELBO:
11775.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.33 .. Rec_loss: 5337.49 .. NELBO: 5340.82
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.08579805262091107, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)

```



```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): SELU()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12263.53 .. NELB0:
12263.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.83 .. Rec_loss: 5442.54 .. NELB0: 5443.37
*****
*****
Validation loss decreased (inf --> 10886.745117). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 12241.53 .. NELB0:
12242.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5425.87 .. NELB0: 5425.89
*****
*****
Validation loss decreased (10886.745117 --> 10851.773438). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12188.29 .. NELB0:
12188.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5397.45 .. NELB0: 5397.8
*****
*****
Validation loss decreased (10851.773438 --> 10795.596680). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12103.52 .. NELB0:

```

```
12104.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 5361.05 .. NELBO: 5361.65
*****
*****
Validation loss decreased (10795.596680 --> 10723.293945). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.2 .. Rec_loss: 11996.78 .. NELBO:
11997.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.82 .. Rec_loss: 5325.53 .. NELBO: 5326.35
*****
*****
Validation loss decreased (10723.293945 --> 10652.707031). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.37 .. Rec_loss: 11890.41 .. NELBO:
11891.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5303.38 .. NELBO: 5303.79
*****
*****
Validation loss decreased (10652.707031 --> 10607.568359). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 11814.25 .. NELBO:
11814.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5303.44 .. NELBO: 5303.58
*****
*****
Validation loss decreased (10607.568359 --> 10607.146484). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.01 .. Rec_loss: 11782.42 .. NELBO:
```

```
11783.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5322.37 .. NELBO: 5322.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 11786.16 .. NELBO:
11786.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 5342.14 .. NELBO: 5342.86
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 11793.52 .. NELBO:
11794.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5350.21 .. NELBO: 5350.73
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.89 .. Rec_loss: 11786.89 .. NELBO:
11788.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.92 .. Rec_loss: 5344.45 .. NELBO: 5347.37
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 5.44 .. Rec_loss: 11769.33 .. NELBO:
```

```

11774.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.83 .. Rec_loss: 5339.29 .. NELBO: 5341.12
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 71
model: ETM(
  (t_drop): Dropout(p=0.11138814586098732, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1077.78 .. Rec_loss: 12264.54 .. NELBO:
13342.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.81 .. Rec_loss: 5445.84 .. NELBO:
5466.65
*****
*****
Validation loss decreased (inf --> 10933.301758). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 25.25 .. Rec_loss: 12254.49 .. NELBO:
12279.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.63 .. Rec_loss: 5437.22 .. NELBO: 5440.85
*****

```

```

*****
Validation loss decreased (10933.301758 --> 10881.702148). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 6.98 .. Rec_loss: 12226.4 .. NELBO:
12233.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.03 .. Rec_loss: 5420.3 .. NELBO: 5422.33
*****
*****
Validation loss decreased (10881.702148 --> 10844.673828). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.58 .. Rec_loss: 12172.69 .. NELBO:
12176.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 5393.51 .. NELBO: 5394.35
*****
*****
Validation loss decreased (10844.673828 --> 10788.707031). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.61 .. Rec_loss: 12090.91 .. NELBO:
12092.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5359.34 .. NELBO: 5359.84
*****
*****
Validation loss decreased (10788.707031 --> 10719.667969). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 11988.98 .. NELBO:
11990.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 5325.25 .. NELBO: 5325.57
*****

```

```

*****
Validation loss decreased (10719.667969 --> 10651.129883). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 11885.0 .. NELBO:
11885.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5303.17 .. NELBO: 5303.38
*****
*****
Validation loss decreased (10651.129883 --> 10606.764648). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11806.87 .. NELBO:
11807.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5303.7 .. NELBO: 5303.88
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 11776.26 .. NELBO:
11776.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5324.14 .. NELBO: 5324.22
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11784.18 .. NELBO:
11784.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.44 .. NELBO: 5346.47
*****

```

```

*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11796.68 .. NELBO:
11796.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.81 .. NELBO: 5355.84
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.28 .. NELBO:
11792.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.9 .. NELBO: 5352.92
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.11138814586098732, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 905.55 .. Rec_loss: 12263.97 .. NELBO:
13169.52
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 17.89 .. Rec_loss: 5445.23 .. NELBO:
5463.12
*****
*****
Validation loss decreased (inf --> 10926.250000). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 20.27 .. Rec_loss: 12252.78 .. NELBO:
12273.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.84 .. Rec_loss: 5435.98 .. NELBO: 5437.82
*****
*****
Validation loss decreased (10926.250000 --> 10875.636719). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 3.56 .. Rec_loss: 12222.51 .. NELBO:
12226.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 5417.98 .. NELBO: 5418.98
*****
*****
Validation loss decreased (10875.636719 --> 10837.958984). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 1.77 .. Rec_loss: 12166.01 .. NELBO:
12167.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5390.33 .. NELBO: 5390.76
*****
*****
Validation loss decreased (10837.958984 --> 10781.512695). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.8 .. Rec_loss: 12081.87 .. NELBO:
12082.67
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5355.99 .. NELBO: 5356.2
*****
*****
Validation loss decreased (10781.512695 --> 10712.405273). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 11978.73 .. NELBO:
11979.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5322.71 .. NELBO: 5322.86
*****
*****
Validation loss decreased (10712.405273 --> 10645.714844). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 11877.68 .. NELBO:
11877.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5302.39 .. NELBO: 5302.54
*****
*****
Validation loss decreased (10645.714844 --> 10605.069336). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 11803.99 .. NELBO:
11804.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5304.69 .. NELBO: 5304.76
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11776.61 .. NELBO:
11776.72
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5325.67 .. NELBO: 5325.7
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11785.58 .. NELBO:
11785.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.18 .. NELBO: 5347.2
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.41 .. NELBO:
11796.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.51 .. NELBO: 5355.53
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.56 .. NELBO:
11791.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.13 .. NELBO: 5352.15
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.11138814586098732, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)

```

```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1328.16 .. Rec_loss: 12264.18 .. NELBO:
13592.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.25 .. Rec_loss: 5445.26 .. NELBO:
5470.51
*****
*****
Validation loss decreased (inf --> 10941.020508). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 30.4 .. Rec_loss: 12252.98 .. NELBO:
12283.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.19 .. Rec_loss: 5436.28 .. NELBO: 5442.47
*****
*****
Validation loss decreased (10941.020508 --> 10884.949219). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 13.56 .. Rec_loss: 12223.31 .. NELBO:
12236.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.51 .. Rec_loss: 5418.61 .. NELBO: 5424.12
*****
*****
Validation loss decreased (10884.949219 --> 10848.232422). Saving model ...
*****
*****

```

```

Epoch----->4 .. LR: 0.005 .. KL_theta: 11.2 .. Rec_loss: 12167.52 .. NELBO:
12178.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.78 .. Rec_loss: 5391.37 .. NELBO: 5395.15
*****
*****
Validation loss decreased (10848.232422 --> 10790.315430). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 7.62 .. Rec_loss: 12084.78 .. NELBO:
12092.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.58 .. Rec_loss: 5357.38 .. NELBO: 5359.96
*****
*****
Validation loss decreased (10790.315430 --> 10719.923828). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 5.26 .. Rec_loss: 11983.16 .. NELBO:
11988.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 5324.12 .. NELBO: 5325.97
*****
*****
Validation loss decreased (10719.923828 --> 10651.936523). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 3.96 .. Rec_loss: 11880.8 .. NELBO:
11884.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.44 .. Rec_loss: 5303.17 .. NELBO: 5304.61
*****
*****
Validation loss decreased (10651.936523 --> 10609.222656). Saving model ...
*****
*****

```

```

Epoch----->8 .. LR: 0.005 .. KL_theta: 2.92 .. Rec_loss: 11805.72 .. NELB0:
11808.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 5304.33 .. NELB0: 5305.45
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 2.36 .. Rec_loss: 11776.64 .. NELB0:
11779.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.86 .. Rec_loss: 5324.58 .. NELB0: 5325.44
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 11784.34 .. NELB0:
11786.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 5346.26 .. NELB0: 5346.9
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 11796.0 .. NELB0:
11797.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5355.17 .. NELB0: 5355.63
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****

```

```

Epoch---->12 .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 11791.79 .. NELBO:
11792.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5352.09 .. NELBO: 5352.42
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 72
model: ETM(
  (t_drop): Dropout(p=0.10151158214290225, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=88, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=88, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=88, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1149.16 .. Rec_loss: 12264.37 .. NELBO:
13413.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 35.34 .. Rec_loss: 5446.08 .. NELBO:
5481.42
*****
*****
Validation loss decreased (inf --> 10962.847656). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 50.39 .. Rec_loss: 12255.72 .. NELBO:
12306.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.13 .. Rec_loss: 5438.25 .. NELBO:

```

```

5461.38
*****
*****
Validation loss decreased (10962.847656 --> 10922.766602). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 49.61 .. Rec_loss: 12230.37 .. NELBO:
12279.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.96 .. Rec_loss: 5422.43 .. NELBO:
5441.39
*****
*****
Validation loss decreased (10922.766602 --> 10882.785156). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 36.77 .. Rec_loss: 12180.56 .. NELBO:
12217.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 11.85 .. Rec_loss: 5397.8 .. NELBO: 5409.65
*****
*****
Validation loss decreased (10882.785156 --> 10819.293945). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 24.34 .. Rec_loss: 12105.16 .. NELBO:
12129.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.54 .. Rec_loss: 5365.3 .. NELBO: 5373.84
*****
*****
Validation loss decreased (10819.293945 --> 10747.672852). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 18.06 .. Rec_loss: 12007.15 .. NELBO:
12025.21
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.89 .. Rec_loss: 5331.1 .. NELBO: 5337.99
*****
*****
Validation loss decreased (10747.672852 --> 10675.975586). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 14.92 .. Rec_loss: 11903.33 .. NELBO:
11918.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.64 .. Rec_loss: 5306.09 .. NELBO: 5311.73
*****
*****
Validation loss decreased (10675.975586 --> 10623.460938). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 11.67 .. Rec_loss: 11819.54 .. NELBO:
11831.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.34 .. Rec_loss: 5301.4 .. NELBO: 5305.74
*****
*****
Validation loss decreased (10623.460938 --> 10611.487305). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 9.12 .. Rec_loss: 11779.11 .. NELBO:
11788.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.98 .. Rec_loss: 5317.54 .. NELBO: 5320.52
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 6.24 .. Rec_loss: 11780.08 .. NELBO:
11786.32
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.97 .. Rec_loss: 5339.36 .. NELBO: 5341.33
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.39 .. Rec_loss: 11791.8 .. NELBO:
11796.19
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.64 .. Rec_loss: 5350.78 .. NELBO: 5352.42
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.98 .. Rec_loss: 11790.67 .. NELBO:
11794.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.92 .. Rec_loss: 5349.68 .. NELBO: 5351.6
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 4.77 .. Rec_loss: 11777.3 .. NELBO:
11782.07
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.37 .. Rec_loss: 5342.77 .. NELBO: 5345.14
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.10151158214290225, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=88, bias=False)
  (q_theta): Sequential(

```

```

    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=88, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=88, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1273.6 .. Rec_loss: 12265.8 .. NELBO:
13539.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 26.18 .. Rec_loss: 5446.21 .. NELBO:
5472.39
*****
*****
Validation loss decreased (inf --> 10944.776367). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 31.75 .. Rec_loss: 12256.64 .. NELBO:
12288.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.53 .. Rec_loss: 5439.07 .. NELBO: 5445.6
*****
*****
Validation loss decreased (10944.776367 --> 10891.215820). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 13.46 .. Rec_loss: 12232.93 .. NELBO:
12246.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.79 .. Rec_loss: 5424.28 .. NELBO: 5429.07
*****
*****
Validation loss decreased (10891.215820 --> 10858.149414). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 9.15 .. Rec_loss: 12186.0 .. NELBO:

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```
12195.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.74 .. Rec_loss: 5399.86 .. NELBO: 5402.6
*****
*****
Validation loss decreased (10858.149414 --> 10805.201172). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 5.19 .. Rec_loss: 12110.87 .. NELBO:
12116.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.71 .. Rec_loss: 5367.4 .. NELBO: 5369.11
*****
*****
Validation loss decreased (10805.201172 --> 10738.225586). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.41 .. Rec_loss: 12013.21 .. NELBO:
12016.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.14 .. Rec_loss: 5332.96 .. NELBO: 5334.1
*****
*****
Validation loss decreased (10738.225586 --> 10668.208984). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 2.25 .. Rec_loss: 11908.67 .. NELBO:
11910.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.78 .. Rec_loss: 5307.29 .. NELBO: 5308.07
*****
*****
Validation loss decreased (10668.208984 --> 10616.149414). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.54 .. Rec_loss: 11824.04 .. NELBO:
```

```
11825.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 5301.61 .. NELBO: 5302.17
*****
*****
Validation loss decreased (10616.149414 --> 10604.352539). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 11781.58 .. NELBO:
11782.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5317.45 .. NELBO: 5317.83
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 11781.1 .. NELBO:
11781.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5340.33 .. NELBO: 5340.55
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 11794.51 .. NELBO:
11794.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5353.15 .. NELBO: 5353.26
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 11794.98 .. NELBO:
```

```

11795.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5352.75 .. NELBO: 5352.8
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11781.18 .. NELBO:
11781.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.94 .. NELBO: 5345.96
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.10151158214290225, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=88, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=88, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=88, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1198.94 .. Rec_loss: 12264.43 .. NELBO:
13463.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.19 .. Rec_loss: 5445.64 .. NELBO:
5469.83
*****
*****

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```

Validation loss decreased (inf --> 10939.662109). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 32.92 .. Rec_loss: 12254.54 .. NELBO:
12287.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.17 .. Rec_loss: 5436.85 .. NELBO:
5447.02
*****
*****
Validation loss decreased (10939.662109 --> 10894.045898). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 22.37 .. Rec_loss: 12225.77 .. NELBO:
12248.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.92 .. Rec_loss: 5419.88 .. NELBO: 5429.8
*****
*****
Validation loss decreased (10894.045898 --> 10859.602539). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 19.27 .. Rec_loss: 12172.11 .. NELBO:
12191.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.36 .. Rec_loss: 5393.36 .. NELBO: 5399.72
*****
*****
Validation loss decreased (10859.602539 --> 10799.436523). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 12.36 .. Rec_loss: 12091.69 .. NELBO:
12104.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.83 .. Rec_loss: 5359.64 .. NELBO: 5363.47
*****

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```

*****
Validation loss decreased (10799.436523 --> 10726.935547). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 7.59 .. Rec_loss: 11990.78 .. NELBO:
11998.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.39 .. Rec_loss: 5325.89 .. NELBO: 5328.28
*****
*****
Validation loss decreased (10726.935547 --> 10656.555664). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.83 .. Rec_loss: 11887.99 .. NELBO:
11892.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.52 .. Rec_loss: 5303.64 .. NELBO: 5305.16
*****
*****
Validation loss decreased (10656.555664 --> 10610.313477). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.05 .. Rec_loss: 11810.57 .. NELBO:
11813.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.96 .. Rec_loss: 5303.11 .. NELBO: 5304.07
*****
*****
Validation loss decreased (10610.313477 --> 10608.148438). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.92 .. Rec_loss: 11777.99 .. NELBO:
11779.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 5322.35 .. NELBO: 5322.92
*****

```

```

*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 11784.03 .. NELBO:
11785.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5344.22 .. NELBO: 5344.52
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 11795.26 .. NELBO:
11795.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5353.94 .. NELBO: 5354.08
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 11792.56 .. NELBO:
11792.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5351.48 .. NELBO: 5351.55
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11778.67 .. NELBO:
11778.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5344.23 .. NELBO: 5344.27
*****

```



```

*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 73
model: ETM(
  (t_drop): Dropout(p=0.08331390356053814, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1148.41 .. Rec_loss: 12265.06 .. NELBO:
13413.47
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.17 .. Rec_loss: 5446.2 .. NELBO: 5469.37
*****
*****
Validation loss decreased (inf --> 10938.732422). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 31.65 .. Rec_loss: 12256.25 .. NELBO:
12287.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.67 .. Rec_loss: 5438.3 .. NELBO: 5448.97
*****
*****
Validation loss decreased (10938.732422 --> 10897.946289). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 23.32 .. Rec_loss: 12230.39 .. NELBO:
12253.71
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.53 .. Rec_loss: 5422.46 .. NELBO:
5432.99
*****
*****
Validation loss decreased (10897.946289 --> 10865.985352). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 20.35 .. Rec_loss: 12179.62 .. NELBO:
12199.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.03 .. Rec_loss: 5396.99 .. NELBO: 5404.02
*****
*****
Validation loss decreased (10865.985352 --> 10808.045898). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 13.21 .. Rec_loss: 12101.84 .. NELBO:
12115.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.42 .. Rec_loss: 5363.87 .. NELBO: 5368.29
*****
*****
Validation loss decreased (10808.045898 --> 10736.580078). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 8.68 .. Rec_loss: 12002.61 .. NELBO:
12011.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.99 .. Rec_loss: 5329.55 .. NELBO: 5332.54
*****
*****
Validation loss decreased (10736.580078 --> 10665.086914). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.85 .. Rec_loss: 11897.99 .. NELBO:
11903.84
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.09 .. Rec_loss: 5305.27 .. NELBO: 5307.36
*****
*****
Validation loss decreased (10665.086914 --> 10614.716797). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.13 .. Rec_loss: 11815.74 .. NELBO:
11819.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 5302.25 .. NELBO: 5303.68
*****
*****
Validation loss decreased (10614.716797 --> 10607.361328). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.77 .. Rec_loss: 11778.51 .. NELBO:
11781.28
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.92 .. Rec_loss: 5320.38 .. NELBO: 5321.3
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.81 .. Rec_loss: 11781.72 .. NELBO:
11783.53
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 5343.24 .. NELBO: 5343.78
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.01 .. Rec_loss: 11795.05 .. NELBO:
11796.06
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5354.47 .. NELBO: 5354.76
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 11794.18 .. NELBO:
11794.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5352.67 .. NELBO: 5352.84
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 11779.54 .. NELBO:
11779.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5345.26 .. NELBO: 5345.37
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.08331390356053814, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****

```

```

Epoch----->1 .. LR: 0.005 .. KL_theta: 1059.08 .. Rec_loss: 12264.29 .. NELBO:
13323.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 19.06 .. Rec_loss: 5445.56 .. NELBO:
5464.62
*****
*****
Validation loss decreased (inf --> 10929.228516). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 21.03 .. Rec_loss: 12253.8 .. NELBO:
12274.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 5436.5 .. NELBO: 5438.35
*****
*****
Validation loss decreased (10929.228516 --> 10876.708008). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 3.69 .. Rec_loss: 12224.25 .. NELBO:
12227.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.14 .. Rec_loss: 5418.69 .. NELBO: 5419.83
*****
*****
Validation loss decreased (10876.708008 --> 10839.663086). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 1.96 .. Rec_loss: 12168.11 .. NELBO:
12170.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5390.96 .. NELBO: 5391.44
*****
*****
Validation loss decreased (10839.663086 --> 10782.876953). Saving model ...
*****

```

```

*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.85 .. Rec_loss: 12083.51 .. NELBO:
12084.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5356.34 .. NELBO: 5356.55
*****
*****
Validation loss decreased (10782.876953 --> 10713.116211). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11980.47 .. NELBO:
11980.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5322.71 .. NELBO: 5322.84
*****
*****
Validation loss decreased (10713.116211 --> 10645.676758). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 11877.77 .. NELBO:
11878.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5302.11 .. NELBO: 5302.29
*****
*****
Validation loss decreased (10645.676758 --> 10604.587891). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 11803.62 .. NELBO:
11803.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5304.45 .. NELBO: 5304.52
*****
*****
EarlyStopping counter: 1 out of 5
*****

```

```

*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11776.17 .. NELBO:
11776.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5325.76 .. NELBO: 5325.79
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11785.24 .. NELBO:
11785.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5347.68 .. NELBO: 5347.71
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.92 .. NELBO:
11796.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5356.23 .. NELBO: 5356.25
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.04 .. NELBO:
11792.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.76 .. NELBO: 5352.78
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping

```

```

model: ETM(
  (t_drop): Dropout(p=0.08331390356053814, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1116.99 .. Rec_loss: 12264.51 .. NELBO:
13381.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.35 .. Rec_loss: 5445.57 .. NELBO:
5465.92
*****
*****
Validation loss decreased (inf --> 10931.845703). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 23.33 .. Rec_loss: 12254.4 .. NELBO:
12277.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.33 .. Rec_loss: 5437.24 .. NELBO: 5440.57
*****
*****
Validation loss decreased (10931.845703 --> 10881.130859). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 6.43 .. Rec_loss: 12226.19 .. NELBO:
12232.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.08 .. Rec_loss: 5420.11 .. NELBO: 5422.19

```



```

*****
*****
Validation loss decreased (10881.130859 --> 10844.375000). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.5 .. Rec_loss: 12172.05 .. NELBO:
12175.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 5393.22 .. NELBO: 5393.97
*****
*****
Validation loss decreased (10844.375000 --> 10787.929688). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.24 .. Rec_loss: 12090.0 .. NELBO:
12091.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5359.21 .. NELBO: 5359.45
*****
*****
Validation loss decreased (10787.929688 --> 10718.887695). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 11988.64 .. NELBO:
11989.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5325.4 .. NELBO: 5325.49
*****
*****
Validation loss decreased (10718.887695 --> 10650.970703). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11885.39 .. NELBO:
11885.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5303.46 .. NELBO: 5303.51

```

```

*****
*****
Validation loss decreased (10650.970703 --> 10607.009766). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11808.13 .. NELBO:
11808.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5303.72 .. NELBO: 5303.75
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11777.35 .. NELBO:
11777.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5323.81 .. NELBO: 5323.83
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11784.32 .. NELBO:
11784.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.13 .. NELBO: 5346.15
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.97 .. NELBO:
11797.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.82 .. NELBO: 5355.84

```

```

*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.4 .. NELBO:
11793.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.1 .. NELBO: 5353.12
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 74
model: ETM(
  (t_drop): Dropout(p=0.018015881709101247, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 91.55 .. Rec_loss: 12264.43 .. NELBO:
12355.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.18 .. Rec_loss: 5444.47 .. NELBO: 5452.65
*****
*****
Validation loss decreased (inf --> 10905.309570). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.77 .. Rec_loss: 12250.28 .. NELBO:
12259.05
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5433.36 .. NELBO: 5433.8
*****
*****
Validation loss decreased (10905.309570 --> 10867.605469). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12213.98 .. NELBO:
12214.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.9 .. NELBO: 5411.97
*****
*****
Validation loss decreased (10867.605469 --> 10823.935547). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12147.58 .. NELBO:
12147.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5380.67 .. NELBO: 5380.69
*****
*****
Validation loss decreased (10823.935547 --> 10761.390625). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12055.22 .. NELBO:
12055.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.67 .. NELBO: 5344.69
*****
*****
Validation loss decreased (10761.390625 --> 10689.373047). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11948.59 .. NELBO:
11948.62
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.72 .. NELBO: 5313.74
*****
*****
Validation loss decreased (10689.373047 --> 10627.476562). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11852.72 .. NELBO:
11852.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.1 .. NELBO: 5300.12
*****
*****
Validation loss decreased (10627.476562 --> 10600.240234). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.31 .. NELBO:
11793.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.79 .. NELBO: 5309.81
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.26 .. NELBO:
11780.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5332.77 .. NELBO: 5332.79
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.52 .. NELBO:
11791.55
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.08 .. NELBO: 5350.1
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.59 .. NELBO:
11796.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.62 .. NELBO: 5353.64
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.38 .. NELBO:
11786.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.29 .. NELBO: 5348.3
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.018015881709101247, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****

```

```

Epoch---->1 .. LR: 0.005 .. KL_theta: 86.97 .. Rec_loss: 12263.74 .. NELBO:
12350.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.91 .. Rec_loss: 5443.83 .. NELBO: 5451.74
*****
*****
Validation loss decreased (inf --> 10903.478516). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.47 .. Rec_loss: 12247.46 .. NELBO:
12255.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5431.21 .. NELBO: 5431.6
*****
*****
Validation loss decreased (10903.478516 --> 10863.207031). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12205.97 .. NELBO:
12206.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.49 .. NELBO: 5407.55
*****
*****
Validation loss decreased (10863.207031 --> 10815.104492). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12133.2 .. NELBO:
12133.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.14 .. NELBO: 5374.16
*****
*****
Validation loss decreased (10815.104492 --> 10748.331055). Saving model ...
*****
*****

```

```
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12034.55 .. NELB0:
12034.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.54 .. NELB0: 5337.56
*****
*****
Validation loss decreased (10748.331055 --> 10675.120117). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11925.84 .. NELB0:
11925.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.04 .. NELB0: 5309.06
*****
*****
Validation loss decreased (10675.120117 --> 10618.118164). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11834.03 .. NELB0:
11834.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.92 .. NELB0: 5300.94
*****
*****
Validation loss decreased (10618.118164 --> 10601.862305). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.12 .. NELB0:
11786.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.69 .. NELB0: 5315.71
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
```



```

Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.15 .. NELB0:
11782.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.01 .. NELB0: 5339.03
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.07 .. NELB0:
11795.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.77 .. NELB0: 5352.79
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.27 .. NELB0:
11795.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.98 .. NELB0: 5353.0
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.54 .. NELB0:
11782.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.34 .. NELB0: 5346.36
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(

```

```

(t_drop): Dropout(p=0.018015881709101247, inplace=False)
(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=84, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.52 .. Rec_loss: 12263.88 .. NELBO:
12352.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.06 .. Rec_loss: 5443.58 .. NELBO: 5451.64
*****
*****
Validation loss decreased (inf --> 10903.284180). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.84 .. Rec_loss: 12246.74 .. NELBO:
12255.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5430.61 .. NELBO: 5431.11
*****
*****
Validation loss decreased (10903.284180 --> 10862.217773). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 12204.15 .. NELBO:
12204.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5406.62 .. NELBO: 5406.69
*****
*****

```

```

Validation loss decreased (10862.217773 --> 10813.384766). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12130.83 .. NELBO:
12130.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5373.22 .. NELBO: 5373.25
*****
*****
Validation loss decreased (10813.384766 --> 10746.483398). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12032.15 .. NELBO:
12032.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.83 .. NELBO: 5336.85
*****
*****
Validation loss decreased (10746.483398 --> 10673.696289). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11924.04 .. NELBO:
11924.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.7 .. NELBO: 5308.72
*****
*****
Validation loss decreased (10673.696289 --> 10617.438477). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11833.55 .. NELBO:
11833.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.8 .. NELBO: 5300.82
*****
*****

```

```

Validation loss decreased (10617.438477 --> 10601.633789). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.96 .. NELBO:
11786.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.49 .. NELBO: 5315.51
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.79 .. NELBO:
11781.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.66 .. NELBO: 5338.68
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.34 .. NELBO:
11794.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.48 .. NELBO: 5352.5
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.44 .. NELBO:
11795.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.85 .. NELBO: 5352.87
*****
*****

```

```

EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.75 .. NELBO:
11782.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.32 .. NELBO: 5346.34
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 75
model: ETM(
  (t_drop): Dropout(p=0.059641002674581, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.8 .. Rec_loss: 12264.51 .. NELBO:
12353.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.79 .. Rec_loss: 5444.33 .. NELBO: 5452.12
*****
*****
Validation loss decreased (inf --> 10904.231445). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.48 .. Rec_loss: 12249.84 .. NELBO:
12258.32
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5433.02 .. NELBO: 5433.47
*****
*****
Validation loss decreased (10904.231445 --> 10866.936523). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12212.64 .. NELBO:
12213.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.13 .. NELBO: 5411.2
*****
*****
Validation loss decreased (10866.936523 --> 10822.406250). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12145.85 .. NELBO:
12145.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.46 .. NELBO: 5379.49
*****
*****
Validation loss decreased (10822.406250 --> 10758.965820). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12051.67 .. NELBO:
12051.72
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.28 .. NELBO: 5343.3
*****
*****
Validation loss decreased (10758.965820 --> 10686.594727). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11944.94 .. NELBO:
11944.98
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.76 .. NELBO: 5312.78
*****
*****
Validation loss decreased (10686.594727 --> 10625.557617). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11849.33 .. NELBO:
11849.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.18 .. NELBO: 5300.2
*****
*****
Validation loss decreased (10625.557617 --> 10600.397461). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.27 .. NELBO:
11792.31
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.76 .. NELBO: 5310.78
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.83 .. NELBO:
11780.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.61 .. NELBO: 5333.63
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.29 .. NELBO:
11792.33
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.09 .. NELBO: 5350.11
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.04 .. NELBO:
11796.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.99 .. NELBO: 5353.01
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.79 .. NELBO:
11785.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.47 .. NELBO: 5347.49
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.059641002674581, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.85 .. Rec_loss: 12264.32 .. NELBO:
12353.17

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.91 .. Rec_loss: 5444.29 .. NELBO: 5452.2
*****
*****
Validation loss decreased (inf --> 10904.396484). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.58 .. Rec_loss: 12249.46 .. NELBO:
12258.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5432.73 .. NELBO: 5433.15
*****
*****
Validation loss decreased (10904.396484 --> 10866.301758). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12211.3 .. NELBO:
12211.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5410.46 .. NELBO: 5410.52
*****
*****
Validation loss decreased (10866.301758 --> 10821.047852). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12142.73 .. NELBO:
12142.82
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.36 .. NELBO: 5378.38
*****
*****
Validation loss decreased (10821.047852 --> 10756.766602). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12047.61 .. NELBO:
12047.65

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.96 .. NELBO: 5341.98
*****
*****
Validation loss decreased (10756.766602 --> 10683.962891). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11940.63 .. NELBO:
11940.66
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.69 .. NELBO: 5311.71
*****
*****
Validation loss decreased (10683.962891 --> 10623.416016). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.35 .. NELBO:
11845.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.93 .. NELBO: 5299.95
*****
*****
Validation loss decreased (10623.416016 --> 10599.885742). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.45 .. NELBO:
11789.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.61 .. NELBO: 5311.63
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.33 .. NELBO:
11780.37

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.04 .. NELBO: 5335.06
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.88 .. NELBO:
11792.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.27 .. NELBO: 5351.29
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.37 .. NELBO:
11796.41
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.58 .. NELBO: 5353.6
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.44 .. NELBO:
11785.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.68 .. NELBO: 5347.7
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.059641002674581, inplace=False)
  (theta_act): Sigmoid()

```

```

(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=82, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 94.31 .. Rec_loss: 12264.14 .. NELBO:
12358.45
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.59 .. Rec_loss: 5443.71 .. NELBO: 5452.3
*****
*****
Validation loss decreased (inf --> 10904.600586). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.32 .. Rec_loss: 12247.51 .. NELBO:
12256.83
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5431.13 .. NELBO: 5431.6
*****
*****
Validation loss decreased (10904.600586 --> 10863.195312). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12206.37 .. NELBO:
12207.03
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.74 .. NELBO: 5407.81
*****
*****
Validation loss decreased (10863.195312 --> 10815.624023). Saving model ...
*****

```

```

*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12134.77 .. NELBO:
12134.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.81 .. NELBO: 5374.83
*****
*****
Validation loss decreased (10815.624023 --> 10749.675781). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12037.85 .. NELBO:
12037.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.39 .. NELBO: 5338.41
*****
*****
Validation loss decreased (10749.675781 --> 10676.806641). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11929.95 .. NELBO:
11929.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.38 .. NELBO: 5309.4
*****
*****
Validation loss decreased (10676.806641 --> 10618.797852). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.02 .. NELBO:
11838.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.0 .. NELBO: 5300.02
*****
*****
Validation loss decreased (10618.797852 --> 10600.041016). Saving model ...
*****

```

```

*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.48 .. NELBO:
11787.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.72 .. NELBO: 5313.74
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.32 .. NELBO:
11781.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.29 .. NELBO: 5337.31
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.34 .. NELBO:
11794.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.13 .. NELBO: 5352.15
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.83 .. NELBO:
11795.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.21 .. NELBO: 5353.23
*****
*****
EarlyStopping counter: 4 out of 5
*****

```

```

*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.62 .. NELBO:
11783.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.89 .. NELBO: 5346.91
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 76
model: ETM(
  (t_drop): Dropout(p=0.056576243763062084, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 95.26 .. Rec_loss: 12263.98 .. NELBO:
12359.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.38 .. Rec_loss: 5443.71 .. NELBO: 5452.09
*****
*****
Validation loss decreased (inf --> 10904.165039). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.99 .. Rec_loss: 12247.35 .. NELBO:
12256.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5431.1 .. NELBO: 5431.56

```

```

*****
*****
Validation loss decreased (10904.165039 --> 10863.124023). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12205.96 .. NELBO:
12206.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5407.11 .. NELBO: 5407.19
*****
*****
Validation loss decreased (10863.124023 --> 10814.389648). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12132.61 .. NELBO:
12132.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5373.55 .. NELBO: 5373.58
*****
*****
Validation loss decreased (10814.389648 --> 10747.158203). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12034.42 .. NELBO:
12034.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.93 .. NELBO: 5336.95
*****
*****
Validation loss decreased (10747.158203 --> 10673.897461). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11925.7 .. NELBO:
11925.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.55 .. NELBO: 5308.57

```



```

*****
*****
Validation loss decreased (10673.897461 --> 10617.129883). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11835.2 .. NELBO:
11835.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.44 .. NELBO: 5300.45
*****
*****
Validation loss decreased (10617.129883 --> 10600.909180). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.94 .. NELBO:
11786.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5315.05 .. NELBO: 5315.06
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.49 .. NELBO:
11782.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.18 .. NELBO: 5338.19
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.74 .. NELBO:
11794.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.0 .. NELBO: 5352.01

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.52 .. NELBO:
11795.55
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.37 .. NELBO: 5352.38
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.85 .. NELBO:
11782.88
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5345.91 .. NELBO: 5345.92
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.056576243763062084, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.13 .. Rec_loss: 12264.56 .. NELBO:
12350.69
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.18 .. Rec_loss: 5444.62 .. NELBO: 5452.8
*****
*****
Validation loss decreased (inf --> 10905.589844). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.86 .. Rec_loss: 12250.4 .. NELBO:
12259.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5433.43 .. NELBO: 5433.89
*****
*****
Validation loss decreased (10905.589844 --> 10867.775391). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12213.4 .. NELBO:
12214.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5411.39 .. NELBO: 5411.47
*****
*****
Validation loss decreased (10867.775391 --> 10822.943359). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12145.63 .. NELBO:
12145.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.44 .. NELBO: 5379.47
*****
*****
Validation loss decreased (10822.943359 --> 10758.932617). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12050.11 .. NELBO:
12050.16
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.01 .. NELBO: 5343.03
*****
*****
Validation loss decreased (10758.932617 --> 10686.062500). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11942.94 .. NELBO:
11942.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.49 .. NELBO: 5312.51
*****
*****
Validation loss decreased (10686.062500 --> 10625.028320). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11847.4 .. NELBO:
11847.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.35 .. NELBO: 5300.37
*****
*****
Validation loss decreased (10625.028320 --> 10600.749023). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.61 .. NELBO:
11790.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.66 .. NELBO: 5311.68
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.67 .. NELBO:
11780.71
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.94 .. NELBO: 5334.96
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.7 .. NELBO:
11792.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.28 .. NELBO: 5351.3
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.6 .. NELBO:
11796.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.69 .. NELBO: 5353.71
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.51 .. NELBO:
11785.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.79 .. NELBO: 5347.81
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.056576243763062084, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)

```

```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 83.4 .. Rec_loss: 12263.84 .. NELBO:
12347.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.03 .. Rec_loss: 5443.63 .. NELBO: 5451.66
*****
*****
Validation loss decreased (inf --> 10903.303711). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.65 .. Rec_loss: 12246.83 .. NELBO:
12255.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5431.13 .. NELBO: 5431.51
*****
*****
Validation loss decreased (10903.303711 --> 10863.021484). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12205.98 .. NELBO:
12206.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.43 .. NELBO: 5407.49
*****
*****
Validation loss decreased (10863.021484 --> 10814.982422). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12132.78 .. NELBO:

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```
12132.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.19 .. NELBO: 5374.21
*****
*****
Validation loss decreased (10814.982422 --> 10748.430664). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12034.93 .. NELBO:
12034.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.8 .. NELBO: 5337.82
*****
*****
Validation loss decreased (10748.430664 --> 10675.634766). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11926.85 .. NELBO:
11926.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.35 .. NELBO: 5309.37
*****
*****
Validation loss decreased (10675.634766 --> 10618.727539). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11835.4 .. NELBO:
11835.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.88 .. NELBO: 5300.9
*****
*****
Validation loss decreased (10618.727539 --> 10601.802734). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.76 .. NELBO:
```

```
11786.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.14 .. NELBO: 5315.16
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.2 .. NELBO:
11782.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.23 .. NELBO: 5338.25
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.36 .. NELBO:
11794.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.2 .. NELBO: 5352.22
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.3 .. NELBO:
11795.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.72 .. NELBO: 5352.74
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.92 .. NELBO:
```



```

11782.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.24 .. NELBO: 5346.26
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 77
model: ETM(
  (t_drop): Dropout(p=0.015274157220509057, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 12263.63 .. NELBO:
12263.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.69 .. Rec_loss: 5442.78 .. NELBO: 5444.47
*****
*****
Validation loss decreased (inf --> 10888.933594). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.94 .. Rec_loss: 12241.92 .. NELBO:
12243.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5426.27 .. NELBO: 5426.28
*****
*****

```

```

Validation loss decreased (10888.933594 --> 10852.569336). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 12189.11 .. NELBO:
12189.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5397.98 .. NELBO: 5398.25
*****
*****
Validation loss decreased (10852.569336 --> 10796.496094). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 12103.9 .. NELBO:
12104.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 5361.59 .. NELBO: 5362.61
*****
*****
Validation loss decreased (10796.496094 --> 10725.205078). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.66 .. Rec_loss: 11996.42 .. NELBO:
12000.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 5326.36 .. NELBO: 5327.0
*****
*****
Validation loss decreased (10725.205078 --> 10653.981445). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.87 .. Rec_loss: 11893.72 .. NELBO:
11894.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5303.93 .. NELBO: 5304.07
*****
*****

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```

Validation loss decreased (10653.981445 --> 10608.142578). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 11815.15 .. NELBO:
11815.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5303.68 .. NELBO: 5303.97
*****
*****
Validation loss decreased (10608.142578 --> 10607.946289). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 11782.94 .. NELBO:
11783.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5322.49 .. NELBO: 5322.87
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 11786.66 .. NELBO:
11787.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5342.83 .. NELBO: 5343.05
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11795.04 .. NELBO:
11795.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5350.99 .. NELBO: 5351.33
*****
*****

```

```

EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 11789.01 .. NELBO:
11789.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.93 .. Rec_loss: 5347.29 .. NELBO: 5348.22
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.86 .. Rec_loss: 11773.45 .. NELBO:
11775.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.14 .. Rec_loss: 5340.23 .. NELBO: 5341.37
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.015274157220509057, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 12263.67 .. NELBO:
12263.99
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 1.63 .. Rec_loss: 5442.91 .. NELBO: 5444.54
*****
*****
Validation loss decreased (inf --> 10889.064453). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 1.98 .. Rec_loss: 12242.52 .. NELBO:
12244.5
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5426.73 .. NELBO: 5426.75
*****
*****
Validation loss decreased (10889.064453 --> 10853.500977). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 12190.93 .. NELBO:
12191.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5398.76 .. NELBO: 5399.12
*****
*****
Validation loss decreased (10853.500977 --> 10798.232422). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 12106.67 .. NELBO:
12107.39
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.22 .. Rec_loss: 5362.37 .. NELBO: 5363.59
*****
*****
Validation loss decreased (10798.232422 --> 10727.183594). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 2.86 .. Rec_loss: 11999.45 .. NELBO:
12002.31
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.82 .. Rec_loss: 5326.83 .. NELBO: 5327.65
*****
*****
Validation loss decreased (10727.183594 --> 10655.300781). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 11894.65 .. NELBO:
11895.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5304.03 .. NELBO: 5304.43
*****
*****
Validation loss decreased (10655.300781 --> 10608.855469). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.91 .. Rec_loss: 11815.69 .. NELBO:
11816.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5303.27 .. NELBO: 5303.43
*****
*****
Validation loss decreased (10608.855469 --> 10606.863281). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 11782.55 .. NELBO:
11783.03
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5321.47 .. NELBO: 5321.94
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.91 .. Rec_loss: 11785.28 .. NELBO:
11786.19
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5341.89 .. NELBO: 5342.33
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 1.88 .. Rec_loss: 11792.79 .. NELBO:
11794.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.16 .. Rec_loss: 5349.53 .. NELBO: 5350.69
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 2.01 .. Rec_loss: 11786.76 .. NELBO:
11788.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.21 .. Rec_loss: 5346.74 .. NELBO: 5347.95
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 4.13 .. Rec_loss: 11772.24 .. NELBO:
11776.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.91 .. Rec_loss: 5337.94 .. NELBO: 5340.85
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.015274157220509057, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)

```

```

    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 12263.68 .. NELBO:
12264.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.53 .. Rec_loss: 5443.03 .. NELBO: 5444.56
*****
*****
Validation loss decreased (inf --> 10889.108398). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.93 .. Rec_loss: 12243.21 .. NELBO:
12245.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5427.1 .. NELBO: 5427.12
*****
*****
Validation loss decreased (10889.108398 --> 10854.241211). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12191.93 .. NELBO:
12192.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5399.51 .. NELBO: 5399.9
*****
*****
Validation loss decreased (10854.241211 --> 10799.800781). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 12108.66 .. NELBO:
12109.35
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.89 .. Rec_loss: 5363.47 .. NELBO: 5364.36
*****
*****
Validation loss decreased (10799.800781 --> 10728.715820). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.39 .. Rec_loss: 12002.07 .. NELBO:
12004.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 5327.72 .. NELBO: 5328.83
*****
*****
Validation loss decreased (10728.715820 --> 10657.656250). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.36 .. Rec_loss: 11897.28 .. NELBO:
11898.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5304.5 .. NELBO: 5304.95
*****
*****
Validation loss decreased (10657.656250 --> 10609.911133). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.45 .. Rec_loss: 11817.15 .. NELBO:
11818.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5302.92 .. NELBO: 5303.07
*****
*****
Validation loss decreased (10609.911133 --> 10606.129883). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 11782.76 .. NELBO:
11783.16
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5320.95 .. NELBO: 5321.11
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 11785.08 .. NELBO:
11785.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5341.54 .. NELBO: 5341.99
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.88 .. Rec_loss: 11793.86 .. NELBO:
11794.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.07 .. Rec_loss: 5349.86 .. NELBO: 5350.93
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.05 .. Rec_loss: 11787.8 .. NELBO:
11789.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 5347.05 .. NELBO: 5348.34
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.05 .. Rec_loss: 11772.91 .. NELBO:
11775.96
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.65 .. Rec_loss: 5339.91 .. NELBO: 5341.56
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 78
model: ETM(
  (t_drop): Dropout(p=0.0568693133743927, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=51, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=51, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=51, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 12263.3 .. NELBO:
12263.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5442.34 .. NELBO: 5442.59
*****
*****
Validation loss decreased (inf --> 10885.169922). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 12241.21 .. NELBO:
12243.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5425.81 .. NELBO: 5425.83
*****
*****
Validation loss decreased (10885.169922 --> 10851.668945). Saving model ...
*****

```

```

*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12188.75 .. NELBO:
12188.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5397.87 .. NELBO: 5398.03
*****
*****
Validation loss decreased (10851.668945 --> 10796.055664). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.93 .. Rec_loss: 12103.75 .. NELBO:
12104.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.37 .. Rec_loss: 5360.82 .. NELBO: 5363.19
*****
*****
Validation loss decreased (10796.055664 --> 10726.381836). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 4.05 .. Rec_loss: 11995.62 .. NELBO:
11999.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 5326.41 .. NELBO: 5327.02
*****
*****
Validation loss decreased (10726.381836 --> 10654.028320). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.55 .. Rec_loss: 11892.35 .. NELBO:
11893.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.55 .. Rec_loss: 5303.32 .. NELBO: 5304.87
*****
*****
Validation loss decreased (10654.028320 --> 10609.750000). Saving model ...
*****

```

```

*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 2.56 .. Rec_loss: 11814.1 .. NELBO:
11816.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5302.48 .. NELBO: 5302.74
*****
*****
Validation loss decreased (10609.750000 --> 10605.471680). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.06 .. Rec_loss: 11781.68 .. NELBO:
11782.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5320.47 .. NELBO: 5320.66
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 11783.44 .. NELBO:
11784.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5340.16 .. NELBO: 5340.56
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.41 .. Rec_loss: 11791.02 .. NELBO:
11792.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.77 .. Rec_loss: 5346.29 .. NELBO: 5348.06
*****
*****
EarlyStopping counter: 3 out of 5
*****

```

```

*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.2 .. Rec_loss: 11782.15 .. NELBO:
11786.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.21 .. Rec_loss: 5342.2 .. NELBO: 5344.41
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 5.18 .. Rec_loss: 11768.14 .. NELBO:
11773.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.18 .. Rec_loss: 5336.39 .. NELBO: 5338.57
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0568693133743927, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=51, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=51, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=51, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 12263.1 .. NELBO:
12263.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5441.87 .. NELBO: 5442.14
*****

```

```

*****
Validation loss decreased (inf --> 10884.274414). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.7 .. Rec_loss: 12239.17 .. NELBO:
12240.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5424.47 .. NELBO: 5424.49
*****
*****
Validation loss decreased (10884.274414 --> 10848.986328). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12184.28 .. NELBO:
12184.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5395.59 .. NELBO: 5395.71
*****
*****
Validation loss decreased (10848.986328 --> 10791.408203). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12097.6 .. NELBO:
12098.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.48 .. Rec_loss: 5358.51 .. NELBO: 5359.99
*****
*****
Validation loss decreased (10791.408203 --> 10719.980469). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.88 .. Rec_loss: 11988.75 .. NELBO:
11991.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5323.96 .. NELBO: 5324.48
*****

```

```

*****
Validation loss decreased (10719.980469 --> 10648.964844). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.83 .. Rec_loss: 11885.96 .. NELBO:
11886.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 5302.55 .. NELBO: 5303.21
*****
*****
Validation loss decreased (10648.964844 --> 10606.418945). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.4 .. Rec_loss: 11810.3 .. NELBO:
11811.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5303.55 .. NELBO: 5303.76
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 11781.18 .. NELBO:
11781.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5322.89 .. NELBO: 5323.04
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11785.69 .. NELBO:
11786.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 5341.9 .. NELBO: 5342.49
*****

```



```

*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.99 .. Rec_loss: 11791.62 .. NELBO:
11793.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.5 .. Rec_loss: 5347.54 .. NELBO: 5349.04
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.38 .. Rec_loss: 11782.58 .. NELBO:
11785.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.65 .. Rec_loss: 5341.33 .. NELBO: 5343.98
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0568693133743927, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=51, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=51, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=51, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12263.08 .. NELBO:
12263.3
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5441.67 .. NELBO: 5442.03
*****
*****
Validation loss decreased (inf --> 10884.056641). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.44 .. Rec_loss: 12238.91 .. NELBO:
12240.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5423.95 .. NELBO: 5423.98
*****
*****
Validation loss decreased (10884.056641 --> 10847.971680). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12182.42 .. NELBO:
12182.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5394.43 .. NELBO: 5394.61
*****
*****
Validation loss decreased (10847.971680 --> 10789.225586). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.96 .. Rec_loss: 12093.14 .. NELBO:
12094.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 5356.97 .. NELBO: 5358.57
*****
*****
Validation loss decreased (10789.225586 --> 10717.149414). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.06 .. Rec_loss: 11984.58 .. NELBO:
11987.64
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5322.71 .. NELB0: 5323.18
*****
*****
Validation loss decreased (10717.149414 --> 10646.363281). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.91 .. Rec_loss: 11882.26 .. NELB0:
11883.17
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.1 .. Rec_loss: 5301.91 .. NELB0: 5303.01
*****
*****
Validation loss decreased (10646.363281 --> 10606.022461). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 11807.22 .. NELB0:
11808.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5304.24 .. NELB0: 5304.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 11780.41 .. NELB0:
11781.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5324.5 .. NELB0: 5324.57
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 11786.56 .. NELB0:
11787.02
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.51 .. Rec_loss: 5341.72 .. NELBO: 5343.23
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 6.05 .. Rec_loss: 11787.69 .. NELBO:
11793.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.36 .. Rec_loss: 5345.91 .. NELBO: 5348.27
*****
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 5.79 .. Rec_loss: 11777.01 .. NELBO:
11782.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.26 .. Rec_loss: 5333.83 .. NELBO: 5340.09
*****
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 79
model: ETM(
  (t_drop): Dropout(p=0.054639464755112443, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12263.8 .. NELBO:

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```

12264.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.94 .. Rec_loss: 5443.23 .. NELBO: 5444.17
*****
*****
Validation loss decreased (inf --> 10888.346680). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.58 .. Rec_loss: 12244.11 .. NELBO:
12245.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5427.84 .. NELBO: 5427.85
*****
*****
Validation loss decreased (10888.346680 --> 10855.710938). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 12194.51 .. NELBO:
12194.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5400.8 .. NELBO: 5401.07
*****
*****
Validation loss decreased (10855.710938 --> 10802.143555). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12113.21 .. NELBO:
12113.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5365.23 .. NELBO: 5365.34
*****
*****
Validation loss decreased (10802.143555 --> 10730.684570). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 12009.07 .. NELBO:

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```
12009.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 5328.86 .. NELB0: 5329.83
*****
*****
Validation loss decreased (10730.684570 --> 10659.644531). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.64 .. Rec_loss: 11900.85 .. NELB0:
11902.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5304.83 .. NELB0: 5305.13
*****
*****
Validation loss decreased (10659.644531 --> 10610.258789). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11820.09 .. NELB0:
11820.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5302.53 .. NELB0: 5302.62
*****
*****
Validation loss decreased (10610.258789 --> 10605.245117). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 11783.63 .. NELB0:
11783.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5320.07 .. NELB0: 5320.43
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 11784.81 .. NELB0:
```

```

11785.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5341.33 .. NELBO: 5341.57
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.42 .. Rec_loss: 11793.61 .. NELBO:
11795.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.28 .. Rec_loss: 5349.98 .. NELBO: 5351.26
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.92 .. Rec_loss: 11788.31 .. NELBO:
11790.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.63 .. Rec_loss: 5347.33 .. NELBO: 5348.96
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 4.09 .. Rec_loss: 11772.74 .. NELBO:
11776.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.91 .. Rec_loss: 5338.21 .. NELBO: 5342.12
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
    (t_drop): Dropout(p=0.054639464755112443, inplace=False)

```

```

(theta_act): SELU()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=82, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): SELU()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 12263.59 .. NELBO:
12263.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.18 .. Rec_loss: 5442.78 .. NELBO: 5443.96
*****
*****
Validation loss decreased (inf --> 10887.922852). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.75 .. Rec_loss: 12242.48 .. NELBO:
12244.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5426.85 .. NELBO: 5426.87
*****
*****
Validation loss decreased (10887.922852 --> 10853.749023). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12192.03 .. NELBO:
12192.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5399.54 .. NELBO: 5399.87
*****
*****
Validation loss decreased (10853.749023 --> 10799.737305). Saving model ...

```



```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12109.7 .. NELBO:
12110.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 5363.95 .. NELBO: 5364.59
*****
*****
Validation loss decreased (10799.737305 --> 10729.173828). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.61 .. Rec_loss: 12005.32 .. NELBO:
12006.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.3 .. Rec_loss: 5328.15 .. NELBO: 5329.45
*****
*****
Validation loss decreased (10729.173828 --> 10658.894531). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.54 .. Rec_loss: 11900.15 .. NELBO:
11901.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5304.61 .. NELBO: 5304.85
*****
*****
Validation loss decreased (10658.894531 --> 10609.701172). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.35 .. Rec_loss: 11819.85 .. NELBO:
11821.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5302.38 .. NELBO: 5302.44
*****
*****
Validation loss decreased (10609.701172 --> 10604.881836). Saving model ...

```

```

*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 11783.76 .. NELBO:
11783.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5319.73 .. NELBO: 5320.17
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 11784.78 .. NELBO:
11785.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5341.05 .. NELBO: 5341.22
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 11794.07 .. NELBO:
11794.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.22 .. Rec_loss: 5348.42 .. NELBO: 5350.64
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 3.82 .. Rec_loss: 11785.89 .. NELBO:
11789.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.31 .. Rec_loss: 5347.05 .. NELBO: 5348.36
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.82 .. Rec_loss: 11772.83 .. NELBO:
11775.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.54 .. Rec_loss: 5337.69 .. NELBO: 5341.23
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.054639464755112443, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 12263.85 .. NELBO:
12264.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 5443.18 .. NELBO: 5443.99
*****
*****
Validation loss decreased (inf --> 10887.991211). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.66 .. Rec_loss: 12243.77 .. NELBO:
12245.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5427.82 .. NELBO: 5427.84

```

```

*****
*****
Validation loss decreased (10887.991211 --> 10855.672852). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 12194.83 .. NELBO:
12195.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5401.07 .. NELBO: 5401.35
*****
*****
Validation loss decreased (10855.672852 --> 10802.697266). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 12114.22 .. NELBO:
12114.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5365.74 .. NELBO: 5365.96
*****
*****
Validation loss decreased (10802.697266 --> 10731.919922). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12010.54 .. NELBO:
12011.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 5329.48 .. NELBO: 5330.6
*****
*****
Validation loss decreased (10731.919922 --> 10661.202148). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 11902.64 .. NELBO:
11904.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5305.18 .. NELBO: 5305.47

```

```

*****
*****
Validation loss decreased (10661.202148 --> 10610.937500). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 11821.41 .. NELBO:
11821.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5302.32 .. NELBO: 5302.38
*****
*****
Validation loss decreased (10610.937500 --> 10604.767578). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 11783.63 .. NELBO:
11783.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 5319.39 .. NELBO: 5320.03
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 11784.68 .. NELBO:
11785.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5341.28 .. NELBO: 5341.44
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.45 .. Rec_loss: 11794.06 .. NELBO:
11795.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.58 .. Rec_loss: 5349.53 .. NELBO: 5351.11

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.38 .. Rec_loss: 11787.44 .. NELBO:
11789.82
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.32 .. Rec_loss: 5347.72 .. NELBO: 5349.04
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.11 .. Rec_loss: 11773.76 .. NELBO:
11776.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.41 .. Rec_loss: 5339.04 .. NELBO: 5342.45
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 80
model: ETM(
  (t_drop): Dropout(p=0.06183929848585549, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 73.32 .. Rec_loss: 12263.73 .. NELBO:
12337.05
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.84 .. Rec_loss: 5443.63 .. NELBO: 5450.47
*****
*****
Validation loss decreased (inf --> 10900.948242). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.37 .. Rec_loss: 12247.22 .. NELBO:
12254.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5431.36 .. NELBO: 5431.69
*****
*****
Validation loss decreased (10900.948242 --> 10863.393555). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 12207.13 .. NELBO:
12207.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.96 .. NELBO: 5408.02
*****
*****
Validation loss decreased (10863.393555 --> 10816.040039). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12135.23 .. NELBO:
12135.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.95 .. NELBO: 5374.97
*****
*****
Validation loss decreased (10816.040039 --> 10749.944336). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12037.84 .. NELBO:
12037.88
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.47 .. NELBO: 5338.49
*****
*****
Validation loss decreased (10749.944336 --> 10676.963867). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11929.69 .. NELBO:
11929.72
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.53 .. NELBO: 5309.55
*****
*****
Validation loss decreased (10676.963867 --> 10619.099609). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.49 .. NELBO:
11838.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.26 .. NELBO: 5300.28
*****
*****
Validation loss decreased (10619.099609 --> 10600.550781). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.66 .. NELBO:
11787.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.9 .. NELBO: 5313.92
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.93 .. NELBO:
11781.96
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.2 .. NELBO: 5337.22
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.32 .. NELBO:
11794.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.86 .. NELBO: 5351.88
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.21 .. NELBO:
11796.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.88 .. NELBO: 5352.9
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.48 .. NELBO:
11783.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.54 .. NELBO: 5346.55
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06183929848585549, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)

```

```

(alphas): Linear(in_features=300, out_features=70, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 81.99 .. Rec_loss: 12263.7 .. NELBO:
12345.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.52 .. Rec_loss: 5443.67 .. NELBO: 5451.19
*****
*****
Validation loss decreased (inf --> 10902.366211). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.18 .. Rec_loss: 12247.25 .. NELBO:
12255.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5431.1 .. NELBO: 5431.5
*****
*****
Validation loss decreased (10902.366211 --> 10863.003906). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12206.13 .. NELBO:
12206.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.69 .. NELBO: 5407.75
*****
*****
Validation loss decreased (10863.003906 --> 10815.514648). Saving model ...
*****
*****

```

```

Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12134.55 .. NELBO:
12134.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.84 .. NELBO: 5374.86
*****
*****
Validation loss decreased (10815.514648 --> 10749.716797). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12037.52 .. NELBO:
12037.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.57 .. NELBO: 5338.59
*****
*****
Validation loss decreased (10749.716797 --> 10677.174805). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11930.13 .. NELBO:
11930.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.69 .. NELBO: 5309.71
*****
*****
Validation loss decreased (10677.174805 --> 10619.403320). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11837.58 .. NELBO:
11837.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.28 .. NELBO: 5300.3
*****
*****
Validation loss decreased (10619.403320 --> 10600.600586). Saving model ...
*****
*****

```

```

Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.14 .. NELBO:
11787.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.8 .. NELBO: 5313.82
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.29 .. NELBO:
11781.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.16 .. NELBO: 5337.18
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.12 .. NELBO:
11794.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.95 .. NELBO: 5351.97
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.13 .. NELBO:
11796.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.04 .. NELBO: 5353.06
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****

```

```

Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.55 .. NELBO:
11783.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.75 .. NELBO: 5346.77
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06183929848585549, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 95.2 .. Rec_loss: 12264.04 .. NELBO:
12359.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.27 .. Rec_loss: 5444.0 .. NELBO: 5452.27
*****
*****
Validation loss decreased (inf --> 10904.541016). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.85 .. Rec_loss: 12248.66 .. NELBO:
12257.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5432.43 .. NELBO: 5432.9
*****
*****

```

```

Validation loss decreased (10904.541016 --> 10865.790039). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 12209.98 .. NELBO:
12210.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5409.98 .. NELBO: 5410.09
*****
*****
Validation loss decreased (10865.790039 --> 10820.177734). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 12141.5 .. NELBO:
12141.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.77 .. NELBO: 5377.8
*****
*****
Validation loss decreased (10820.177734 --> 10755.600586). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12045.5 .. NELBO:
12045.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.46 .. NELBO: 5341.48
*****
*****
Validation loss decreased (10755.600586 --> 10682.958008). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11937.96 .. NELBO:
11938.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.53 .. NELBO: 5311.55
*****
*****

```

```

Validation loss decreased (10682.958008 --> 10623.103516). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11844.1 .. NELBO:
11844.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5300.24 .. NELBO: 5300.28
*****
*****
Validation loss decreased (10623.103516 --> 10600.547852). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11788.89 .. NELBO:
11788.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5312.19 .. NELBO: 5312.24
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11780.45 .. NELBO:
11780.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5335.46 .. NELBO: 5335.51
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11792.96 .. NELBO:
11793.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5351.34 .. NELBO: 5351.38
*****
*****

```

```

EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11796.05 .. NELBO:
11796.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5353.43 .. NELBO: 5353.47
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11784.9 .. NELBO:
11784.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5347.44 .. NELBO: 5347.47
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 81
model: ETM(
  (t_drop): Dropout(p=0.06475895414278507, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.67 .. Rec_loss: 12263.92 .. NELBO:
12343.59
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.33 .. Rec_loss: 5443.74 .. NELBO: 5451.07
*****
*****
Validation loss decreased (inf --> 10902.153320). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.91 .. Rec_loss: 12247.45 .. NELBO:
12255.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5431.38 .. NELBO: 5431.76
*****
*****
Validation loss decreased (10902.153320 --> 10863.515625). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 12206.97 .. NELBO:
12207.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.23 .. NELBO: 5408.3
*****
*****
Validation loss decreased (10863.515625 --> 10816.589844). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12135.97 .. NELBO:
12136.07
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.56 .. NELBO: 5375.58
*****
*****
Validation loss decreased (10816.589844 --> 10751.163086). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12039.19 .. NELBO:
12039.24
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.3 .. NELBO: 5339.32
*****
*****
Validation loss decreased (10751.163086 --> 10678.633789). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11931.1 .. NELBO:
11931.14
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.24 .. NELBO: 5310.26
*****
*****
Validation loss decreased (10678.633789 --> 10620.524414). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11839.0 .. NELBO:
11839.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.54 .. NELBO: 5300.56
*****
*****
Validation loss decreased (10620.524414 --> 10601.115234). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.43 .. NELBO:
11787.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.82 .. NELBO: 5313.84
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.06 .. NELBO:
11781.1
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.16 .. NELBO: 5337.18
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.3 .. NELBO:
11793.34
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.12 .. NELBO: 5352.14
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.71 .. NELBO:
11795.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.41 .. NELBO: 5353.43
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.68 .. NELBO:
11783.72
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.19 .. NELBO: 5347.21
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06475895414278507, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(

```

```

    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 89.1 .. Rec_loss: 12264.18 .. NELBO:
12353.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.22 .. Rec_loss: 5443.63 .. NELBO: 5451.85
*****
*****
Validation loss decreased (inf --> 10903.714844). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.92 .. Rec_loss: 12246.8 .. NELBO:
12255.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5430.54 .. NELBO: 5430.97
*****
*****
Validation loss decreased (10903.714844 --> 10861.936523). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12204.27 .. NELBO:
12204.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5406.49 .. NELBO: 5406.56
*****
*****
Validation loss decreased (10861.936523 --> 10813.106445). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12131.17 .. NELBO:
12131.27

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5373.06 .. NELBO: 5373.08
*****
*****
Validation loss decreased (10813.106445 --> 10746.162109). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12032.77 .. NELBO:
12032.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.73 .. NELBO: 5336.75
*****
*****
Validation loss decreased (10746.162109 --> 10673.488281). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11924.68 .. NELBO:
11924.71
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5308.6 .. NELBO: 5308.61
*****
*****
Validation loss decreased (10673.488281 --> 10617.218750). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11834.69 .. NELBO:
11834.72
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.51 .. NELBO: 5300.52
*****
*****
Validation loss decreased (10617.218750 --> 10601.048828). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.53 .. NELBO:
11786.56

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5314.96 .. NELBO: 5314.97
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.94 .. NELBO:
11781.97
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.07 .. NELBO: 5338.08
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.42 .. NELBO:
11794.45
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.07 .. NELBO: 5352.08
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.59 .. NELBO:
11794.62
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.68 .. NELBO: 5352.69
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.45 .. NELBO:
11782.48

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.32 .. NELBO: 5346.33
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06475895414278507, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 84.93 .. Rec_loss: 12264.34 .. NELBO:
12349.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.33 .. Rec_loss: 5444.48 .. NELBO: 5452.81
*****
*****
Validation loss decreased (inf --> 10905.606445). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 9.09 .. Rec_loss: 12249.83 .. NELBO:
12258.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5433.31 .. NELBO: 5433.73
*****
*****
Validation loss decreased (10905.606445 --> 10867.455078). Saving model ...
*****

```

```

*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12213.15 .. NELBO:
12213.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.82 .. NELBO: 5411.89
*****
*****
Validation loss decreased (10867.455078 --> 10823.782227). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12146.63 .. NELBO:
12146.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.46 .. NELBO: 5380.49
*****
*****
Validation loss decreased (10823.782227 --> 10760.979492). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12053.09 .. NELBO:
12053.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.36 .. NELBO: 5344.38
*****
*****
Validation loss decreased (10760.979492 --> 10688.757812). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11945.96 .. NELBO:
11946.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.54 .. NELBO: 5313.56
*****
*****
Validation loss decreased (10688.757812 --> 10627.105469). Saving model ...
*****

```



```

*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11849.43 .. NELBO:
11849.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.38 .. NELBO: 5300.4
*****
*****
Validation loss decreased (10627.105469 --> 10600.803711). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.93 .. NELBO:
11790.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.68 .. NELBO: 5310.7
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.21 .. NELBO:
11779.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.01 .. NELBO: 5334.03
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.04 .. NELBO:
11792.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.18 .. NELBO: 5351.2
*****
*****
EarlyStopping counter: 3 out of 5
*****

```

```

*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11797.24 .. NELBO:
11797.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.29 .. NELBO: 5354.31
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.26 .. NELBO:
11786.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.57 .. NELBO: 5348.59
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 82
model: ETM(
  (t_drop): Dropout(p=0.06301607589253923, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 70.33 .. Rec_loss: 12264.19 .. NELBO:
12334.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.91 .. Rec_loss: 5444.19 .. NELBO: 5451.1

```

```

*****
*****
Validation loss decreased (inf --> 10902.192383). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.51 .. Rec_loss: 12248.29 .. NELBO:
12255.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5431.95 .. NELBO: 5432.26
*****
*****
Validation loss decreased (10902.192383 --> 10864.500977). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 12208.52 .. NELBO:
12208.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5408.98 .. NELBO: 5409.03
*****
*****
Validation loss decreased (10864.500977 --> 10818.062500). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 12138.69 .. NELBO:
12138.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.44 .. NELBO: 5376.46
*****
*****
Validation loss decreased (10818.062500 --> 10752.910156). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12041.17 .. NELBO:
12041.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5340.15 .. NELBO: 5340.16

```

```

*****
*****
Validation loss decreased (10752.910156 --> 10680.321289). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11933.25 .. NELBO:
11933.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.78 .. NELBO: 5310.79
*****
*****
Validation loss decreased (10680.321289 --> 10621.591797). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11840.97 .. NELBO:
11841.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.54 .. NELBO: 5300.56
*****
*****
Validation loss decreased (10621.591797 --> 10601.107422). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.29 .. NELBO:
11788.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.33 .. NELBO: 5313.35
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.17 .. NELBO:
11781.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.54 .. NELBO: 5336.56

```

```

*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.82 .. NELBO:
11793.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.69 .. NELBO: 5351.71
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.32 .. NELBO:
11796.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.13 .. NELBO: 5353.15
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.89 .. NELBO:
11783.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.96 .. NELBO: 5346.98
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06301607589253923, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()

```

```

        (2): Linear(in_features=800, out_features=800, bias=True)
        (3): Sigmoid()
    )
    (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
    (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 75.96 .. Rec_loss: 12263.55 .. NELBO:
12339.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.81 .. Rec_loss: 5443.29 .. NELBO: 5450.1
*****
*****
Validation loss decreased (inf --> 10900.200195). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.49 .. Rec_loss: 12245.58 .. NELBO:
12253.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5429.67 .. NELBO: 5430.1
*****
*****
Validation loss decreased (10900.200195 --> 10860.211914). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12201.43 .. NELBO:
12202.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5404.75 .. NELBO: 5404.83
*****
*****
Validation loss decreased (10860.211914 --> 10809.652344). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12125.32 .. NELBO:
12125.43
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5370.66 .. NELBO: 5370.68
*****
*****
Validation loss decreased (10809.652344 --> 10741.378906). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12024.4 .. NELBO:
12024.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.38 .. NELBO: 5334.4
*****
*****
Validation loss decreased (10741.378906 --> 10668.792969). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11916.76 .. NELBO:
11916.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5307.41 .. NELBO: 5307.43
*****
*****
Validation loss decreased (10668.792969 --> 10614.847656). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11828.79 .. NELBO:
11828.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5301.32 .. NELBO: 5301.34
*****
*****
Validation loss decreased (10614.847656 --> 10602.681641). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.76 .. NELBO:
11784.79
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5317.16 .. NELBO: 5317.18
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.26 .. NELBO:
11783.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.93 .. NELBO: 5339.95
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.4 .. NELBO:
11795.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.57 .. NELBO: 5352.59
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.73 .. NELBO:
11794.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.15 .. NELBO: 5352.17
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.45 .. NELBO:
11781.48
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.45 .. NELBO: 5345.47
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06301607589253923, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 81.38 .. Rec_loss: 12264.12 .. NELBO:
12345.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.77 .. Rec_loss: 5444.14 .. NELBO: 5451.91
*****
*****
Validation loss decreased (inf --> 10903.819336). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.42 .. Rec_loss: 12249.2 .. NELBO:
12257.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.62 .. NELBO: 5433.05
*****
*****
Validation loss decreased (10903.819336 --> 10866.094727). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12211.56 .. NELBO:

```

```

12212.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.44 .. NELBO: 5410.51
*****
*****
Validation loss decreased (10866.094727 --> 10821.031250). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12143.87 .. NELBO:
12143.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.63 .. NELBO: 5378.66
*****
*****
Validation loss decreased (10821.031250 --> 10757.318359). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12049.77 .. NELBO:
12049.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.55 .. NELBO: 5342.57
*****
*****
Validation loss decreased (10757.318359 --> 10685.144531). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11943.0 .. NELBO:
11943.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.3 .. NELBO: 5312.32
*****
*****
Validation loss decreased (10685.144531 --> 10624.631836). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11847.94 .. NELBO:

```

```
11847.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.08 .. NELB0: 5300.1
*****
*****
Validation loss decreased (10624.631836 --> 10600.188477). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.1 .. NELB0:
11791.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.0 .. NELB0: 5311.02
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.42 .. NELB0:
11780.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.06 .. NELB0: 5334.08
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.68 .. NELB0:
11791.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.68 .. NELB0: 5350.7
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.57 .. NELB0:
```

```

11795.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.58 .. NELBO: 5353.6
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.5 .. NELBO:
11785.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.96 .. NELBO: 5347.98
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 83
model: ETM(
  (t_drop): Dropout(p=0.012104404851198026, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=54, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=54, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=54, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 72.56 .. Rec_loss: 12263.62 .. NELBO:
12336.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.41 .. Rec_loss: 5443.67 .. NELBO: 5451.08
*****
*****

```

```

Validation loss decreased (inf --> 10902.146484). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.95 .. Rec_loss: 12247.25 .. NELBO:
12255.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5431.23 .. NELBO: 5431.68
*****
*****
Validation loss decreased (10902.146484 --> 10863.363281). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12206.88 .. NELBO:
12207.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5407.87 .. NELBO: 5407.98
*****
*****
Validation loss decreased (10863.363281 --> 10815.953125). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 12134.71 .. NELBO:
12134.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5375.08 .. NELBO: 5375.12
*****
*****
Validation loss decreased (10815.953125 --> 10750.237305). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12038.45 .. NELBO:
12038.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5338.83 .. NELBO: 5338.86
*****
*****

```

```
Validation loss decreased (10750.237305 --> 10677.720703). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11930.25 .. NELBO:
11930.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5309.83 .. NELBO: 5309.88
*****
*****
Validation loss decreased (10677.720703 --> 10619.760742). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11838.73 .. NELBO:
11838.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5300.17 .. NELBO: 5300.26
*****
*****
Validation loss decreased (10619.760742 --> 10600.523438). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 11787.23 .. NELBO:
11787.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5313.42 .. NELBO: 5313.54
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 11780.73 .. NELBO:
11780.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5336.66 .. NELBO: 5336.78
*****
*****
```

```

EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 11793.92 .. NELBO:
11794.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5351.54 .. NELBO: 5351.62
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11795.77 .. NELBO:
11795.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5352.89 .. NELBO: 5352.93
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11783.12 .. NELBO:
11783.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.86 .. NELBO: 5346.89
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.012104404851198026, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=54, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
)

```

```

)
(mu_q_theta): Linear(in_features=800, out_features=54, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=54, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 73.36 .. Rec_loss: 12263.4 .. NELBO:
12336.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.84 .. Rec_loss: 5443.06 .. NELBO: 5449.9
*****
*****
Validation loss decreased (inf --> 10899.794922). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 7.38 .. Rec_loss: 12245.34 .. NELBO:
12252.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5429.93 .. NELBO: 5430.36
*****
*****
Validation loss decreased (10899.794922 --> 10860.720703). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12202.31 .. NELBO:
12202.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5405.75 .. NELBO: 5405.82
*****
*****
Validation loss decreased (10860.720703 --> 10811.625000). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12127.93 .. NELBO:
12128.03
*****
*****
*****
*****

```



```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5372.18 .. NELBO: 5372.2
*****
*****
Validation loss decreased (10811.625000 --> 10744.393555). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12029.7 .. NELBO:
12029.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.77 .. NELBO: 5335.78
*****
*****
Validation loss decreased (10744.393555 --> 10671.571289). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11920.71 .. NELBO:
11920.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5307.87 .. NELBO: 5307.88
*****
*****
Validation loss decreased (10671.571289 --> 10615.763672). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11831.17 .. NELBO:
11831.2
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.55 .. NELBO: 5300.56
*****
*****
Validation loss decreased (10615.763672 --> 10601.125977). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.66 .. NELBO:
11783.69
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5316.05 .. NELBO: 5316.06
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.39 .. NELBO:
11781.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5339.77 .. NELBO: 5339.78
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.85 .. NELBO:
11794.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.57 .. NELBO: 5353.58
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.17 .. NELBO:
11796.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.57 .. NELBO: 5353.58
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.33 .. NELBO:
11782.36
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.69 .. NELBO: 5346.7
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.012104404851198026, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=54, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=54, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=54, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 69.34 .. Rec_loss: 12264.32 .. NELBO:
12333.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.76 .. Rec_loss: 5443.92 .. NELBO: 5450.68
*****
*****
Validation loss decreased (inf --> 10901.364258). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.15 .. Rec_loss: 12248.68 .. NELBO:
12255.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5432.53 .. NELBO: 5432.93
*****
*****
Validation loss decreased (10901.364258 --> 10865.858398). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12211.4 .. NELBO:
12211.99
*****

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```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.62 .. NELBO: 5410.7
*****
*****
Validation loss decreased (10865.858398 --> 10821.388672). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12143.87 .. NELBO:
12143.99
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.04 .. NELBO: 5379.07
*****
*****
Validation loss decreased (10821.388672 --> 10758.121094). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12050.45 .. NELBO:
12050.5
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.98 .. NELBO: 5343.0
*****
*****
Validation loss decreased (10758.121094 --> 10685.996094). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11943.08 .. NELBO:
11943.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5312.57 .. NELBO: 5312.6
*****
*****
Validation loss decreased (10685.996094 --> 10625.194336). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11847.4 .. NELBO:
11847.46
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5300.13 .. NELBO: 5300.17
*****
*****
Validation loss decreased (10625.194336 --> 10600.321289). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11790.4 .. NELBO:
11790.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5310.95 .. NELBO: 5310.99
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11779.43 .. NELBO:
11779.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5334.18 .. NELBO: 5334.22
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11792.02 .. NELBO:
11792.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5350.98 .. NELBO: 5351.02
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11795.73 .. NELBO:
11795.8
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.83 .. NELBO: 5353.86
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11785.33 .. NELBO:
11785.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5348.08 .. NELBO: 5348.11
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 84
model: ETM(
  (t_drop): Dropout(p=0.06053040908873156, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=93, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=93, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=93, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 102.37 .. Rec_loss: 12264.27 .. NELBO:
12366.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.73 .. Rec_loss: 5443.92 .. NELBO: 5452.65
*****
*****
Validation loss decreased (inf --> 10905.307617). Saving model ...
*****

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```

*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.48 .. Rec_loss: 12248.2 .. NELBO:
12257.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 5431.69 .. NELBO: 5432.24
*****
*****
Validation loss decreased (10905.307617 --> 10864.496094). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 12208.48 .. NELBO:
12209.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5408.45 .. NELBO: 5408.54
*****
*****
Validation loss decreased (10864.496094 --> 10817.076172). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12137.27 .. NELBO:
12137.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.68 .. NELBO: 5375.71
*****
*****
Validation loss decreased (10817.076172 --> 10751.417969). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12040.32 .. NELBO:
12040.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.36 .. NELBO: 5339.38
*****
*****
Validation loss decreased (10751.417969 --> 10678.763672). Saving model ...
*****

```

```

*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11933.31 .. NELBO:
11933.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.23 .. NELBO: 5310.25
*****
*****
Validation loss decreased (10678.763672 --> 10620.500000). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11840.87 .. NELBO:
11840.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.35 .. NELBO: 5300.37
*****
*****
Validation loss decreased (10620.500000 --> 10600.743164). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.62 .. NELBO:
11788.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.29 .. NELBO: 5313.31
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.92 .. NELBO:
11781.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.33 .. NELBO: 5336.35
*****
*****
EarlyStopping counter: 2 out of 5
*****

```



```

*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.63 .. NELBO:
11793.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.31 .. NELBO: 5351.33
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.51 .. NELBO:
11795.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.8 .. NELBO: 5352.82
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.73 .. NELBO:
11783.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.73 .. NELBO: 5346.75
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06053040908873156, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=93, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=93, bias=True)

```

```

(logsigma_q_theta): Linear(in_features=800, out_features=93, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 97.58 .. Rec_loss: 12264.21 .. NELBO:
12361.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.74 .. Rec_loss: 5444.02 .. NELBO: 5452.76
*****
*****
Validation loss decreased (inf --> 10905.520508). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.47 .. Rec_loss: 12247.99 .. NELBO:
12257.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5431.06 .. NELBO: 5431.55
*****
*****
Validation loss decreased (10905.520508 --> 10863.094727). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 12206.3 .. NELBO:
12207.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5407.32 .. NELBO: 5407.41
*****
*****
Validation loss decreased (10863.094727 --> 10814.817383). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12134.52 .. NELBO:
12134.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5374.1 .. NELBO: 5374.13
*****

```

```

*****
Validation loss decreased (10814.817383 --> 10748.263672). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12036.21 .. NELBO:
12036.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.67 .. NELBO: 5337.69
*****
*****
Validation loss decreased (10748.263672 --> 10675.377930). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11928.88 .. NELBO:
11928.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.98 .. NELBO: 5309.0
*****
*****
Validation loss decreased (10675.377930 --> 10618.009766). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11838.08 .. NELBO:
11838.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.04 .. NELBO: 5300.06
*****
*****
Validation loss decreased (10618.009766 --> 10600.120117). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.97 .. NELBO:
11788.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.86 .. NELBO: 5313.88
*****

```

```

*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.2 .. NELBO:
11782.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.07 .. NELBO: 5337.09
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.95 .. NELBO:
11793.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.57 .. NELBO: 5351.59
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.26 .. NELBO:
11795.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.57 .. NELBO: 5352.59
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.12 .. NELBO:
11783.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.34 .. NELBO: 5346.36
*****

```

```

*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06053040908873156, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=93, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=93, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=93, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 93.8 .. Rec_loss: 12264.49 .. NELB0:
12358.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.36 .. Rec_loss: 5444.3 .. NELB0: 5452.66
*****
*****
Validation loss decreased (inf --> 10905.321289). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.04 .. Rec_loss: 12249.27 .. NELB0:
12258.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.5 .. NELB0: 5432.93
*****
*****
Validation loss decreased (10905.321289 --> 10865.867188). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12210.36 .. NELB0:
12210.98
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.98 .. NELBO: 5410.06
*****
*****
Validation loss decreased (10865.867188 --> 10820.116211). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12141.62 .. NELBO:
12141.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.66 .. NELBO: 5377.69
*****
*****
Validation loss decreased (10820.116211 --> 10755.389648). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12045.52 .. NELBO:
12045.58
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.22 .. NELBO: 5341.24
*****
*****
Validation loss decreased (10755.389648 --> 10682.482422). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11938.05 .. NELBO:
11938.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.21 .. NELBO: 5311.23
*****
*****
Validation loss decreased (10682.482422 --> 10622.464844). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11843.47 .. NELBO:
11843.52
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.01 .. NELBO: 5300.03
*****
*****
Validation loss decreased (10622.464844 --> 10600.059570). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11789.24 .. NELBO:
11789.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.12 .. NELBO: 5312.14
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11780.61 .. NELBO:
11780.66
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.48 .. NELBO: 5335.5
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.71 .. NELBO:
11793.76
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.22 .. NELBO: 5351.24
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11795.92 .. NELBO:
11795.97
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.21 .. NELBO: 5353.23
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.7 .. NELBO:
11784.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.26 .. NELBO: 5347.28
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 85
model: ETM(
  (t_drop): Dropout(p=0.07090350315722976, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 80.79 .. Rec_loss: 12263.71 .. NELBO:
12344.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.64 .. Rec_loss: 5443.36 .. NELBO: 5451.0
*****
*****
Validation loss decreased (inf --> 10901.989258). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.33 .. Rec_loss: 12245.72 .. NELBO:

```


12254.05

```
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5429.99 .. NELBO: 5430.4
*****
*****
Validation loss decreased (10901.989258 --> 10860.793945). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12202.11 .. NELBO:
12202.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5405.6 .. NELBO: 5405.66
*****
*****
Validation loss decreased (10860.793945 --> 10811.333984). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12127.87 .. NELBO:
12127.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5372.01 .. NELBO: 5372.03
*****
*****
Validation loss decreased (10811.333984 --> 10744.073242). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12029.15 .. NELBO:
12029.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.81 .. NELBO: 5335.83
*****
*****
Validation loss decreased (10744.073242 --> 10671.650391). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11921.35 .. NELBO:
```

```
11921.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.19 .. NELB0: 5308.21
*****
*****
Validation loss decreased (10671.650391 --> 10616.409180). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11832.34 .. NELB0:
11832.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.85 .. NELB0: 5300.87
*****
*****
Validation loss decreased (10616.409180 --> 10601.728516). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.96 .. NELB0:
11785.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.77 .. NELB0: 5315.79
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.51 .. NELB0:
11782.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.7 .. NELB0: 5338.72
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.52 .. NELB0:
```

```

11794.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.14 .. NELBO: 5352.16
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.89 .. NELBO:
11794.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.37 .. NELBO: 5352.39
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.88 .. NELBO:
11781.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.88 .. NELBO: 5345.9
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.07090350315722976, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)

```

```

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 82.09 .. Rec_loss: 12264.59 .. NELBO:
12346.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.29 .. Rec_loss: 5444.58 .. NELBO: 5452.87
*****
*****
Validation loss decreased (inf --> 10905.741211). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.02 .. Rec_loss: 12250.4 .. NELBO:
12259.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5433.27 .. NELBO: 5433.67
*****
*****
Validation loss decreased (10905.741211 --> 10867.349609). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12213.34 .. NELBO:
12213.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5411.48 .. NELBO: 5411.54
*****
*****
Validation loss decreased (10867.349609 --> 10823.083984). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12146.53 .. NELBO:
12146.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.83 .. NELBO: 5379.85
*****
*****
Validation loss decreased (10823.083984 --> 10759.701172). Saving model ...

```

```

*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12053.15 .. NELBO:
12053.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.57 .. NELBO: 5343.59
*****
*****
Validation loss decreased (10759.701172 --> 10687.178711). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11945.99 .. NELBO:
11946.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.88 .. NELBO: 5312.9
*****
*****
Validation loss decreased (10687.178711 --> 10625.785156). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11850.2 .. NELBO:
11850.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.07 .. NELBO: 5300.09
*****
*****
Validation loss decreased (10625.785156 --> 10600.180664). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.38 .. NELBO:
11792.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.52 .. NELBO: 5310.54
*****
*****
EarlyStopping counter: 1 out of 5

```

```

*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.79 .. NELBO:
11780.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.51 .. NELBO: 5333.53
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.0 .. NELBO:
11792.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.27 .. NELBO: 5350.29
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.37 .. NELBO:
11796.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.34 .. NELBO: 5353.36
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.75 .. NELBO:
11785.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.83 .. NELBO: 5347.85
*****
*****
EarlyStopping counter: 5 out of 5

```

Early stopping

```
model: ETM(
  (t_drop): Dropout(p=0.07090350315722976, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 87.38 .. Rec_loss: 12264.25 .. NELBO:
12351.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.9 .. Rec_loss: 5444.37 .. NELBO: 5452.27
*****
*****
Validation loss decreased (inf --> 10904.553711). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.66 .. Rec_loss: 12249.68 .. NELBO:
12258.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5433.05 .. NELBO: 5433.48
*****
*****
Validation loss decreased (10904.553711 --> 10866.965820). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12212.16 .. NELBO:
12212.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5411.06 .. NELBO: 5411.12
```

```

*****
*****
Validation loss decreased (10866.965820 --> 10822.239258). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12144.45 .. NELBO:
12144.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.27 .. NELBO: 5379.29
*****
*****
Validation loss decreased (10822.239258 --> 10758.590820). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12049.79 .. NELBO:
12049.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.06 .. NELBO: 5343.08
*****
*****
Validation loss decreased (10758.590820 --> 10686.155273). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11943.16 .. NELBO:
11943.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.65 .. NELBO: 5312.66
*****
*****
Validation loss decreased (10686.155273 --> 10625.330078). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.36 .. NELBO:
11847.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.35 .. NELBO: 5300.36

```



```

*****
*****
Validation loss decreased (10625.330078 --> 10600.731445). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.84 .. NELBO:
11790.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.29 .. NELBO: 5311.31
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.27 .. NELBO:
11780.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.41 .. NELBO: 5334.43
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.11 .. NELBO:
11792.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.95 .. NELBO: 5350.97
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.03 .. NELBO:
11796.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.68 .. NELBO: 5353.7

```

```

*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.23 .. NELBO:
11785.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.93 .. NELBO: 5347.94
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 86
model: ETM(
  (t_drop): Dropout(p=0.059329539211297806, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.06 .. Rec_loss: 12264.23 .. NELBO:
12343.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.43 .. Rec_loss: 5443.94 .. NELBO: 5451.37
*****
*****
Validation loss decreased (inf --> 10902.739258). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.04 .. Rec_loss: 12248.08 .. NELBO:
12256.12
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5431.86 .. NELBO: 5432.21
*****
*****
Validation loss decreased (10902.739258 --> 10864.418945). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12208.54 .. NELBO:
12209.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5409.27 .. NELBO: 5409.33
*****
*****
Validation loss decreased (10864.418945 --> 10818.658203). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12139.38 .. NELBO:
12139.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.04 .. NELBO: 5377.06
*****
*****
Validation loss decreased (10818.658203 --> 10754.116211). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12043.32 .. NELBO:
12043.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.79 .. NELBO: 5340.81
*****
*****
Validation loss decreased (10754.116211 --> 10681.612305). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.12 .. NELBO:
11936.16
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.13 .. NELBO: 5311.15
*****
*****
Validation loss decreased (10681.612305 --> 10622.302734). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.09 .. NELBO:
11842.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.45 .. NELBO: 5300.47
*****
*****
Validation loss decreased (10622.302734 --> 10600.943359). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.62 .. NELBO:
11788.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.04 .. NELBO: 5313.06
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.63 .. NELBO:
11780.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.46 .. NELBO: 5336.48
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.97 .. NELBO:
11793.01
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.94 .. NELBO: 5351.96
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.66 .. NELBO:
11795.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.57 .. NELBO: 5353.59
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.03 .. NELBO:
11784.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.4 .. NELBO: 5347.42
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.059329539211297806, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****

```

```

Epoch---->1 .. LR: 0.005 .. KL_theta: 76.7 .. Rec_loss: 12263.69 .. NELB0:
12340.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.95 .. Rec_loss: 5443.44 .. NELB0: 5450.39
*****
*****
Validation loss decreased (inf --> 10900.771484). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.6 .. Rec_loss: 12246.36 .. NELB0:
12253.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5430.3 .. NELB0: 5430.67
*****
*****
Validation loss decreased (10900.771484 --> 10861.343750). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12203.98 .. NELB0:
12204.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5406.14 .. NELB0: 5406.2
*****
*****
Validation loss decreased (10861.343750 --> 10812.399414). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12130.43 .. NELB0:
12130.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5372.71 .. NELB0: 5372.73
*****
*****
Validation loss decreased (10812.399414 --> 10745.463867). Saving model ...
*****
*****

```

```
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12031.78 .. NELBO:
12031.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.33 .. NELBO: 5336.35
*****
*****
Validation loss decreased (10745.463867 --> 10672.693359). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11923.93 .. NELBO:
11923.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.19 .. NELBO: 5308.21
*****
*****
Validation loss decreased (10672.693359 --> 10616.413086). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11833.04 .. NELBO:
11833.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.32 .. NELBO: 5300.34
*****
*****
Validation loss decreased (10616.413086 --> 10600.676758). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.62 .. NELBO:
11785.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.2 .. NELBO: 5315.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
```

```

Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.0 .. NELBO:
11782.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.56 .. NELBO: 5338.58
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.61 .. NELBO:
11794.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.47 .. NELBO: 5352.49
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.4 .. NELBO:
11795.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.83 .. NELBO: 5352.85
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.55 .. NELBO:
11782.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.29 .. NELBO: 5346.31
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(

```



```

(t_drop): Dropout(p=0.059329539211297806, inplace=False)
(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=84, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.24 .. Rec_loss: 12264.19 .. NELBO:
12350.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.07 .. Rec_loss: 5444.1 .. NELBO: 5452.17
*****
*****
Validation loss decreased (inf --> 10904.332031). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.68 .. Rec_loss: 12248.75 .. NELBO:
12257.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.16 .. NELBO: 5432.59
*****
*****
Validation loss decreased (10904.332031 --> 10865.166992). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12209.43 .. NELBO:
12210.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.15 .. NELBO: 5409.23
*****
*****

```

```

Validation loss decreased (10865.166992 --> 10818.452148). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12139.08 .. NELBO:
12139.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.25 .. NELBO: 5376.28
*****
*****
Validation loss decreased (10818.452148 --> 10752.564453). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12041.52 .. NELBO:
12041.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.56 .. NELBO: 5339.58
*****
*****
Validation loss decreased (10752.564453 --> 10679.163086). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11932.75 .. NELBO:
11932.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.1 .. NELBO: 5310.12
*****
*****
Validation loss decreased (10679.163086 --> 10620.235352). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11839.56 .. NELBO:
11839.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.26 .. NELBO: 5300.28
*****
*****

```

```

Validation loss decreased (10620.235352 --> 10600.555664). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.52 .. NELBO:
11788.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.71 .. NELBO: 5313.73
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.43 .. NELBO:
11781.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.25 .. NELBO: 5337.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.04 .. NELBO:
11794.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.24 .. NELBO: 5352.26
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.61 .. NELBO:
11796.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.41 .. NELBO: 5353.43
*****
*****

```

```

EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.08 .. NELBO:
11784.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.05 .. NELBO: 5347.07
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 87
model: ETM(
  (t_drop): Dropout(p=0.05678460513155667, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 81.7 .. Rec_loss: 12264.48 .. NELBO:
12346.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.8 .. Rec_loss: 5444.39 .. NELBO: 5452.19
*****
*****
Validation loss decreased (inf --> 10904.361328). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.41 .. Rec_loss: 12249.9 .. NELBO:
12258.31
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5433.09 .. NELBO: 5433.48
*****
*****
Validation loss decreased (10904.361328 --> 10866.941406). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 12212.74 .. NELBO:
12213.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.13 .. NELBO: 5411.2
*****
*****
Validation loss decreased (10866.941406 --> 10822.392578). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12145.08 .. NELBO:
12145.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.37 .. NELBO: 5379.4
*****
*****
Validation loss decreased (10822.392578 --> 10758.783203). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12051.35 .. NELBO:
12051.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.09 .. NELBO: 5343.11
*****
*****
Validation loss decreased (10758.783203 --> 10686.223633). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11943.85 .. NELBO:
11943.89
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.54 .. NELBO: 5312.56
*****
*****
Validation loss decreased (10686.223633 --> 10625.115234). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11848.17 .. NELBO:
11848.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.15 .. NELBO: 5300.17
*****
*****
Validation loss decreased (10625.115234 --> 10600.329102). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.25 .. NELBO:
11791.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.16 .. NELBO: 5311.18
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.62 .. NELBO:
11780.66
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.44 .. NELBO: 5334.46
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.38 .. NELBO:
11792.42
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.03 .. NELBO: 5351.05
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.15 .. NELBO:
11796.19
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.73 .. NELBO: 5353.75
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.95 .. NELBO:
11785.99
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.96 .. NELBO: 5347.98
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05678460513155667, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 84.66 .. Rec_loss: 12263.99 .. NELBO:
12348.65

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.35 .. Rec_loss: 5443.86 .. NELBO: 5451.21
*****
*****
Validation loss decreased (inf --> 10902.435547). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.08 .. Rec_loss: 12247.56 .. NELBO:
12255.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5431.42 .. NELBO: 5431.88
*****
*****
Validation loss decreased (10902.435547 --> 10863.745117). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12207.38 .. NELBO:
12208.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.19 .. NELBO: 5408.26
*****
*****
Validation loss decreased (10863.745117 --> 10816.513672). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12136.57 .. NELBO:
12136.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.4 .. NELBO: 5375.42
*****
*****
Validation loss decreased (10816.513672 --> 10750.847656). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12039.87 .. NELBO:
12039.91

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.05 .. NELBO: 5339.07
*****
*****
Validation loss decreased (10750.847656 --> 10678.127930). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11932.1 .. NELBO:
11932.14
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.92 .. NELBO: 5309.94
*****
*****
Validation loss decreased (10678.127930 --> 10619.872070). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.57 .. NELBO:
11839.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.16 .. NELBO: 5300.18
*****
*****
Validation loss decreased (10619.872070 --> 10600.354492). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.85 .. NELBO:
11787.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.36 .. NELBO: 5313.38
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.39 .. NELBO:
11781.43

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.68 .. NELBO: 5336.7
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.61 .. NELBO:
11793.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.71 .. NELBO: 5351.73
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.68 .. NELBO:
11795.72
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.1 .. NELBO: 5353.12
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.92 .. NELBO:
11783.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.93 .. NELBO: 5346.95
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05678460513155667, inplace=False)
  (theta_act): Sigmoid()

```

```

(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=83, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 83.62 .. Rec_loss: 12264.79 .. NELBO:
12348.41
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.0 .. Rec_loss: 5444.93 .. NELBO: 5452.93
*****
*****
Validation loss decreased (inf --> 10905.864258). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.73 .. Rec_loss: 12251.53 .. NELBO:
12260.26
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5434.06 .. NELBO: 5434.49
*****
*****
Validation loss decreased (10905.864258 --> 10868.980469). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12215.8 .. NELBO:
12216.4
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5412.96 .. NELBO: 5413.03
*****
*****
Validation loss decreased (10868.980469 --> 10826.054688). Saving model ...
*****

```

```

*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12150.98 .. NELBO:
12151.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5382.02 .. NELBO: 5382.04
*****
*****
Validation loss decreased (10826.054688 --> 10764.089844). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12058.55 .. NELBO:
12058.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.04 .. NELBO: 5346.06
*****
*****
Validation loss decreased (10764.089844 --> 10692.122070). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11952.52 .. NELBO:
11952.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.78 .. NELBO: 5314.8
*****
*****
Validation loss decreased (10692.122070 --> 10629.590820). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11855.57 .. NELBO:
11855.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.53 .. NELBO: 5300.55
*****
*****
Validation loss decreased (10629.590820 --> 10601.088867). Saving model ...
*****

```

```

*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.87 .. NELBO:
11794.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.46 .. NELBO: 5309.48
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.0 .. NELBO:
11780.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5332.04 .. NELBO: 5332.06
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.31 .. NELBO:
11791.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5349.52 .. NELBO: 5349.54
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.05 .. NELBO:
11796.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.36 .. NELBO: 5353.38
*****
*****
EarlyStopping counter: 4 out of 5
*****

```

```

*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.29 .. NELBO:
11786.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.19 .. NELBO: 5348.21
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 88
model: ETM(
  (t_drop): Dropout(p=0.013413104246330212, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 12263.43 .. NELBO:
12263.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 5442.52 .. NELBO: 5443.15
*****
*****
Validation loss decreased (inf --> 10886.281250). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.51 .. Rec_loss: 12241.29 .. NELBO:
12242.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5426.02 .. NELBO: 5426.06

```

```

*****
*****
Validation loss decreased (10886.281250 --> 10852.133789). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12189.28 .. NELBO:
12189.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5398.28 .. NELBO: 5398.42
*****
*****
Validation loss decreased (10852.133789 --> 10796.848633). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 12105.85 .. NELBO:
12106.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5362.35 .. NELBO: 5362.66
*****
*****
Validation loss decreased (10796.848633 --> 10725.320312). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.95 .. Rec_loss: 12000.05 .. NELBO:
12001.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.32 .. Rec_loss: 5326.63 .. NELBO: 5327.95
*****
*****
Validation loss decreased (10725.320312 --> 10655.900391). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.9 .. Rec_loss: 11894.71 .. NELBO:
11896.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5304.0 .. NELBO: 5304.25

```

```

*****
*****
Validation loss decreased (10655.900391 --> 10608.492188). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 11816.5 .. NELBO:
11817.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5302.83 .. NELBO: 5302.91
*****
*****
Validation loss decreased (10608.492188 --> 10605.813477). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 11782.76 .. NELBO:
11782.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 5320.44 .. NELBO: 5321.16
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.2 .. Rec_loss: 11784.82 .. NELBO:
11786.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5341.6 .. NELBO: 5341.85
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.92 .. Rec_loss: 11793.47 .. NELBO:
11794.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.44 .. Rec_loss: 5347.71 .. NELBO: 5350.15

```



```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.57 .. Rec_loss: 11784.1 .. NELBO:
11788.67
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.59 .. Rec_loss: 5345.83 .. NELBO: 5347.42
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.6 .. Rec_loss: 11770.78 .. NELBO:
11774.38
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.53 .. Rec_loss: 5337.09 .. NELBO: 5340.62
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.013413104246330212, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 12263.52 .. NELBO:
12263.89
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5442.54 .. NELBO: 5442.89
*****
*****
Validation loss decreased (inf --> 10885.769531). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 2.21 .. Rec_loss: 12241.24 .. NELBO:
12243.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5425.6 .. NELBO: 5425.64
*****
*****
Validation loss decreased (10885.769531 --> 10851.285156). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12187.96 .. NELBO:
12188.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5397.05 .. NELBO: 5397.11
*****
*****
Validation loss decreased (10851.285156 --> 10794.206055). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12101.77 .. NELBO:
12102.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 5360.0 .. NELBO: 5360.65
*****
*****
Validation loss decreased (10794.206055 --> 10721.306641). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.74 .. Rec_loss: 11992.64 .. NELBO:
11995.38
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.65 .. Rec_loss: 5324.26 .. NELBO: 5325.91
*****
*****
Validation loss decreased (10721.306641 --> 10651.832031). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.2 .. Rec_loss: 11887.51 .. NELBO:
11889.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5302.86 .. NELBO: 5303.31
*****
*****
Validation loss decreased (10651.832031 --> 10606.617188). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.89 .. Rec_loss: 11812.28 .. NELBO:
11813.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5303.59 .. NELBO: 5303.75
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 11781.58 .. NELBO:
11782.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5322.51 .. NELBO: 5323.01
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.95 .. Rec_loss: 11786.06 .. NELBO:
11787.01
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5342.63 .. NELBO: 5343.01
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.07 .. Rec_loss: 11793.08 .. NELBO:
11794.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.1 .. Rec_loss: 5348.05 .. NELBO: 5350.15
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 5.31 .. Rec_loss: 11782.32 .. NELBO:
11787.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.6 .. Rec_loss: 5343.8 .. NELBO: 5346.4
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.013413104246330212, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 12263.4 .. NELBO:

```

```

12263.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5442.37 .. NELBO: 5442.81
*****
*****
Validation loss decreased (inf --> 10885.607422). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 12240.89 .. NELBO:
12242.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5425.53 .. NELBO: 5425.56
*****
*****
Validation loss decreased (10885.607422 --> 10851.119141). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12187.57 .. NELBO:
12187.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5397.29 .. NELBO: 5397.4
*****
*****
Validation loss decreased (10851.119141 --> 10794.784180). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 12102.67 .. NELBO:
12102.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5360.9 .. NELBO: 5361.41
*****
*****
Validation loss decreased (10794.784180 --> 10722.824219). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.87 .. Rec_loss: 11995.16 .. NELBO:

```

```
11997.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 5325.42 .. NELBO: 5326.69
*****
*****
Validation loss decreased (10722.824219 --> 10653.395508). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 11890.69 .. NELBO:
11892.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5303.45 .. NELBO: 5303.73
*****
*****
Validation loss decreased (10653.395508 --> 10607.445312). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 11814.25 .. NELBO:
11814.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5303.19 .. NELBO: 5303.24
*****
*****
Validation loss decreased (10607.445312 --> 10606.473633). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 11781.6 .. NELBO:
11781.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5321.9 .. NELBO: 5322.1
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 11785.45 .. NELBO:
```

```
11785.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 5341.76 .. NELBO: 5342.44
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.67 .. Rec_loss: 11793.09 .. NELBO:
11794.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.3 .. Rec_loss: 5348.97 .. NELBO: 5350.27
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.04 .. Rec_loss: 11784.04 .. NELBO:
11788.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.5 .. Rec_loss: 5341.75 .. NELBO: 5346.25
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 7.09 .. Rec_loss: 11764.53 .. NELBO:
11771.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.86 .. Rec_loss: 5338.45 .. NELBO: 5341.31
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 89
model: ETM(
```

```

(t_drop): Dropout(p=0.01009689777863363, inplace=False)
(theta_act): Softplus(beta=1, threshold=20)
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=84, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1199.7 .. Rec_loss: 12264.49 .. NELBO:
13464.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 32.34 .. Rec_loss: 5445.45 .. NELBO:
5477.79
*****
*****
Validation loss decreased (inf --> 10955.575195). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 44.86 .. Rec_loss: 12254.34 .. NELBO:
12299.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.49 .. Rec_loss: 5437.38 .. NELBO:
5453.87
*****
*****
Validation loss decreased (10955.575195 --> 10907.732422). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 33.69 .. Rec_loss: 12227.43 .. NELBO:
12261.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 14.56 .. Rec_loss: 5421.07 .. NELBO:

```



```

5435.63
*****
*****
Validation loss decreased (10907.732422 --> 10871.258789). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 25.85 .. Rec_loss: 12176.32 .. NELBO:
12202.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.79 .. Rec_loss: 5395.54 .. NELBO: 5403.33
*****
*****
Validation loss decreased (10871.258789 --> 10806.657227). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 13.12 .. Rec_loss: 12099.23 .. NELBO:
12112.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.5 .. Rec_loss: 5362.99 .. NELBO: 5366.49
*****
*****
Validation loss decreased (10806.657227 --> 10732.983398). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 5.91 .. Rec_loss: 12001.92 .. NELBO:
12007.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.62 .. Rec_loss: 5329.52 .. NELBO: 5331.14
*****
*****
Validation loss decreased (10732.983398 --> 10662.283203). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 2.76 .. Rec_loss: 11901.07 .. NELBO:
11903.83
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 5305.57 .. NELBO: 5306.32
*****
*****
Validation loss decreased (10662.283203 --> 10612.642578). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 11819.61 .. NELBO:
11820.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5301.54 .. NELBO: 5301.85
*****
*****
Validation loss decreased (10612.642578 --> 10603.703125). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 11780.66 .. NELBO:
11781.17
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5317.91 .. NELBO: 5318.02
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 11781.53 .. NELBO:
11781.71
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5340.18 .. NELBO: 5340.22
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11793.33 .. NELBO:
11793.4
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.48 .. NELBO: 5352.5
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.47 .. NELBO:
11793.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.15 .. NELBO: 5352.17
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.37 .. NELBO:
11781.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.57 .. NELBO: 5345.59
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.01009689777863363, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1507.5 .. Rec_loss: 12264.37 .. NELBO:
13771.87
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 26.65 .. Rec_loss: 5445.4 .. NELBO: 5472.05
*****
*****
Validation loss decreased (inf --> 10944.094727). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 31.36 .. Rec_loss: 12253.63 .. NELBO:
12284.99
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.9 .. Rec_loss: 5436.59 .. NELBO: 5443.49
*****
*****
Validation loss decreased (10944.094727 --> 10886.982422). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 13.96 .. Rec_loss: 12224.41 .. NELBO:
12238.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.44 .. Rec_loss: 5419.12 .. NELBO: 5424.56
*****
*****
Validation loss decreased (10886.982422 --> 10849.113281). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 9.43 .. Rec_loss: 12169.51 .. NELBO:
12178.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.86 .. Rec_loss: 5391.75 .. NELBO: 5394.61
*****
*****
Validation loss decreased (10849.113281 --> 10789.215820). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 5.03 .. Rec_loss: 12085.94 .. NELBO:
12090.97
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.7 .. Rec_loss: 5357.47 .. NELBO: 5359.17
*****
*****
Validation loss decreased (10789.215820 --> 10718.354492). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.13 .. Rec_loss: 11983.62 .. NELBO:
11986.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.23 .. Rec_loss: 5323.88 .. NELBO: 5325.11
*****
*****
Validation loss decreased (10718.354492 --> 10650.229492). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 2.38 .. Rec_loss: 11881.15 .. NELBO:
11883.53
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 5302.79 .. NELBO: 5303.84
*****
*****
Validation loss decreased (10650.229492 --> 10607.670898). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.95 .. Rec_loss: 11805.48 .. NELBO:
11807.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 5304.12 .. NELBO: 5304.82
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 11777.1 .. NELBO:
11778.37
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5324.45 .. NELBO: 5324.94
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.92 .. Rec_loss: 11784.39 .. NELBO:
11785.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5346.19 .. NELBO: 5346.54
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 11796.24 .. NELBO:
11796.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5355.17 .. NELBO: 5355.39
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11791.52 .. NELBO:
11791.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5352.13 .. NELBO: 5352.26
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.01009689777863363, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)

```

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(alphas): Linear(in_features=300, out_features=84, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1789.71 .. Rec_loss: 12264.83 .. NELBO:
14054.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 32.1 .. Rec_loss: 5445.77 .. NELBO: 5477.87
*****
*****
Validation loss decreased (inf --> 10955.730469). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 42.81 .. Rec_loss: 12255.32 .. NELBO:
12298.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.06 .. Rec_loss: 5438.08 .. NELBO:
5456.14
*****
*****
Validation loss decreased (10955.730469 --> 10912.274414). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 37.99 .. Rec_loss: 12229.26 .. NELBO:
12267.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.87 .. Rec_loss: 5422.16 .. NELBO:
5439.03
*****
*****
Validation loss decreased (10912.274414 --> 10878.046875). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 30.55 .. Rec_loss: 12178.97 .. NELBO:
12209.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.95 .. Rec_loss: 5397.25 .. NELBO: 5408.2
*****
*****
Validation loss decreased (10878.046875 --> 10816.403320). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 20.18 .. Rec_loss: 12102.73 .. NELBO:
12122.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.75 .. Rec_loss: 5364.85 .. NELBO: 5372.6
*****
*****
Validation loss decreased (10816.403320 --> 10745.217773). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 14.74 .. Rec_loss: 12005.08 .. NELBO:
12019.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.22 .. Rec_loss: 5330.86 .. NELBO: 5337.08
*****
*****
Validation loss decreased (10745.217773 --> 10674.153320). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 12.01 .. Rec_loss: 11901.69 .. NELBO:
11913.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.25 .. Rec_loss: 5306.38 .. NELBO: 5311.63
*****
*****
Validation loss decreased (10674.153320 --> 10623.275391). Saving model ...

```



```

*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 10.14 .. Rec_loss: 11819.12 .. NELBO:
11829.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.33 .. Rec_loss: 5302.46 .. NELBO: 5306.79
*****
*****
Validation loss decreased (10623.275391 --> 10613.587891). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 8.31 .. Rec_loss: 11780.34 .. NELBO:
11788.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.36 .. Rec_loss: 5319.3 .. NELBO: 5322.66
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 6.28 .. Rec_loss: 11782.08 .. NELBO:
11788.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.41 .. Rec_loss: 5341.2 .. NELBO: 5343.61
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 4.56 .. Rec_loss: 11793.76 .. NELBO:
11798.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.83 .. Rec_loss: 5352.06 .. NELBO: 5353.89
*****
*****
EarlyStopping counter: 3 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.62 .. Rec_loss: 11792.15 .. NELBO:
11795.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.7 .. Rec_loss: 5350.15 .. NELBO: 5351.85
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 3.56 .. Rec_loss: 11778.23 .. NELBO:
11781.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 5342.63 .. NELBO: 5344.48
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 90
model: ETM(
  (t_drop): Dropout(p=0.05238076011214266, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=53, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=53, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=53, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 67.93 .. Rec_loss: 12263.86 .. NELBO:
12331.79
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 6.85 .. Rec_loss: 5443.57 .. NELBO: 5450.42
*****
*****
Validation loss decreased (inf --> 10900.829102). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 7.46 .. Rec_loss: 12247.52 .. NELBO:
12254.98
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5432.1 .. NELBO: 5432.48
*****
*****
Validation loss decreased (10900.829102 --> 10864.974609). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 12209.83 .. NELBO:
12210.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.34 .. NELBO: 5410.41
*****
*****
Validation loss decreased (10864.974609 --> 10820.816406). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12142.63 .. NELBO:
12142.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.17 .. NELBO: 5379.19
*****
*****
Validation loss decreased (10820.816406 --> 10758.391602). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12048.56 .. NELBO:
12048.6
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.58 .. NELBO: 5343.6
*****
*****
Validation loss decreased (10758.391602 --> 10687.187500). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11944.4 .. NELBO:
11944.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.26 .. NELBO: 5313.27
*****
*****
Validation loss decreased (10687.187500 --> 10626.555664). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11848.98 .. NELBO:
11849.01
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.33 .. NELBO: 5300.35
*****
*****
Validation loss decreased (10626.555664 --> 10600.698242). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.76 .. NELBO:
11790.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.52 .. NELBO: 5310.54
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11778.89 .. NELBO:
11778.94
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5333.58 .. NELBO: 5333.61
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11790.78 .. NELBO:
11790.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.78 .. NELBO: 5350.8
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.97 .. NELBO:
11796.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.19 .. NELBO: 5354.21
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.34 .. NELBO:
11786.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.68 .. NELBO: 5348.69
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05238076011214266, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=53, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)

```

```

    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=53, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=53, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 70.21 .. Rec_loss: 12263.77 .. NELBO:
12333.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.24 .. Rec_loss: 5443.65 .. NELBO: 5450.89
*****
*****
Validation loss decreased (inf --> 10901.779297). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.85 .. Rec_loss: 12247.86 .. NELBO:
12255.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5432.29 .. NELBO: 5432.68
*****
*****
Validation loss decreased (10901.779297 --> 10865.360352). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12210.86 .. NELBO:
12211.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.58 .. NELBO: 5410.65
*****
*****
Validation loss decreased (10865.360352 --> 10821.300781). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12143.71 .. NELBO:
12143.82
*****

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```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.17 .. NELBO: 5379.2
*****
*****
Validation loss decreased (10821.300781 --> 10758.391602). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12050.03 .. NELBO:
12050.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.25 .. NELBO: 5343.27
*****
*****
Validation loss decreased (10758.391602 --> 10686.537109). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11944.7 .. NELBO:
11944.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.77 .. NELBO: 5312.79
*****
*****
Validation loss decreased (10686.537109 --> 10625.573242). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11848.48 .. NELBO:
11848.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.03 .. NELBO: 5300.05
*****
*****
Validation loss decreased (10625.573242 --> 10600.103516). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11791.01 .. NELBO:
11791.06
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5310.69 .. NELBO: 5310.72
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11780.24 .. NELBO:
11780.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5334.03 .. NELBO: 5334.07
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11792.19 .. NELBO:
11792.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5350.99 .. NELBO: 5351.03
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11796.68 .. NELBO:
11796.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.97 .. NELBO: 5354.0
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11785.44 .. NELBO:
11785.5
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5348.31 .. NELBO: 5348.34
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05238076011214266, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=53, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=53, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=53, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 68.89 .. Rec_loss: 12263.64 .. NELBO:
12332.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.32 .. Rec_loss: 5443.09 .. NELBO: 5450.41
*****
*****
Validation loss decreased (inf --> 10900.816406). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.84 .. Rec_loss: 12245.37 .. NELBO:
12253.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5429.84 .. NELBO: 5430.17
*****
*****
Validation loss decreased (10900.816406 --> 10860.332031). Saving model ...
*****
*****

```

```

Epoch----->3 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 12202.85 .. NELBO:
12203.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5405.73 .. NELBO: 5405.8
*****
*****
Validation loss decreased (10860.332031 --> 10811.605469). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12129.29 .. NELBO:
12129.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5372.43 .. NELBO: 5372.46
*****
*****
Validation loss decreased (10811.605469 --> 10744.909180). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12030.97 .. NELBO:
12031.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.25 .. NELBO: 5336.27
*****
*****
Validation loss decreased (10744.909180 --> 10672.527344). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11923.47 .. NELBO:
11923.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.18 .. NELBO: 5308.2
*****
*****
Validation loss decreased (10672.527344 --> 10616.384766). Saving model ...
*****
*****

```

```

Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11834.17 .. NELBO:
11834.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.12 .. NELBO: 5300.14
*****
*****
Validation loss decreased (10616.384766 --> 10600.272461). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.63 .. NELBO:
11785.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.76 .. NELBO: 5314.78
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.85 .. NELBO:
11781.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.25 .. NELBO: 5338.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.44 .. NELBO:
11793.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.51 .. NELBO: 5352.53
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****

```

```

Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.22 .. NELBO:
11795.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.14 .. NELBO: 5353.16
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.78 .. NELBO:
11782.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.68 .. NELBO: 5346.7
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 91
model: ETM(
  (t_drop): Dropout(p=0.046152336614858784, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 2.75 .. Rec_loss: 12265.38 .. NELBO:
12268.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.24 .. NELBO: 5448.29
*****

```

```

*****
Validation loss decreased (inf --> 10896.581055). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 12265.35 .. NELBO:
12265.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.24 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.581055 --> 10896.487305). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.33 .. NELBO:
12265.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.23 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.487305 --> 10896.471680). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.27 .. NELBO:
12265.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.23 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.471680 --> 10896.467773). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.28 .. NELBO:
12265.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.22 .. NELBO: 5448.22
*****

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```

*****
Validation loss decreased (10896.467773 --> 10896.457031). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.29 .. NELBO:
12265.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.22 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.457031 --> 10896.446289). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.28 .. NELBO:
12265.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.22 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.446289 --> 10896.441406). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.25 .. NELBO:
12265.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.21 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.441406 --> 10896.433594). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.25 .. NELBO:
12265.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.21 .. NELBO: 5448.21
*****

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```

*****
Validation loss decreased (10896.433594 --> 10896.421875). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.21 .. NELBO:
12265.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.2 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.421875 --> 10896.416016). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.23 .. NELBO:
12265.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.2 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.416016 --> 10896.406250). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.19 .. NELBO:
12265.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.19 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.406250 --> 10896.395508). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.19 .. NELBO:
12265.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.19 .. NELBO: 5448.19
*****
*****

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```

*****
Validation loss decreased (10896.395508 --> 10896.391602). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 12265.17 .. NELBO:
12265.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.19 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.391602 --> 10896.379883). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.15 .. NELBO:
12265.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.18 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.379883 --> 10896.371094). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.15 .. NELBO:
12265.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.18 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.371094 --> 10896.360352). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.14 .. NELBO:
12265.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.17 .. NELBO: 5448.17
*****

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```

*****
Validation loss decreased (10896.360352 --> 10896.353516). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.14 .. NELBO:
12265.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.17 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.353516 --> 10896.343750). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.1 .. NELBO:
12265.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.16 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.343750 --> 10896.334961). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.11 .. NELBO:
12265.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.16 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.334961 --> 10896.325195). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.06 .. NELBO:
12265.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.15 .. NELBO: 5448.15
*****

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```

*****
Validation loss decreased (10896.325195 --> 10896.313477). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.07 .. NELBO:
12265.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.15 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.313477 --> 10896.305664). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.04 .. NELBO:
12265.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.14 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.305664 --> 10896.295898). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 12265.07 .. NELBO:
12265.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.14 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.295898 --> 10896.288086). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.04 .. NELBO:
12265.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.13 .. NELBO: 5448.14
*****

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```

*****
Validation loss decreased (10896.288086 --> 10896.278320). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.04 .. NELBO:
12265.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.13 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.278320 --> 10896.263672). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 12264.98 .. NELBO:
12265.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.12 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.263672 --> 10896.254883). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12264.99 .. NELBO:
12265.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.12 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.254883 --> 10896.246094). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 12264.96 .. NELBO:
12265.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.11 .. NELBO: 5448.11
*****

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```

*****
Validation loss decreased (10896.246094 --> 10896.234375). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12264.97 .. NELBO:
12265.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.11 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.234375 --> 10896.225586). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.046152336614858784, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 2.47 .. Rec_loss: 12265.35 .. NELBO:
12267.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5448.24 .. NELBO: 5448.28
*****
*****
Validation loss decreased (inf --> 10896.573242). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 12265.37 .. NELBO:
12265.65
*****
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.24 .. NELBO: 5448.25
*****
*****
Validation loss decreased (10896.573242 --> 10896.493164). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.35 .. NELBO:
12265.58
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.23 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.493164 --> 10896.477539). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.3 .. NELBO:
12265.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.23 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.477539 --> 10896.468750). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.31 .. NELBO:
12265.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.23 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.468750 --> 10896.460938). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.29 .. NELBO:
12265.51
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.22 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.460938 --> 10896.456055). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.28 .. NELBO:
12265.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.22 .. NELBO: 5448.22
*****
*****
*****
Validation loss decreased (10896.456055 --> 10896.447266). Saving model ...
*****
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.29 .. NELBO:
12265.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.21 .. NELBO: 5448.21
*****
*****
*****
Validation loss decreased (10896.447266 --> 10896.437500). Saving model ...
*****
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.27 .. NELBO:
12265.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.21 .. NELBO: 5448.21
*****
*****
*****
Validation loss decreased (10896.437500 --> 10896.428711). Saving model ...
*****
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 12265.25 .. NELBO:
12265.46
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.21 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.428711 --> 10896.419922). Saving model ...
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.22 .. NELBO:
12265.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.2 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.419922 --> 10896.412109). Saving model ...
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.22 .. NELBO:
12265.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.2 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.412109 --> 10896.406250). Saving model ...
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.22 .. NELBO:
12265.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.19 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.406250 --> 10896.398438). Saving model ...
*****
*****
Epoch----->14 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.18 .. NELBO:
12265.4
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.19 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.398438 --> 10896.387695). Saving model ...
*****
*****
Epoch----->15 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.21 .. NELBO:
12265.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.19 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.387695 --> 10896.380859). Saving model ...
*****
*****
Epoch----->16 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.18 .. NELBO:
12265.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.18 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.380859 --> 10896.373047). Saving model ...
*****
*****
Epoch----->17 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.15 .. NELBO:
12265.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.18 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.373047 --> 10896.362305). Saving model ...
*****
*****
Epoch----->18 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.19 .. NELBO:
12265.42
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.17 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.362305 --> 10896.353516). Saving model ...
*****
*****
Epoch----->19 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.16 .. NELBO:
12265.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.17 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.353516 --> 10896.343750). Saving model ...
*****
*****
Epoch----->20 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.12 .. NELBO:
12265.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.16 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.343750 --> 10896.333008). Saving model ...
*****
*****
Epoch----->21 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.1 .. NELBO:
12265.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.16 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.333008 --> 10896.326172). Saving model ...
*****
*****
Epoch----->22 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.12 .. NELBO:
12265.34
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.15 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.326172 --> 10896.314453). Saving model ...
*****
*****
Epoch----->23 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.12 .. NELBO:
12265.34
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.15 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.314453 --> 10896.307617). Saving model ...
*****
*****
Epoch----->24 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.06 .. NELBO:
12265.28
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.15 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.307617 --> 10896.298828). Saving model ...
*****
*****
Epoch----->25 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.06 .. NELBO:
12265.28
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.14 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.298828 --> 10896.290039). Saving model ...
*****
*****
Epoch----->26 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.06 .. NELBO:
12265.28
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.290039 --> 10896.280273). Saving model ...
*****
*****
Epoch----->27 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.05 .. NELBO:
12265.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.13 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.280273 --> 10896.267578). Saving model ...
*****
*****
Epoch----->28 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.0 .. NELBO:
12265.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.13 .. NELBO: 5448.13
*****
*****
Validation loss decreased (10896.267578 --> 10896.259766). Saving model ...
*****
*****
Epoch----->29 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12264.99 .. NELBO:
12265.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.12 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.259766 --> 10896.249023). Saving model ...
*****
*****
Epoch----->30 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12264.99 .. NELBO:
12265.21
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.12 .. NELBO: 5448.12
*****
*****
Validation loss decreased (10896.249023 --> 10896.238281). Saving model ...
model: ETM(
  (t_drop): Dropout(p=0.046152336614858784, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 2.54 .. Rec_loss: 12265.38 .. NELBO:
12267.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5448.25 .. NELBO: 5448.3
*****
*****
Validation loss decreased (inf --> 10896.598633). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 12265.4 .. NELBO:
12265.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.25 .. NELBO: 5448.26
*****
*****
Validation loss decreased (10896.598633 --> 10896.505859). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.36 .. NELBO:
12265.59
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.24 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.505859 --> 10896.494141). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.35 .. NELBO:
12265.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.24 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.494141 --> 10896.486328). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.33 .. NELBO:
12265.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.24 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.486328 --> 10896.481445). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.33 .. NELBO:
12265.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.23 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.481445 --> 10896.474609). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.32 .. NELBO:
12265.54
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.23 .. NELBO: 5448.24
*****
*****
Validation loss decreased (10896.474609 --> 10896.466797). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.3 .. NELBO:
12265.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.23 .. NELBO: 5448.23
*****
*****
Validation loss decreased (10896.466797 --> 10896.458984). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.29 .. NELBO:
12265.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.22 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.458984 --> 10896.451172). Saving model ...
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.29 .. NELBO:
12265.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.22 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.451172 --> 10896.441406). Saving model ...
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.3 .. NELBO:
12265.53
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.21 .. NELBO: 5448.22
*****
*****
Validation loss decreased (10896.441406 --> 10896.438477). Saving model ...
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.3 .. NELBO:
12265.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.21 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.438477 --> 10896.428711). Saving model ...
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 12265.25 .. NELBO:
12265.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.21 .. NELBO: 5448.21
*****
*****
Validation loss decreased (10896.428711 --> 10896.418945). Saving model ...
*****
*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.24 .. NELBO:
12265.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.2 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.418945 --> 10896.412109). Saving model ...
*****
*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.23 .. NELBO:
12265.45
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.2 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.412109 --> 10896.405273). Saving model ...
*****
*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.23 .. NELBO:
12265.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.2 .. NELBO: 5448.2
*****
*****
Validation loss decreased (10896.405273 --> 10896.397461). Saving model ...
*****
*****
Epoch---->17 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.2 .. NELBO:
12265.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.19 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.397461 --> 10896.390625). Saving model ...
*****
*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.18 .. NELBO:
12265.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.19 .. NELBO: 5448.19
*****
*****
Validation loss decreased (10896.390625 --> 10896.383789). Saving model ...
*****
*****
Epoch---->19 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.18 .. NELBO:
12265.41
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.18 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.383789 --> 10896.375977). Saving model ...
*****
*****
Epoch---->20 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.18 .. NELBO:
12265.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.18 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.375977 --> 10896.368164). Saving model ...
*****
*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.16 .. NELBO:
12265.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.18 .. NELBO: 5448.18
*****
*****
Validation loss decreased (10896.368164 --> 10896.359375). Saving model ...
*****
*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.16 .. NELBO:
12265.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.17 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.359375 --> 10896.350586). Saving model ...
*****
*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.13 .. NELBO:
12265.36
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.17 .. NELBO: 5448.17
*****
*****
Validation loss decreased (10896.350586 --> 10896.343750). Saving model ...
*****
*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.11 .. NELBO:
12265.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.16 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.343750 --> 10896.333984). Saving model ...
*****
*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.12 .. NELBO:
12265.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.16 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.333984 --> 10896.324219). Saving model ...
*****
*****
Epoch---->26 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.1 .. NELBO:
12265.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.15 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.324219 --> 10896.316406). Saving model ...
*****
*****
Epoch---->27 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.1 .. NELBO:
12265.32
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.15 .. NELBO: 5448.16
*****
*****
Validation loss decreased (10896.316406 --> 10896.312500). Saving model ...
*****
*****
Epoch---->28 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.08 .. NELBO:
12265.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.15 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.312500 --> 10896.297852). Saving model ...
*****
*****
Epoch---->29 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12265.08 .. NELBO:
12265.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5448.14 .. NELBO: 5448.15
*****
*****
Validation loss decreased (10896.297852 --> 10896.292969). Saving model ...
*****
*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12265.06 .. NELBO:
12265.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 5448.14 .. NELBO: 5448.14
*****
*****
Validation loss decreased (10896.292969 --> 10896.283203). Saving model ...
Current call: 92
model: ETM(
  (t_drop): Dropout(p=0.05344695097361188, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)

```

```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 97.53 .. Rec_loss: 12264.46 .. NELB0:
12361.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.78 .. Rec_loss: 5444.7 .. NELB0: 5453.48
*****
*****
Validation loss decreased (inf --> 10906.950195). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.41 .. Rec_loss: 12250.44 .. NELB0:
12259.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5433.73 .. NELB0: 5434.22
*****
*****
Validation loss decreased (10906.950195 --> 10868.449219). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 12214.08 .. NELB0:
12214.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5412.15 .. NELB0: 5412.23
*****
*****
Validation loss decreased (10868.449219 --> 10824.456055). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12147.44 .. NELB0:

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```
12147.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.61 .. NELBO: 5380.64
*****
*****
Validation loss decreased (10824.456055 --> 10761.284180). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12053.37 .. NELBO:
12053.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.39 .. NELBO: 5344.41
*****
*****
Validation loss decreased (10761.284180 --> 10688.815430). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11945.71 .. NELBO:
11945.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.58 .. NELBO: 5313.6
*****
*****
Validation loss decreased (10688.815430 --> 10627.203125). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11849.47 .. NELBO:
11849.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.63 .. NELBO: 5300.65
*****
*****
Validation loss decreased (10627.203125 --> 10601.303711). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.27 .. NELBO:
```

```
11791.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.13 .. NELBO: 5311.15
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.71 .. NELBO:
11779.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.31 .. NELBO: 5334.33
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.2 .. NELBO:
11792.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.13 .. NELBO: 5351.15
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.86 .. NELBO:
11796.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.91 .. NELBO: 5353.93
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.19 .. NELBO:
```

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11786.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.09 .. NELBO: 5348.11
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05344695097361188, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 89.77 .. Rec_loss: 12264.89 .. NELBO:
12354.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.01 .. Rec_loss: 5444.63 .. NELBO: 5452.64
*****
*****
Validation loss decreased (inf --> 10905.269531). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.71 .. Rec_loss: 12250.48 .. NELBO:
12259.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5433.77 .. NELBO: 5434.25
*****
*****
Validation loss decreased (10905.269531 --> 10868.495117). Saving model ...

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```

*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12214.6 .. NELBO:
12215.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5412.82 .. NELBO: 5412.9
*****
*****
Validation loss decreased (10868.495117 --> 10825.793945). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12150.06 .. NELBO:
12150.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5382.0 .. NELBO: 5382.03
*****
*****
Validation loss decreased (10825.793945 --> 10764.063477). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12058.68 .. NELBO:
12058.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.11 .. NELBO: 5346.13
*****
*****
Validation loss decreased (10764.063477 --> 10692.255859). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11952.3 .. NELBO:
11952.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.78 .. NELBO: 5314.8
*****
*****
Validation loss decreased (10692.255859 --> 10629.595703). Saving model ...

```



```

*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11854.85 .. NELBO:
11854.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELBO: 5300.39
*****
*****
Validation loss decreased (10629.595703 --> 10600.773438). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.57 .. NELBO:
11793.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.3 .. NELBO: 5309.32
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.19 .. NELBO:
11779.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5332.22 .. NELBO: 5332.24
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.5 .. NELBO:
11790.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.11 .. NELBO: 5350.13
*****
*****
EarlyStopping counter: 3 out of 5

```

```

*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.44 .. NELBO:
11796.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.13 .. NELBO: 5354.15
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.84 .. NELBO:
11786.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.86 .. NELBO: 5348.88
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05344695097361188, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 91.47 .. Rec_loss: 12264.44 .. NELBO:
12355.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.08 .. Rec_loss: 5444.42 .. NELBO: 5452.5

```

```

*****
*****
Validation loss decreased (inf --> 10905.010742). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.71 .. Rec_loss: 12249.7 .. NELBO:
12258.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5432.99 .. NELBO: 5433.45
*****
*****
Validation loss decreased (10905.010742 --> 10866.887695). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12212.21 .. NELBO:
12212.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5411.09 .. NELBO: 5411.17
*****
*****
Validation loss decreased (10866.887695 --> 10822.342773). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12145.02 .. NELBO:
12145.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.45 .. NELBO: 5379.48
*****
*****
Validation loss decreased (10822.342773 --> 10758.962891). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12051.33 .. NELBO:
12051.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.34 .. NELBO: 5343.36

```

```

*****
*****
Validation loss decreased (10758.962891 --> 10686.715820). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11944.26 .. NELBO:
11944.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.86 .. NELBO: 5312.88
*****
*****
Validation loss decreased (10686.715820 --> 10625.755859). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11849.1 .. NELBO:
11849.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.28 .. NELBO: 5300.3
*****
*****
Validation loss decreased (10625.755859 --> 10600.590820). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.65 .. NELBO:
11791.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.9 .. NELBO: 5310.92
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.59 .. NELBO:
11780.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.9 .. NELBO: 5333.92

```

```

*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.36 .. NELBO:
11792.4
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.44 .. NELBO: 5350.46
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.18 .. NELBO:
11796.22
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.2 .. NELBO: 5353.22
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.73 .. NELBO:
11785.77
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.48 .. NELBO: 5347.5
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 93
model: ETM(
  (t_drop): Dropout(p=0.014719673576337014, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=71, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)

```

```

(1): Sigmoid()
(2): Linear(in_features=800, out_features=800, bias=True)
(3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=71, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=71, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 75.22 .. Rec_loss: 12264.12 .. NELBO:
12339.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.14 .. Rec_loss: 5444.18 .. NELBO: 5451.32
*****
*****
Validation loss decreased (inf --> 10902.637695). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.82 .. Rec_loss: 12249.17 .. NELBO:
12256.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.44 .. NELBO: 5432.89
*****
*****
Validation loss decreased (10902.637695 --> 10865.792969). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12210.46 .. NELBO:
12211.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.94 .. NELBO: 5410.01
*****
*****
Validation loss decreased (10865.792969 --> 10820.011719). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12141.23 .. NELBO:
12141.33
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.84 .. NELBO: 5377.86
*****
*****
Validation loss decreased (10820.011719 --> 10755.731445). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12045.39 .. NELBO:
12045.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.66 .. NELBO: 5341.68
*****
*****
Validation loss decreased (10755.731445 --> 10683.362305). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11938.49 .. NELBO:
11938.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.78 .. NELBO: 5311.8
*****
*****
Validation loss decreased (10683.362305 --> 10623.582031). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11844.81 .. NELBO:
11844.84
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.39 .. NELBO: 5300.41
*****
*****
Validation loss decreased (10623.582031 --> 10600.806641). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.98 .. NELBO:
11790.01
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.1 .. NELBO: 5312.12
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.91 .. NELBO:
11780.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.27 .. NELBO: 5335.29
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.98 .. NELBO:
11793.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.33 .. NELBO: 5351.35
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.29 .. NELBO:
11796.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.68 .. NELBO: 5353.7
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.39 .. NELBO:
11785.42
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.8 .. NELBO: 5347.82
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.014719673576337014, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=71, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=71, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=71, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 74.23 .. Rec_loss: 12264.14 .. NELBO:
12338.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.37 .. Rec_loss: 5443.71 .. NELBO: 5451.08
*****
*****
Validation loss decreased (inf --> 10902.171875). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.99 .. Rec_loss: 12247.49 .. NELBO:
12255.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5431.14 .. NELBO: 5431.55
*****
*****
Validation loss decreased (10902.171875 --> 10863.086914). Saving model ...
*****
*****

```

```

Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12206.28 .. NELBO:
12206.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.58 .. NELBO: 5407.64
*****
*****
Validation loss decreased (10863.086914 --> 10815.282227). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12134.59 .. NELBO:
12134.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.66 .. NELBO: 5374.68
*****
*****
Validation loss decreased (10815.282227 --> 10749.355469). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12037.08 .. NELBO:
12037.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.46 .. NELBO: 5338.48
*****
*****
Validation loss decreased (10749.355469 --> 10676.951172). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11930.21 .. NELBO:
11930.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.73 .. NELBO: 5309.74
*****
*****
Validation loss decreased (10676.951172 --> 10619.483398). Saving model ...
*****
*****

```

```

Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.63 .. NELBO:
11838.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.34 .. NELBO: 5300.35
*****
*****
Validation loss decreased (10619.483398 --> 10600.708984). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.84 .. NELBO:
11787.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.61 .. NELBO: 5313.62
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.21 .. NELBO:
11781.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.76 .. NELBO: 5336.77
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.56 .. NELBO:
11793.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.71 .. NELBO: 5351.72
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****

```

```

Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.65 .. NELBO:
11795.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.11 .. NELBO: 5353.12
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.81 .. NELBO:
11783.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.98 .. NELBO: 5346.99
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.014719673576337014, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=71, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=71, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=71, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 78.28 .. Rec_loss: 12264.41 .. NELBO:
12342.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.96 .. Rec_loss: 5444.24 .. NELBO: 5451.2
*****
*****

```

```

Validation loss decreased (inf --> 10902.388672). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.58 .. Rec_loss: 12249.12 .. NELBO:
12256.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5432.93 .. NELBO: 5433.37
*****
*****
Validation loss decreased (10902.388672 --> 10866.737305). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12212.66 .. NELBO:
12213.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5411.41 .. NELBO: 5411.49
*****
*****
Validation loss decreased (10866.737305 --> 10822.980469). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12146.05 .. NELBO:
12146.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.16 .. NELBO: 5380.19
*****
*****
Validation loss decreased (10822.980469 --> 10760.375977). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12052.96 .. NELBO:
12053.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.21 .. NELBO: 5344.23
*****
*****

```

```

Validation loss decreased (10760.375977 --> 10688.454102). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11947.03 .. NELBO:
11947.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.39 .. NELBO: 5313.41
*****
*****
Validation loss decreased (10688.454102 --> 10626.810547). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11850.15 .. NELBO:
11850.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.08 .. NELBO: 5300.1
*****
*****
Validation loss decreased (10626.810547 --> 10600.195312). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.52 .. NELBO:
11791.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.24 .. NELBO: 5310.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.15 .. NELBO:
11779.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.58 .. NELBO: 5333.6
*****
*****

```

```

EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.53 .. NELBO:
11791.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.89 .. NELBO: 5350.91
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.77 .. NELBO:
11796.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.15 .. NELBO: 5354.17
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.02 .. NELBO:
11786.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.55 .. NELBO: 5348.57
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 94
model: ETM(
  (t_drop): Dropout(p=0.055983368179274524, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=95, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)

```

```

    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=95, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=95, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 97.05 .. Rec_loss: 12264.2 .. NELBO:
12361.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.92 .. Rec_loss: 5443.88 .. NELBO: 5451.8
*****
*****
Validation loss decreased (inf --> 10903.608398). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.63 .. Rec_loss: 12247.62 .. NELBO:
12256.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5431.35 .. NELBO: 5431.85
*****
*****
Validation loss decreased (10903.608398 --> 10863.702148). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 12206.75 .. NELBO:
12207.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5407.57 .. NELBO: 5407.65
*****
*****
Validation loss decreased (10863.702148 --> 10815.302734). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12134.11 .. NELBO:
12134.23
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5374.28 .. NELBO: 5374.31
*****
*****
Validation loss decreased (10815.302734 --> 10748.605469). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12035.3 .. NELBO:
12035.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.86 .. NELBO: 5337.88
*****
*****
Validation loss decreased (10748.605469 --> 10675.764648). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11927.12 .. NELBO:
11927.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.42 .. NELBO: 5309.44
*****
*****
Validation loss decreased (10675.764648 --> 10618.871094). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11836.5 .. NELBO:
11836.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.87 .. NELBO: 5300.89
*****
*****
Validation loss decreased (10618.871094 --> 10601.770508). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.16 .. NELBO:
11787.2
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.88 .. NELBO: 5314.9
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.17 .. NELBO:
11782.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.87 .. NELBO: 5337.89
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.77 .. NELBO:
11793.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.03 .. NELBO: 5352.05
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.34 .. NELBO:
11795.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.73 .. NELBO: 5352.75
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.03 .. NELBO:
11783.07
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.29 .. NELBO: 5346.31
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.055983368179274524, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=95, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=95, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=95, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 94.67 .. Rec_loss: 12263.81 .. NELBO:
12358.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.2 .. Rec_loss: 5443.81 .. NELBO: 5452.01
*****
*****
Validation loss decreased (inf --> 10904.014648). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.83 .. Rec_loss: 12247.37 .. NELBO:
12256.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5431.36 .. NELBO: 5431.82
*****
*****
Validation loss decreased (10904.014648 --> 10863.633789). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12206.58 .. NELBO:
12207.23

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.25 .. NELBO: 5408.33
*****
*****
Validation loss decreased (10863.633789 --> 10816.645508). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12135.92 .. NELBO:
12136.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.62 .. NELBO: 5375.65
*****
*****
Validation loss decreased (10816.645508 --> 10751.300781). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12038.1 .. NELBO:
12038.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.44 .. NELBO: 5339.46
*****
*****
Validation loss decreased (10751.300781 --> 10678.928711). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11931.18 .. NELBO:
11931.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.43 .. NELBO: 5310.45
*****
*****
Validation loss decreased (10678.928711 --> 10620.907227). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11838.99 .. NELBO:
11839.03

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.7 .. NELBO: 5300.72
*****
*****
Validation loss decreased (10620.907227 --> 10601.438477). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.32 .. NELBO:
11787.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.89 .. NELBO: 5313.91
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.49 .. NELBO:
11780.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.2 .. NELBO: 5337.22
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.28 .. NELBO:
11793.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.22 .. NELBO: 5352.24
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.02 .. NELBO:
11796.06

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.44 .. NELBO: 5353.46
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.19 .. NELBO:
11784.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.06 .. NELBO: 5347.08
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.055983368179274524, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=95, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=95, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=95, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 89.59 .. Rec_loss: 12264.46 .. NELBO:
12354.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.09 .. Rec_loss: 5444.52 .. NELBO: 5452.61
*****
*****
Validation loss decreased (inf --> 10905.209961). Saving model ...
*****

```

```

*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.73 .. Rec_loss: 12250.17 .. NELBO:
12258.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5433.42 .. NELBO: 5433.83
*****
*****
Validation loss decreased (10905.209961 --> 10867.659180). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12213.42 .. NELBO:
12214.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.77 .. NELBO: 5411.84
*****
*****
Validation loss decreased (10867.659180 --> 10823.693359). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12146.91 .. NELBO:
12147.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.34 .. NELBO: 5380.37
*****
*****
Validation loss decreased (10823.693359 --> 10760.729492). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12053.54 .. NELBO:
12053.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.21 .. NELBO: 5344.23
*****
*****
Validation loss decreased (10760.729492 --> 10688.463867). Saving model ...
*****

```

```

*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11946.26 .. NELBO:
11946.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.44 .. NELBO: 5313.46
*****
*****
Validation loss decreased (10688.463867 --> 10626.921875). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11850.52 .. NELBO:
11850.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELBO: 5300.39
*****
*****
Validation loss decreased (10626.921875 --> 10600.771484). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.37 .. NELBO:
11792.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.64 .. NELBO: 5310.66
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.32 .. NELBO:
11780.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.72 .. NELBO: 5333.74
*****
*****
EarlyStopping counter: 2 out of 5
*****

```



```

*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.85 .. NELBO:
11791.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.63 .. NELBO: 5350.65
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.12 .. NELBO:
11796.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.72 .. NELBO: 5353.74
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.97 .. NELBO:
11786.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.13 .. NELBO: 5348.15
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 95
model: ETM(
  (t_drop): Dropout(p=0.056529288725180704, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
)

```

```

(mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 77.86 .. Rec_loss: 12263.8 .. NELBO:
12341.66
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.11 .. Rec_loss: 5443.62 .. NELBO: 5450.73
*****
*****
Validation loss decreased (inf --> 10901.472656). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.72 .. Rec_loss: 12246.83 .. NELBO:
12254.55
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5430.8 .. NELBO: 5431.16
*****
*****
Validation loss decreased (10901.472656 --> 10862.323242). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 12205.0 .. NELBO:
12205.51
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5406.74 .. NELBO: 5406.8
*****
*****
Validation loss decreased (10862.323242 --> 10813.585938). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12130.66 .. NELBO:
12130.74
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5373.21 .. NELBO: 5373.23

```

```

*****
*****
Validation loss decreased (10813.585938 --> 10746.468750). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12032.01 .. NELBO:
12032.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.71 .. NELBO: 5336.72
*****
*****
Validation loss decreased (10746.468750 --> 10673.441406). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11923.63 .. NELBO:
11923.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5308.45 .. NELBO: 5308.46
*****
*****
Validation loss decreased (10673.441406 --> 10616.933594). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11832.94 .. NELBO:
11832.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.52 .. NELBO: 5300.53
*****
*****
Validation loss decreased (10616.933594 --> 10601.074219). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.3 .. NELBO:
11785.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5315.41 .. NELBO: 5315.42

```

```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.77 .. NELBO:
11781.8
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.85 .. NELBO: 5338.86
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.13 .. NELBO:
11794.16
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.76 .. NELBO: 5352.77
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.31 .. NELBO:
11795.34
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.08 .. NELBO: 5353.09
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.72 .. NELBO:
11782.75
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.46 .. NELBO: 5346.47

```

```

*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.056529288725180704, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.18 .. Rec_loss: 12263.97 .. NELBO:
12350.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.4 .. Rec_loss: 5443.89 .. NELBO: 5451.29
*****
*****
Validation loss decreased (inf --> 10902.593750). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.97 .. Rec_loss: 12248.39 .. NELBO:
12256.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.35 .. NELBO: 5432.78
*****
*****
Validation loss decreased (10902.593750 --> 10865.563477). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12210.23 .. NELBO:
12210.85
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.98 .. NELBO: 5410.06
*****
*****
Validation loss decreased (10865.563477 --> 10820.121094). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12141.09 .. NELBO:
12141.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.95 .. NELBO: 5377.98
*****
*****
Validation loss decreased (10820.121094 --> 10755.960938). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12046.4 .. NELBO:
12046.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.74 .. NELBO: 5341.76
*****
*****
Validation loss decreased (10755.960938 --> 10683.517578). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11939.11 .. NELBO:
11939.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.73 .. NELBO: 5311.75
*****
*****
Validation loss decreased (10683.517578 --> 10623.492188). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11845.25 .. NELBO:
11845.29
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.26 .. NELBO: 5300.28
*****
*****
Validation loss decreased (10623.492188 --> 10600.551758). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.98 .. NELBO:
11790.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.08 .. NELBO: 5312.1
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.71 .. NELBO:
11780.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.41 .. NELBO: 5335.43
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.19 .. NELBO:
11793.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.41 .. NELBO: 5351.43
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.99 .. NELBO:
11797.03
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.51 .. NELBO: 5353.53
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.89 .. NELBO:
11784.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.51 .. NELBO: 5347.53
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.056529288725180704, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 84.57 .. Rec_loss: 12264.07 .. NELBO:
12348.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.28 .. Rec_loss: 5443.98 .. NELBO: 5452.26
*****
*****
Validation loss decreased (inf --> 10904.511719). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.89 .. Rec_loss: 12247.96 .. NELBO:

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12256.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5431.78 .. NELBO: 5432.14
*****
*****
Validation loss decreased (10904.511719 --> 10864.268555). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12207.94 .. NELBO:
12208.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5409.15 .. NELBO: 5409.21
*****
*****
Validation loss decreased (10864.268555 --> 10818.425781). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12138.69 .. NELBO:
12138.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.14 .. NELBO: 5377.16
*****
*****
Validation loss decreased (10818.425781 --> 10754.330078). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12043.25 .. NELBO:
12043.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.28 .. NELBO: 5341.3
*****
*****
Validation loss decreased (10754.330078 --> 10682.582031). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11936.38 .. NELBO:
```

```
11936.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.81 .. NELB0: 5311.82
*****
*****
Validation loss decreased (10682.582031 --> 10623.655273). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11843.46 .. NELB0:
11843.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.8 .. NELB0: 5300.81
*****
*****
Validation loss decreased (10623.655273 --> 10601.635742). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.96 .. NELB0:
11788.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.69 .. NELB0: 5312.7
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.68 .. NELB0:
11780.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.74 .. NELB0: 5335.76
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.75 .. NELB0:
```

```

11792.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.45 .. NELBO: 5351.47
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.11 .. NELBO:
11796.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.48 .. NELBO: 5353.5
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.0 .. NELBO:
11785.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.45 .. NELBO: 5347.46
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 96
model: ETM(
  (t_drop): Dropout(p=0.05215725699850295, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 80.01 .. Rec_loss: 12264.53 .. NELBO:
12344.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.86 .. Rec_loss: 5444.2 .. NELBO: 5452.06
*****
*****
Validation loss decreased (inf --> 10904.111328). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.44 .. Rec_loss: 12249.28 .. NELBO:
12257.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5432.57 .. NELBO: 5432.95
*****
*****
Validation loss decreased (10904.111328 --> 10865.895508). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12211.2 .. NELBO:
12211.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.36 .. NELBO: 5410.43
*****
*****
Validation loss decreased (10865.895508 --> 10820.860352). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12143.11 .. NELBO:
12143.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.43 .. NELBO: 5378.45
*****
*****

```

```

Validation loss decreased (10820.860352 --> 10756.902344). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12048.17 .. NELBO:
12048.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.18 .. NELBO: 5342.2
*****
*****
Validation loss decreased (10756.902344 --> 10684.402344). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11941.65 .. NELBO:
11941.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.97 .. NELBO: 5311.99
*****
*****
Validation loss decreased (10684.402344 --> 10623.982422). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11846.47 .. NELBO:
11846.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.11 .. NELBO: 5300.13
*****
*****
Validation loss decreased (10623.982422 --> 10600.264648). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.82 .. NELBO:
11790.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.53 .. NELBO: 5311.55
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.97 .. NELBO:
11781.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.71 .. NELBO: 5334.73
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.75 .. NELBO:
11792.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.85 .. NELBO: 5350.87
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.9 .. NELBO:
11795.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.24 .. NELBO: 5353.26
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.01 .. NELBO:
11785.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.48 .. NELBO: 5347.5
*****
*****

```

```

EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05215725699850295, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 87.72 .. Rec_loss: 12264.24 .. NELBO:
12351.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.89 .. Rec_loss: 5444.03 .. NELBO: 5451.92
*****
*****
Validation loss decreased (inf --> 10903.829102). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.57 .. Rec_loss: 12248.54 .. NELBO:
12257.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5431.94 .. NELBO: 5432.39
*****
*****
Validation loss decreased (10903.829102 --> 10864.780273). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12208.86 .. NELBO:
12209.5
*****
*****
*****
*****

```

```
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.07 .. NELBO: 5409.15
*****
*****
Validation loss decreased (10864.780273 --> 10818.288086). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12138.74 .. NELBO:
12138.86
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.61 .. NELBO: 5376.64
*****
*****
Validation loss decreased (10818.288086 --> 10753.266602). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12042.67 .. NELBO:
12042.72
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.36 .. NELBO: 5340.38
*****
*****
Validation loss decreased (10753.266602 --> 10680.754883). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11935.83 .. NELBO:
11935.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.91 .. NELBO: 5310.93
*****
*****
Validation loss decreased (10680.754883 --> 10621.850586). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11843.0 .. NELBO:
11843.04
*****
*****
*****
*****
```



```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELBO: 5300.39
*****
*****
Validation loss decreased (10621.850586 --> 10600.787109). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.1 .. NELBO:
11790.14
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.74 .. NELBO: 5312.76
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.57 .. NELBO:
11781.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.75 .. NELBO: 5335.77
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.58 .. NELBO:
11793.62
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.0 .. NELBO: 5351.02
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.66 .. NELBO:
11795.7
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.71 .. NELBO: 5352.73
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.91 .. NELBO:
11783.95
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.75 .. NELBO: 5346.77
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05215725699850295, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 89.94 .. Rec_loss: 12264.05 .. NELBO:
12353.99
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.26 .. Rec_loss: 5443.96 .. NELBO: 5452.22
*****
*****
Validation loss decreased (inf --> 10904.448242). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.83 .. Rec_loss: 12248.78 .. NELBO:
12257.61
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5432.48 .. NELBO: 5432.9
*****
*****
Validation loss decreased (10904.448242 --> 10865.786133). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12211.11 .. NELBO:
12211.71
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.42 .. NELBO: 5410.49
*****
*****
Validation loss decreased (10865.786133 --> 10820.972656). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12143.27 .. NELBO:
12143.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.79 .. NELBO: 5378.81
*****
*****
Validation loss decreased (10820.972656 --> 10757.618164). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12048.96 .. NELBO:
12049.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.87 .. NELBO: 5342.89
*****
*****
Validation loss decreased (10757.618164 --> 10685.778320). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11942.14 .. NELBO:
11942.17
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.75 .. NELBO: 5312.77
*****
*****
Validation loss decreased (10685.778320 --> 10625.534180). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.62 .. NELBO:
11847.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.5 .. NELBO: 5300.52
*****
*****
Validation loss decreased (10625.534180 --> 10601.037109). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.93 .. NELBO:
11790.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.21 .. NELBO: 5311.23
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.08 .. NELBO:
11780.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.09 .. NELBO: 5334.11
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.84 .. NELBO:
11791.87
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.56 .. NELBO: 5350.58
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.8 .. NELBO:
11795.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.38 .. NELBO: 5353.4
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.18 .. NELBO:
11785.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.75 .. NELBO: 5347.76
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 97
model: ETM(
  (t_drop): Dropout(p=0.056348600427567015, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****

```

```

*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 91.69 .. Rec_loss: 12264.32 .. NELBO:
12356.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.33 .. Rec_loss: 5444.38 .. NELBO: 5452.71
*****
*****
Validation loss decreased (inf --> 10905.413086). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.95 .. Rec_loss: 12249.06 .. NELBO:
12258.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5432.24 .. NELBO: 5432.66
*****
*****
Validation loss decreased (10905.413086 --> 10865.315430). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12209.2 .. NELBO:
12209.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.18 .. NELBO: 5409.25
*****
*****
Validation loss decreased (10865.315430 --> 10818.500000). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12138.65 .. NELBO:
12138.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.48 .. NELBO: 5376.51
*****
*****
Validation loss decreased (10818.500000 --> 10753.006836). Saving model ...
*****

```

```

*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12040.7 .. NELBO:
12040.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.06 .. NELBO: 5340.08
*****
*****
Validation loss decreased (10753.006836 --> 10680.157227). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11933.94 .. NELBO:
11933.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.68 .. NELBO: 5310.7
*****
*****
Validation loss decreased (10680.157227 --> 10621.405273). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.04 .. NELBO:
11841.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.52 .. NELBO: 5300.54
*****
*****
Validation loss decreased (10621.405273 --> 10601.077148). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.24 .. NELBO:
11788.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.38 .. NELBO: 5313.4
*****
*****
EarlyStopping counter: 1 out of 5
*****

```

```

*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.31 .. NELBO:
11781.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.58 .. NELBO: 5336.6
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.39 .. NELBO:
11793.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.66 .. NELBO: 5351.68
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.43 .. NELBO:
11796.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.08 .. NELBO: 5353.1
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.17 .. NELBO:
11784.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.9 .. NELBO: 5346.92
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping

```



```

model: ETM(
  (t_drop): Dropout(p=0.056348600427567015, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 84.84 .. Rec_loss: 12263.82 .. NELBO:
12348.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.96 .. Rec_loss: 5443.43 .. NELBO: 5451.39
*****
*****
Validation loss decreased (inf --> 10902.779297). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.76 .. Rec_loss: 12246.04 .. NELBO:
12254.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5429.79 .. NELBO: 5430.23
*****
*****
Validation loss decreased (10902.779297 --> 10860.461914). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12202.02 .. NELBO:
12202.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5404.88 .. NELBO: 5404.95
*****
*****

```

```

*****
Validation loss decreased (10860.461914 --> 10809.902344). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12126.84 .. NELBO:
12126.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5370.9 .. NELBO: 5370.93
*****
*****
Validation loss decreased (10809.902344 --> 10741.844727). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12026.7 .. NELBO:
12026.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.62 .. NELBO: 5334.64
*****
*****
Validation loss decreased (10741.844727 --> 10669.284180). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11919.73 .. NELBO:
11919.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5307.42 .. NELBO: 5307.44
*****
*****
Validation loss decreased (10669.284180 --> 10614.877930). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11832.08 .. NELBO:
11832.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.77 .. NELBO: 5300.79
*****

```

```

*****
Validation loss decreased (10614.877930 --> 10601.569336). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.68 .. NELBO:
11786.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5316.03 .. NELBO: 5316.05
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.74 .. NELBO:
11783.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.69 .. NELBO: 5338.71
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.01 .. NELBO:
11795.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.72 .. NELBO: 5351.74
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.42 .. NELBO:
11794.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.77 .. NELBO: 5351.79
*****

```

```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.02 .. NELBO:
11782.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.33 .. NELBO: 5345.35
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.056348600427567015, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 93.72 .. Rec_loss: 12264.54 .. NELBO:
12358.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.34 .. Rec_loss: 5444.21 .. NELBO: 5452.55
*****
*****
Validation loss decreased (inf --> 10905.091797). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.0 .. Rec_loss: 12249.54 .. NELBO:
12258.54
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.59 .. NELBO: 5433.02
*****
*****
Validation loss decreased (10905.091797 --> 10866.035156). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12211.27 .. NELBO:
12211.88
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.23 .. NELBO: 5410.3
*****
*****
Validation loss decreased (10866.035156 --> 10820.596680). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12142.67 .. NELBO:
12142.78
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.19 .. NELBO: 5378.22
*****
*****
Validation loss decreased (10820.596680 --> 10756.436523). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12048.15 .. NELBO:
12048.2
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.0 .. NELBO: 5342.02
*****
*****
Validation loss decreased (10756.436523 --> 10684.044922). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11941.21 .. NELBO:
11941.25
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.01 .. NELBO: 5312.03
*****
*****
Validation loss decreased (10684.044922 --> 10624.061523). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11847.32 .. NELBO:
11847.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.36 .. NELBO: 5300.38
*****
*****
Validation loss decreased (10624.061523 --> 10600.751953). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.06 .. NELBO:
11792.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.67 .. NELBO: 5311.69
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.06 .. NELBO:
11782.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.46 .. NELBO: 5334.48
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.19 .. NELBO:
11793.23
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.33 .. NELBO: 5350.35
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.53 .. NELBO:
11796.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.68 .. NELBO: 5352.7
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.75 .. NELBO:
11784.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.98 .. NELBO: 5347.0
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 98
model: ETM(
  (t_drop): Dropout(p=0.05593318717084295, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.49 .. Rec_loss: 12264.16 .. NELBO:

```

```
12343.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.83 .. Rec_loss: 5443.59 .. NELBO: 5451.42
*****
*****
Validation loss decreased (inf --> 10902.835938). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.36 .. Rec_loss: 12247.39 .. NELBO:
12255.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5431.48 .. NELBO: 5431.91
*****
*****
Validation loss decreased (10902.835938 --> 10863.812500). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12207.14 .. NELBO:
12207.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5408.35 .. NELBO: 5408.44
*****
*****
Validation loss decreased (10863.812500 --> 10816.891602). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 12136.59 .. NELBO:
12136.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5375.8 .. NELBO: 5375.84
*****
*****
Validation loss decreased (10816.891602 --> 10751.665039). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 12040.63 .. NELBO:
```



```
12040.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5339.65 .. NELBO: 5339.68
*****
*****
Validation loss decreased (10751.665039 --> 10679.351562). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11933.16 .. NELBO:
11933.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5310.5 .. NELBO: 5310.53
*****
*****
Validation loss decreased (10679.351562 --> 10621.050781). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11840.8 .. NELBO:
11840.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5300.44 .. NELBO: 5300.48
*****
*****
Validation loss decreased (10621.050781 --> 10600.947266). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11788.39 .. NELBO:
11788.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5313.28 .. NELBO: 5313.32
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11781.27 .. NELBO:
```

```
11781.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5336.4 .. NELBO: 5336.45
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11793.55 .. NELBO:
11793.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5351.36 .. NELBO: 5351.41
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11795.86 .. NELBO:
11795.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5352.7 .. NELBO: 5352.74
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11783.65 .. NELBO:
11783.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.57 .. NELBO: 5346.6
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
    (t_drop): Dropout(p=0.05593318717084295, inplace=False)
```

```

(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=63, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.38 .. Rec_loss: 12263.57 .. NELBO:
12351.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.18 .. Rec_loss: 5443.84 .. NELBO: 5452.02
*****
*****
Validation loss decreased (inf --> 10904.039062). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.66 .. Rec_loss: 12248.41 .. NELBO:
12257.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5432.49 .. NELBO: 5432.95
*****
*****
Validation loss decreased (10904.039062 --> 10865.892578). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12210.39 .. NELBO:
12211.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.27 .. NELBO: 5410.35
*****
*****
Validation loss decreased (10865.892578 --> 10820.711914). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12142.01 .. NELBO:
12142.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.38 .. NELBO: 5378.4
*****
*****
Validation loss decreased (10820.711914 --> 10756.809570). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12047.08 .. NELBO:
12047.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.27 .. NELBO: 5342.29
*****
*****
Validation loss decreased (10756.809570 --> 10684.567383). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11939.67 .. NELBO:
11939.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.16 .. NELBO: 5312.17
*****
*****
Validation loss decreased (10684.567383 --> 10624.357422). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11844.73 .. NELBO:
11844.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.33 .. NELBO: 5300.34
*****
*****
Validation loss decreased (10624.357422 --> 10600.694336). Saving model ...

```

```

*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.32 .. NELBO:
11789.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.75 .. NELBO: 5311.76
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.94 .. NELBO:
11779.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.01 .. NELBO: 5335.02
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.48 .. NELBO:
11792.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.4 .. NELBO: 5351.41
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.32 .. NELBO:
11796.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.91 .. NELBO: 5353.92
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.57 .. NELBO:
11785.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.02 .. NELBO: 5348.03
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05593318717084295, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.86 .. Rec_loss: 12264.05 .. NELBO:
12343.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.54 .. Rec_loss: 5444.11 .. NELBO: 5451.65
*****
*****
Validation loss decreased (inf --> 10903.305664). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.14 .. Rec_loss: 12248.53 .. NELBO:
12256.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.14 .. NELBO: 5432.59

```

```

*****
*****
Validation loss decreased (10903.305664 --> 10865.169922). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12209.9 .. NELBO:
12210.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.02 .. NELBO: 5410.09
*****
*****
Validation loss decreased (10865.169922 --> 10820.170898). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12142.44 .. NELBO:
12142.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.38 .. NELBO: 5378.4
*****
*****
Validation loss decreased (10820.170898 --> 10756.800781). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12048.61 .. NELBO:
12048.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5342.45 .. NELBO: 5342.46
*****
*****
Validation loss decreased (10756.800781 --> 10684.927734). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11942.52 .. NELBO:
11942.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.32 .. NELBO: 5312.33

```

```

*****
*****
Validation loss decreased (10684.927734 --> 10624.661133). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.6 .. NELBO:
11847.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.07 .. NELBO: 5300.08
*****
*****
Validation loss decreased (10624.661133 --> 10600.173828). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.48 .. NELBO:
11791.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.82 .. NELBO: 5310.83
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.53 .. NELBO:
11780.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5333.74 .. NELBO: 5333.75
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.34 .. NELBO:
11792.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5350.21 .. NELBO: 5350.22

```



```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.26 .. NELBO:
11796.29
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.07 .. NELBO: 5353.08
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.89 .. NELBO:
11784.92
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.53 .. NELBO: 5347.54
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 99
model: ETM(
  (t_drop): Dropout(p=0.05861084383625655, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=61, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=61, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=61, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 12263.7 .. NELBO:
12263.95
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5442.91 .. NELBO: 5443.43
*****
*****
Validation loss decreased (inf --> 10886.857422). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.61 .. Rec_loss: 12243.14 .. NELBO:
12244.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5427.22 .. NELBO: 5427.25
*****
*****
Validation loss decreased (10886.857422 --> 10854.501953). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12192.94 .. NELBO:
12193.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5400.08 .. NELBO: 5400.19
*****
*****
Validation loss decreased (10854.501953 --> 10800.380859). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12111.35 .. NELBO:
12111.7
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 5364.17 .. NELBO: 5364.92
*****
*****
Validation loss decreased (10800.380859 --> 10729.822266). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.45 .. Rec_loss: 12005.3 .. NELBO:
12007.75
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.07 .. Rec_loss: 5328.31 .. NELBO: 5329.38
*****
*****
Validation loss decreased (10729.822266 --> 10658.763672). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.37 .. Rec_loss: 11899.86 .. NELBO:
11901.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5304.63 .. NELBO: 5304.79
*****
*****
Validation loss decreased (10658.763672 --> 10609.581055). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 11819.76 .. NELBO:
11820.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5302.37 .. NELBO: 5302.67
*****
*****
Validation loss decreased (10609.581055 --> 10605.344727). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 11782.83 .. NELBO:
11783.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5319.78 .. NELBO: 5320.11
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 11784.28 .. NELBO:
11785.01
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5340.8 .. NELBO: 5341.03
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.95 .. Rec_loss: 11793.4 .. NELBO:
11794.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.99 .. Rec_loss: 5349.21 .. NELBO: 5350.2
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.84 .. Rec_loss: 11786.88 .. NELBO:
11789.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.23 .. Rec_loss: 5343.75 .. NELBO: 5346.98
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 6.31 .. Rec_loss: 11769.56 .. NELBO:
11775.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.03 .. Rec_loss: 5339.36 .. NELBO: 5341.39
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05861084383625655, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)

```

```

(alphas): Linear(in_features=300, out_features=61, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): SELU()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=61, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=61, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 12263.45 .. NELBO:
12263.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 5442.36 .. NELBO: 5442.9
*****
*****
Validation loss decreased (inf --> 10885.804688). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.9 .. Rec_loss: 12240.9 .. NELBO:
12242.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5425.59 .. NELBO: 5425.64
*****
*****
Validation loss decreased (10885.804688 --> 10851.268555). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12187.72 .. NELBO:
12187.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5397.17 .. NELBO: 5397.24
*****
*****
Validation loss decreased (10851.268555 --> 10794.477539). Saving model ...
*****
*****

```

```
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 12102.55 .. NELBO:
12102.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5360.54 .. NELBO: 5361.07
*****
*****
Validation loss decreased (10794.477539 --> 10722.125000). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 2.22 .. Rec_loss: 11994.28 .. NELBO:
11996.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.64 .. Rec_loss: 5324.83 .. NELBO: 5326.47
*****
*****
Validation loss decreased (10722.125000 --> 10652.955078). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 2.41 .. Rec_loss: 11889.11 .. NELBO:
11891.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5303.28 .. NELBO: 5303.36
*****
*****
Validation loss decreased (10652.955078 --> 10606.722656). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 11814.14 .. NELBO:
11814.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5303.52 .. NELBO: 5303.75
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
```

```

Epoch----->8 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 11782.23 .. NELBO:
11782.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5322.69 .. NELBO: 5322.8
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 11786.7 .. NELBO:
11787.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5342.83 .. NELBO: 5343.2
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 11794.91 .. NELBO:
11795.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5350.63 .. NELBO: 5350.92
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.78 .. Rec_loss: 11788.16 .. NELBO:
11788.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 5346.69 .. NELBO: 5347.5
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(

```

```

(t_drop): Dropout(p=0.05861084383625655, inplace=False)
(theta_act): SELU()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=61, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): SELU()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=61, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=61, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12263.33 .. NELBO:
12263.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 5442.17 .. NELBO: 5442.83
*****
*****
Validation loss decreased (inf --> 10885.656250). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 12240.4 .. NELBO:
12241.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5424.98 .. NELBO: 5425.01
*****
*****
Validation loss decreased (10885.656250 --> 10850.010742). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12186.29 .. NELBO:
12186.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5395.86 .. NELBO: 5396.31
*****
*****

```



```

Validation loss decreased (10850.010742 --> 10792.619141). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 1.3 .. Rec_loss: 12098.6 .. NELBO:
12099.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.36 .. Rec_loss: 5358.87 .. NELBO: 5360.23
*****
*****
Validation loss decreased (10792.619141 --> 10720.454102). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.07 .. Rec_loss: 11991.02 .. NELBO:
11993.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.02 .. Rec_loss: 5323.83 .. NELBO: 5324.85
*****
*****
Validation loss decreased (10720.454102 --> 10649.699219). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.24 .. Rec_loss: 11885.58 .. NELBO:
11887.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.47 .. Rec_loss: 5302.34 .. NELBO: 5303.81
*****
*****
Validation loss decreased (10649.699219 --> 10607.630859). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.97 .. Rec_loss: 11810.65 .. NELBO:
11812.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5303.28 .. NELBO: 5303.48
*****
*****

```

```
Validation loss decreased (10607.630859 --> 10606.963867). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.93 .. Rec_loss: 11781.2 .. NELBO:
11782.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5322.72 .. NELBO: 5322.8
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 11785.82 .. NELBO:
11786.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5342.19 .. NELBO: 5342.69
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.19 .. Rec_loss: 11793.29 .. NELBO:
11794.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.32 .. Rec_loss: 5348.46 .. NELBO: 5349.78
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.65 .. Rec_loss: 11784.29 .. NELBO:
11786.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 5345.12 .. NELBO: 5346.38
*****
*****
```

```

EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.83 .. Rec_loss: 11770.98 .. NELBO:
11773.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.76 .. Rec_loss: 5337.51 .. NELBO: 5339.27
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 100
model: ETM(
  (t_drop): Dropout(p=0.0559504538649013, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=57, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=57, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=57, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 73.57 .. Rec_loss: 12263.66 .. NELBO:
12337.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.29 .. Rec_loss: 5442.93 .. NELBO: 5450.22
*****
*****
Validation loss decreased (inf --> 10900.436523). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.84 .. Rec_loss: 12244.47 .. NELBO:
12252.31
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5429.02 .. NELBO: 5429.38
*****
*****
Validation loss decreased (10900.436523 --> 10858.751953). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 12199.11 .. NELBO:
12199.62
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5404.12 .. NELBO: 5404.18
*****
*****
Validation loss decreased (10858.751953 --> 10808.360352). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12123.88 .. NELBO:
12123.97
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5370.16 .. NELBO: 5370.18
*****
*****
Validation loss decreased (10808.360352 --> 10740.367188). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12023.33 .. NELBO:
12023.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5334.02 .. NELBO: 5334.03
*****
*****
Validation loss decreased (10740.367188 --> 10668.059570). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11915.81 .. NELBO:
11915.84
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5307.02 .. NELB0: 5307.03
*****
*****
Validation loss decreased (10668.059570 --> 10614.073242). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11828.23 .. NELB0:
11828.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.85 .. NELB0: 5300.86
*****
*****
Validation loss decreased (10614.073242 --> 10601.726562). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11783.66 .. NELB0:
11783.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5316.82 .. NELB0: 5316.83
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11782.66 .. NELB0:
11782.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5339.92 .. NELB0: 5339.93
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11795.21 .. NELB0:
11795.23
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.78 .. NELBO: 5352.79
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11794.46 .. NELBO:
11794.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.37 .. NELBO: 5352.38
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11781.25 .. NELBO:
11781.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5345.59 .. NELBO: 5345.6
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0559504538649013, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=57, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=57, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=57, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 63.23 .. Rec_loss: 12264.31 .. NELBO:
12327.54

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.69 .. Rec_loss: 5443.76 .. NELBO: 5450.45
*****
*****
Validation loss decreased (inf --> 10900.906250). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.25 .. Rec_loss: 12247.98 .. NELBO:
12255.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5431.62 .. NELBO: 5431.98
*****
*****
Validation loss decreased (10900.906250 --> 10863.959961). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 12207.76 .. NELBO:
12208.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.09 .. NELBO: 5408.16
*****
*****
Validation loss decreased (10863.959961 --> 10816.308594). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12135.77 .. NELBO:
12135.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.02 .. NELBO: 5375.04
*****
*****
Validation loss decreased (10816.308594 --> 10750.096680). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12037.71 .. NELBO:
12037.75

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.64 .. NELBO: 5338.66
*****
*****
Validation loss decreased (10750.096680 --> 10677.316406). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11929.99 .. NELBO:
11930.02
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.85 .. NELBO: 5309.87
*****
*****
Validation loss decreased (10677.316406 --> 10619.734375). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.65 .. NELBO:
11838.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.63 .. NELBO: 5300.65
*****
*****
Validation loss decreased (10619.734375 --> 10601.291016). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.12 .. NELBO:
11788.15
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.13 .. NELBO: 5314.15
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.02 .. NELBO:
11782.05

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.19 .. NELBO: 5337.21
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.95 .. NELBO:
11793.98
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.72 .. NELBO: 5351.74
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.78 .. NELBO:
11795.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.81 .. NELBO: 5352.83
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.76 .. NELBO:
11782.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.58 .. NELBO: 5346.6
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0559504538649013, inplace=False)
  (theta_act): Sigmoid()

```

```

(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=57, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=57, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=57, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 74.59 .. Rec_loss: 12264.19 .. NELBO:
12338.78
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.71 .. Rec_loss: 5443.9 .. NELBO: 5451.61
*****
*****
Validation loss decreased (inf --> 10903.231445). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.18 .. Rec_loss: 12247.82 .. NELBO:
12256.0
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5431.82 .. NELBO: 5432.16
*****
*****
Validation loss decreased (10903.231445 --> 10864.335938). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 12208.93 .. NELBO:
12209.44
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.14 .. NELBO: 5409.21
*****
*****
Validation loss decreased (10864.335938 --> 10818.422852). Saving model ...
*****

```

```

*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12139.2 .. NELBO:
12139.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.91 .. NELBO: 5376.93
*****
*****
Validation loss decreased (10818.422852 --> 10753.866211). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12043.62 .. NELBO:
12043.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.79 .. NELBO: 5340.81
*****
*****
Validation loss decreased (10753.866211 --> 10681.611328). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11936.54 .. NELBO:
11936.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.14 .. NELBO: 5311.15
*****
*****
Validation loss decreased (10681.611328 --> 10622.315430). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.42 .. NELBO:
11842.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.07 .. NELBO: 5300.08
*****
*****
Validation loss decreased (10622.315430 --> 10600.159180). Saving model ...
*****

```

```

*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.39 .. NELBO:
11788.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.99 .. NELBO: 5312.0
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.1 .. NELBO:
11780.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.23 .. NELBO: 5335.24
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.29 .. NELBO:
11792.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.33 .. NELBO: 5351.34
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11797.08 .. NELBO:
11797.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.64 .. NELBO: 5353.65
*****
*****
EarlyStopping counter: 4 out of 5
*****

```

```

*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.53 .. NELBO:
11785.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.73 .. NELBO: 5347.74
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 101
model: ETM(
  (t_drop): Dropout(p=0.05693980885122232, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 94.26 .. Rec_loss: 12264.07 .. NELBO:
12358.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.46 .. Rec_loss: 5444.12 .. NELBO: 5452.58
*****
*****
Validation loss decreased (inf --> 10905.166992). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.15 .. Rec_loss: 12248.85 .. NELBO:
12258.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.4 .. NELBO: 5432.85

```

```

*****
*****
Validation loss decreased (10905.166992 --> 10865.702148). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12210.37 .. NELBO:
12211.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.96 .. NELBO: 5410.03
*****
*****
Validation loss decreased (10865.702148 --> 10820.069336). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12141.37 .. NELBO:
12141.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.81 .. NELBO: 5377.84
*****
*****
Validation loss decreased (10820.069336 --> 10755.672852). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12045.78 .. NELBO:
12045.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.55 .. NELBO: 5341.57
*****
*****
Validation loss decreased (10755.672852 --> 10683.131836). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11938.55 .. NELBO:
11938.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.66 .. NELBO: 5311.68

```

```

*****
*****
Validation loss decreased (10683.131836 --> 10623.349609). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11844.08 .. NELBO:
11844.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.45 .. NELBO: 5300.47
*****
*****
Validation loss decreased (10623.349609 --> 10600.943359). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.34 .. NELBO:
11789.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.44 .. NELBO: 5312.46
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.72 .. NELBO:
11780.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.73 .. NELBO: 5335.75
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.63 .. NELBO:
11792.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.67 .. NELBO: 5351.69

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.44 .. NELBO:
11796.48
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.75 .. NELBO: 5353.77
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.79 .. NELBO:
11784.82
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.72 .. NELBO: 5347.74
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05693980885122232, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.84 .. Rec_loss: 12264.38 .. NELBO:
12353.22
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.36 .. Rec_loss: 5444.27 .. NELBO: 5452.63
*****
*****
Validation loss decreased (inf --> 10905.253906). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.98 .. Rec_loss: 12249.63 .. NELBO:
12258.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.5 .. NELBO: 5432.93
*****
*****
Validation loss decreased (10905.253906 --> 10865.860352). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12210.49 .. NELBO:
12211.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.76 .. NELBO: 5409.85
*****
*****
Validation loss decreased (10865.860352 --> 10819.693359). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12140.69 .. NELBO:
12140.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.2 .. NELBO: 5377.23
*****
*****
Validation loss decreased (10819.693359 --> 10754.461914). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12044.08 .. NELBO:
12044.13
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.63 .. NELBO: 5340.65
*****
*****
Validation loss decreased (10754.461914 --> 10681.295898). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.42 .. NELBO:
11936.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.82 .. NELBO: 5310.84
*****
*****
Validation loss decreased (10681.295898 --> 10621.667969). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.29 .. NELBO:
11842.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.18 .. NELBO: 5300.2
*****
*****
Validation loss decreased (10621.667969 --> 10600.402344). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.87 .. NELBO:
11788.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.88 .. NELBO: 5312.9
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.46 .. NELBO:
11781.49
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.35 .. NELBO: 5336.37
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.62 .. NELBO:
11793.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.86 .. NELBO: 5351.88
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.4 .. NELBO:
11796.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.52 .. NELBO: 5353.54
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.76 .. NELBO:
11784.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.33 .. NELBO: 5347.35
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05693980885122232, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)

```

```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 96.69 .. Rec_loss: 12264.11 .. NELB0:
12360.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.15 .. Rec_loss: 5444.11 .. NELB0: 5452.26
*****
*****
Validation loss decreased (inf --> 10904.513672). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.8 .. Rec_loss: 12248.89 .. NELB0:
12257.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5432.36 .. NELB0: 5432.87
*****
*****
Validation loss decreased (10904.513672 --> 10865.732422). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 12210.02 .. NELB0:
12210.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.85 .. NELB0: 5409.94
*****
*****
Validation loss decreased (10865.732422 --> 10819.867188). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12141.51 .. NELB0:

```

```
12141.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.73 .. NELBO: 5377.76
*****
*****
Validation loss decreased (10819.867188 --> 10755.509766). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12045.97 .. NELBO:
12046.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.59 .. NELBO: 5341.61
*****
*****
Validation loss decreased (10755.509766 --> 10683.220703). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11939.09 .. NELBO:
11939.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.69 .. NELBO: 5311.71
*****
*****
Validation loss decreased (10683.220703 --> 10623.420898). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11845.36 .. NELBO:
11845.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.12 .. NELBO: 5300.14
*****
*****
Validation loss decreased (10623.420898 --> 10600.278320). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.12 .. NELBO:
```

```
11790.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.6 .. NELBO: 5311.62
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.44 .. NELBO:
11780.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.66 .. NELBO: 5334.68
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.49 .. NELBO:
11792.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.68 .. NELBO: 5350.7
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.59 .. NELBO:
11795.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.08 .. NELBO: 5353.1
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.5 .. NELBO:
```

```

11784.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.4 .. NELBO: 5347.42
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 102
model: ETM(
  (t_drop): Dropout(p=0.05617899867124623, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=66, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=66, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=66, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1346.07 .. Rec_loss: 12264.65 .. NELBO:
13610.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.21 .. Rec_loss: 5445.39 .. NELBO: 5468.6
*****
*****
Validation loss decreased (inf --> 10937.191406). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 28.71 .. Rec_loss: 12253.96 .. NELBO:
12282.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.55 .. Rec_loss: 5437.19 .. NELBO: 5444.74
*****
*****

```

```

Validation loss decreased (10937.191406 --> 10889.487305). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 16.18 .. Rec_loss: 12226.85 .. NELBO:
12243.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.6 .. Rec_loss: 5420.34 .. NELBO: 5427.94
*****
*****
Validation loss decreased (10889.487305 --> 10855.874023). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 14.63 .. Rec_loss: 12173.97 .. NELBO:
12188.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.61 .. Rec_loss: 5393.77 .. NELBO: 5399.38
*****
*****
Validation loss decreased (10855.874023 --> 10798.768555). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 10.73 .. Rec_loss: 12093.32 .. NELBO:
12104.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.98 .. Rec_loss: 5360.0 .. NELBO: 5363.98
*****
*****
Validation loss decreased (10798.768555 --> 10727.955078). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 7.61 .. Rec_loss: 11992.84 .. NELBO:
12000.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.98 .. Rec_loss: 5326.06 .. NELBO: 5329.04
*****
*****

```



```

Validation loss decreased (10727.955078 --> 10658.072266). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.91 .. Rec_loss: 11889.27 .. NELBO:
11895.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.3 .. Rec_loss: 5303.49 .. NELBO: 5305.79
*****
*****
Validation loss decreased (10658.072266 --> 10611.575195). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.58 .. Rec_loss: 11810.66 .. NELBO:
11815.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.74 .. Rec_loss: 5302.79 .. NELBO: 5304.53
*****
*****
Validation loss decreased (10611.575195 --> 10609.060547). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 3.4 .. Rec_loss: 11777.88 .. NELBO:
11781.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 5322.26 .. NELBO: 5323.52
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.47 .. Rec_loss: 11783.62 .. NELBO:
11786.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.9 .. Rec_loss: 5344.65 .. NELBO: 5345.55
*****
*****

```

```

EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.73 .. Rec_loss: 11795.51 .. NELBO:
11797.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 5354.66 .. NELBO: 5355.29
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.21 .. Rec_loss: 11793.0 .. NELBO:
11794.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5352.18 .. NELBO: 5352.63
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.89 .. Rec_loss: 11778.04 .. NELBO:
11778.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5344.82 .. NELBO: 5345.18
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05617899867124623, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=66, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
)

```

```

)
(mu_q_theta): Linear(in_features=800, out_features=66, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=66, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1246.96 .. Rec_loss: 12264.17 .. NELBO:
13511.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.21 .. Rec_loss: 5445.57 .. NELBO:
5468.78
*****
*****
Validation loss decreased (inf --> 10937.558594). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 29.59 .. Rec_loss: 12253.99 .. NELBO:
12283.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.47 .. Rec_loss: 5436.76 .. NELBO:
5447.23
*****
*****
Validation loss decreased (10937.558594 --> 10894.447266). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 22.3 .. Rec_loss: 12225.41 .. NELBO:
12247.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.81 .. Rec_loss: 5419.25 .. NELBO: 5429.06
*****
*****
Validation loss decreased (10894.447266 --> 10858.130859). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 18.4 .. Rec_loss: 12170.34 .. NELBO:
12188.74
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.6 .. Rec_loss: 5392.24 .. NELBO: 5398.84
*****
*****
Validation loss decreased (10858.130859 --> 10797.686523). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 12.68 .. Rec_loss: 12088.34 .. NELBO:
12101.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.86 .. Rec_loss: 5358.21 .. NELBO: 5363.07
*****
*****
Validation loss decreased (10797.686523 --> 10726.140625). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 9.39 .. Rec_loss: 11985.96 .. NELBO:
11995.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.92 .. Rec_loss: 5324.46 .. NELBO: 5328.38
*****
*****
Validation loss decreased (10726.140625 --> 10656.755859). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 7.86 .. Rec_loss: 11883.65 .. NELBO:
11891.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.21 .. Rec_loss: 5302.84 .. NELBO: 5306.05
*****
*****
Validation loss decreased (10656.755859 --> 10612.112305). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 6.34 .. Rec_loss: 11806.98 .. NELBO:
11813.32
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.43 .. Rec_loss: 5303.62 .. NELBO: 5306.05
*****
*****
Validation loss decreased (10612.112305 --> 10612.092773). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 4.59 .. Rec_loss: 11776.75 .. NELBO:
11781.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 5323.91 .. NELBO: 5325.51
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.95 .. Rec_loss: 11784.15 .. NELBO:
11787.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.94 .. Rec_loss: 5345.77 .. NELBO: 5346.71
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.71 .. Rec_loss: 11795.3 .. NELBO:
11797.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5354.69 .. NELBO: 5355.2
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.95 .. Rec_loss: 11791.24 .. NELBO:
11792.19
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5351.56 .. NELBO: 5351.84
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 11777.15 .. NELBO:
11777.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5344.07 .. NELBO: 5344.22
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05617899867124623, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=66, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=66, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=66, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 891.43 .. Rec_loss: 12264.45 .. NELBO:
13155.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 22.44 .. Rec_loss: 5445.21 .. NELBO:
5467.65
*****
*****
Validation loss decreased (inf --> 10935.302734). Saving model ...
*****
*****

```

```

Epoch----->2 .. LR: 0.005 .. KL_theta: 28.03 .. Rec_loss: 12252.71 .. NELBO:
12280.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.67 .. Rec_loss: 5436.1 .. NELBO: 5442.77
*****
*****
Validation loss decreased (10935.302734 --> 10885.542969). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 13.62 .. Rec_loss: 12223.68 .. NELBO:
12237.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.0 .. Rec_loss: 5418.69 .. NELBO: 5424.69
*****
*****
Validation loss decreased (10885.542969 --> 10849.381836). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 11.29 .. Rec_loss: 12168.81 .. NELBO:
12180.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.7 .. Rec_loss: 5391.7 .. NELBO: 5395.4
*****
*****
Validation loss decreased (10849.381836 --> 10790.794922). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 6.42 .. Rec_loss: 12087.06 .. NELBO:
12093.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.77 .. Rec_loss: 5357.79 .. NELBO: 5359.56
*****
*****
Validation loss decreased (10790.794922 --> 10719.120117). Saving model ...
*****
*****

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```

Epoch---->6 .. LR: 0.005 .. KL_theta: 3.08 .. Rec_loss: 11985.81 .. NELBO:
11988.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 5324.35 .. NELBO: 5325.11
*****
*****
Validation loss decreased (10719.120117 --> 10650.225586). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.28 .. Rec_loss: 11883.47 .. NELBO:
11884.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5302.91 .. NELBO: 5303.19
*****
*****
Validation loss decreased (10650.225586 --> 10606.369141). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 11807.74 .. NELBO:
11808.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5303.34 .. NELBO: 5303.44
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 11777.46 .. NELBO:
11777.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5323.22 .. NELBO: 5323.26
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

```



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Epoch---->10 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11783.84 .. NELBO:
11783.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.32 .. NELBO: 5345.34
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.16 .. NELBO:
11796.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5355.0 .. NELBO: 5355.02
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.96 .. NELBO:
11792.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.4 .. NELBO: 5352.41
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 103
model: ETM(
  (t_drop): Dropout(p=0.05607560215661084, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=68, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=68, bias=True)

```

```

(logsigma_q_theta): Linear(in_features=800, out_features=68, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.86 .. Rec_loss: 12264.16 .. NELBO:
12344.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.49 .. Rec_loss: 5444.2 .. NELBO: 5451.69
*****
*****
Validation loss decreased (inf --> 10903.379883). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.91 .. Rec_loss: 12249.33 .. NELBO:
12257.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5432.96 .. NELBO: 5433.35
*****
*****
Validation loss decreased (10903.379883 --> 10866.700195). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12212.5 .. NELBO:
12213.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5411.05 .. NELBO: 5411.13
*****
*****
Validation loss decreased (10866.700195 --> 10822.267578). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12144.85 .. NELBO:
12144.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.24 .. NELBO: 5379.27
*****
*****

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```

*****
Validation loss decreased (10822.267578 --> 10758.536133). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12049.45 .. NELBO:
12049.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.95 .. NELBO: 5342.97
*****
*****
Validation loss decreased (10758.536133 --> 10685.933594). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11942.87 .. NELBO:
11942.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.45 .. NELBO: 5312.47
*****
*****
Validation loss decreased (10685.933594 --> 10624.937500). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.07 .. NELBO:
11847.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.22 .. NELBO: 5300.24
*****
*****
Validation loss decreased (10624.937500 --> 10600.475586). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.48 .. NELBO:
11790.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.49 .. NELBO: 5311.51
*****

```

```

*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.56 .. NELBO:
11780.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.85 .. NELBO: 5334.87
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.78 .. NELBO:
11792.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.19 .. NELBO: 5351.21
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.41 .. NELBO:
11796.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.58 .. NELBO: 5353.6
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.31 .. NELBO:
11785.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.72 .. NELBO: 5347.73
*****

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```

*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05607560215661084, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=68, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=68, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=68, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 80.83 .. Rec_loss: 12263.37 .. NELB0:
12344.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.6 .. Rec_loss: 5443.25 .. NELB0: 5450.85
*****
*****
Validation loss decreased (inf --> 10901.700195). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.27 .. Rec_loss: 12245.18 .. NELB0:
12253.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5429.61 .. NELB0: 5430.05
*****
*****
Validation loss decreased (10901.700195 --> 10860.103516). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12200.77 .. NELB0:
12201.42
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5404.52 .. NELBO: 5404.61
*****
*****
Validation loss decreased (10860.103516 --> 10809.204102). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12124.14 .. NELBO:
12124.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5370.14 .. NELBO: 5370.17
*****
*****
Validation loss decreased (10809.204102 --> 10740.347656). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12022.37 .. NELBO:
12022.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.66 .. NELBO: 5333.68
*****
*****
Validation loss decreased (10740.347656 --> 10667.364258). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11914.03 .. NELBO:
11914.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5306.81 .. NELBO: 5306.83
*****
*****
Validation loss decreased (10667.364258 --> 10613.654297). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11826.63 .. NELBO:
11826.66
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5301.23 .. NELBO: 5301.24
*****
*****
Validation loss decreased (10613.654297 --> 10602.491211). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.1 .. NELBO:
11784.13
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5317.74 .. NELBO: 5317.76
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.5 .. NELBO:
11783.53
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.77 .. NELBO: 5340.79
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.53 .. NELBO:
11795.56
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.16 .. NELBO: 5353.18
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.36 .. NELBO:
11794.39
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.39 .. NELBO: 5352.41
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.36 .. NELBO:
11781.39
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.48 .. NELBO: 5345.5
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05607560215661084, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=68, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=68, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=68, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 80.46 .. Rec_loss: 12263.94 .. NELBO:
12344.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.83 .. Rec_loss: 5443.88 .. NELBO: 5451.71
*****
*****
Validation loss decreased (inf --> 10903.422852). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.47 .. Rec_loss: 12248.15 .. NELBO:
12256.62

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*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5432.1 .. NELBO: 5432.51
*****
*****
Validation loss decreased (10903.422852 --> 10865.040039). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12209.01 .. NELBO:
12209.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.39 .. NELBO: 5409.46
*****
*****
Validation loss decreased (10865.040039 --> 10818.916016). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12139.47 .. NELBO:
12139.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.02 .. NELBO: 5377.04
*****
*****
Validation loss decreased (10818.916016 --> 10754.078125). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12043.26 .. NELBO:
12043.3
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.72 .. NELBO: 5340.74
*****
*****
Validation loss decreased (10754.078125 --> 10681.475586). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11936.21 .. NELBO:
11936.24

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.08 .. NELBO: 5311.09
*****
*****
Validation loss decreased (10681.475586 --> 10622.189453). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11841.94 .. NELBO:
11841.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.41 .. NELBO: 5300.42
*****
*****
Validation loss decreased (10622.189453 --> 10600.848633). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.2 .. NELBO:
11788.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.99 .. NELBO: 5313.01
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.96 .. NELBO:
11780.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.45 .. NELBO: 5336.47
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.69 .. NELBO:
11793.72

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.99 .. NELBO: 5352.01
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.51 .. NELBO:
11796.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.64 .. NELBO: 5353.66
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.63 .. NELBO:
11784.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.46 .. NELBO: 5347.47
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 104
model: ETM(
  (t_drop): Dropout(p=0.05688945796635633, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)

```

```

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 76.68 .. Rec_loss: 12264.26 .. NELBO:
12340.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.52 .. Rec_loss: 5444.13 .. NELBO: 5451.65
*****
*****
Validation loss decreased (inf --> 10903.298828). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.2 .. Rec_loss: 12248.71 .. NELBO:
12256.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5432.59 .. NELBO: 5432.99
*****
*****
Validation loss decreased (10903.298828 --> 10865.973633). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12211.04 .. NELBO:
12211.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5410.21 .. NELBO: 5410.27
*****
*****
Validation loss decreased (10865.973633 --> 10820.536133). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12141.96 .. NELBO:
12142.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.17 .. NELBO: 5378.19
*****
*****
Validation loss decreased (10820.536133 --> 10756.372070). Saving model ...

```

```
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12047.4 .. NELBO:
12047.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.91 .. NELBO: 5341.93
*****
*****
Validation loss decreased (10756.372070 --> 10683.842773). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11939.52 .. NELBO:
11939.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.79 .. NELBO: 5311.8
*****
*****
Validation loss decreased (10683.842773 --> 10623.614258). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.24 .. NELBO:
11845.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.18 .. NELBO: 5300.19
*****
*****
Validation loss decreased (10623.614258 --> 10600.385742). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.86 .. NELBO:
11789.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.93 .. NELBO: 5311.94
*****
*****
EarlyStopping counter: 1 out of 5
```

```

*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.54 .. NELBO:
11780.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.31 .. NELBO: 5335.33
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.84 .. NELBO:
11792.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.33 .. NELBO: 5351.35
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.89 .. NELBO:
11795.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.52 .. NELBO: 5353.53
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.93 .. NELBO:
11784.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.6 .. NELBO: 5347.61
*****
*****
EarlyStopping counter: 5 out of 5

```

Early stopping

```
model: ETM(
  (t_drop): Dropout(p=0.05688945796635633, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 75.32 .. Rec_loss: 12264.05 .. NELBO:
12339.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.05 .. Rec_loss: 5443.99 .. NELBO: 5451.04
*****
*****
Validation loss decreased (inf --> 10902.079102). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.55 .. Rec_loss: 12248.54 .. NELBO:
12256.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5432.26 .. NELBO: 5432.6
*****
*****
Validation loss decreased (10902.079102 --> 10865.203125). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 12210.49 .. NELBO:
12210.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5410.1 .. NELBO: 5410.16
```

```

*****
*****
Validation loss decreased (10865.203125 --> 10820.332031). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12142.17 .. NELBO:
12142.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.33 .. NELBO: 5378.35
*****
*****
Validation loss decreased (10820.332031 --> 10756.700195). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12048.94 .. NELBO:
12048.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.3 .. NELBO: 5342.32
*****
*****
Validation loss decreased (10756.700195 --> 10684.644531). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11942.08 .. NELBO:
11942.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.16 .. NELBO: 5312.18
*****
*****
Validation loss decreased (10684.644531 --> 10624.355469). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.73 .. NELBO:
11847.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.05 .. NELBO: 5300.07

```



```

*****
*****
Validation loss decreased (10624.355469 --> 10600.128906). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.26 .. NELBO:
11791.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.06 .. NELBO: 5311.08
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.62 .. NELBO:
11780.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.16 .. NELBO: 5334.18
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.69 .. NELBO:
11792.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.57 .. NELBO: 5350.59
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.88 .. NELBO:
11795.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.24 .. NELBO: 5353.26

```

```

*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.19 .. NELBO:
11785.23
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.58 .. NELBO: 5347.6
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05688945796635633, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 83.16 .. Rec_loss: 12263.95 .. NELBO:
12347.11
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.04 .. Rec_loss: 5443.58 .. NELBO: 5451.62
*****
*****
Validation loss decreased (inf --> 10903.253906). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.67 .. Rec_loss: 12247.12 .. NELBO:
12255.79
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5431.24 .. NELBO: 5431.64
*****
*****
Validation loss decreased (10903.253906 --> 10863.269531). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12206.36 .. NELBO:
12206.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.71 .. NELBO: 5407.77
*****
*****
Validation loss decreased (10863.269531 --> 10815.541992). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12134.27 .. NELBO:
12134.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.7 .. NELBO: 5374.72
*****
*****
Validation loss decreased (10815.541992 --> 10749.446289). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12036.52 .. NELBO:
12036.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.38 .. NELBO: 5338.4
*****
*****
Validation loss decreased (10749.446289 --> 10676.792969). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11928.94 .. NELBO:
11928.97
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.59 .. NELBO: 5309.61
*****
*****
Validation loss decreased (10676.792969 --> 10619.221680). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11837.31 .. NELBO:
11837.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.38 .. NELBO: 5300.4
*****
*****
Validation loss decreased (10619.221680 --> 10600.790039). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.87 .. NELBO:
11786.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.02 .. NELBO: 5314.04
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.82 .. NELBO:
11780.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.37 .. NELBO: 5337.39
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.11 .. NELBO:
11794.14
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.12 .. NELBO: 5352.14
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.94 .. NELBO:
11795.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.21 .. NELBO: 5353.23
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.04 .. NELBO:
11784.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.85 .. NELBO: 5346.87
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 105
model: ETM(
  (t_drop): Dropout(p=0.05598110384847087, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=77, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=77, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=77, bias=True)
)
*****
*****

```

```

Epoch---->1 .. LR: 0.005 .. KL_theta: 90.45 .. Rec_loss: 12264.4 .. NELBO:
12354.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.34 .. Rec_loss: 5444.29 .. NELBO: 5452.63
*****
*****
Validation loss decreased (inf --> 10905.254883). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.98 .. Rec_loss: 12250.15 .. NELBO:
12259.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5433.33 .. NELBO: 5433.77
*****
*****
Validation loss decreased (10905.254883 --> 10867.546875). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12213.72 .. NELBO:
12214.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5411.73 .. NELBO: 5411.81
*****
*****
Validation loss decreased (10867.546875 --> 10823.607422). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12146.74 .. NELBO:
12146.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.26 .. NELBO: 5380.29
*****
*****
Validation loss decreased (10823.607422 --> 10760.570312). Saving model ...
*****
*****

```

```

Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12052.95 .. NELBO:
12053.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.1 .. NELBO: 5344.12
*****
*****
Validation loss decreased (10760.570312 --> 10688.233398). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11946.5 .. NELBO:
11946.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.32 .. NELBO: 5313.34
*****
*****
Validation loss decreased (10688.233398 --> 10626.678711). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11850.48 .. NELBO:
11850.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.38 .. NELBO: 5300.4
*****
*****
Validation loss decreased (10626.678711 --> 10600.791016). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.01 .. NELBO:
11792.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.87 .. NELBO: 5310.89
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****

```

```

Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.57 .. NELBO:
11780.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.04 .. NELBO: 5334.06
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.27 .. NELBO:
11792.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.83 .. NELBO: 5350.85
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.48 .. NELBO:
11796.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.79 .. NELBO: 5353.81
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.83 .. NELBO:
11785.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.11 .. NELBO: 5348.13
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(

```



```

(t_drop): Dropout(p=0.05598110384847087, inplace=False)
(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=77, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=77, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=77, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.29 .. Rec_loss: 12264.21 .. NELBO:
12350.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.96 .. Rec_loss: 5443.87 .. NELBO: 5451.83
*****
*****
Validation loss decreased (inf --> 10903.663086). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.68 .. Rec_loss: 12247.83 .. NELBO:
12256.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5431.89 .. NELBO: 5432.36
*****
*****
Validation loss decreased (10903.663086 --> 10864.723633). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12208.46 .. NELBO:
12209.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.15 .. NELBO: 5409.23
*****
*****

```

```

Validation loss decreased (10864.723633 --> 10818.463867). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12138.91 .. NELBO:
12139.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.98 .. NELBO: 5377.01
*****
*****
Validation loss decreased (10818.463867 --> 10754.012695). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12043.23 .. NELBO:
12043.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.97 .. NELBO: 5340.99
*****
*****
Validation loss decreased (10754.012695 --> 10681.979492). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.16 .. NELBO:
11936.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.5 .. NELBO: 5311.52
*****
*****
Validation loss decreased (10681.979492 --> 10623.044922). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11843.58 .. NELBO:
11843.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.6 .. NELBO: 5300.62
*****
*****

```

```

Validation loss decreased (10623.044922 --> 10601.238281). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.42 .. NELBO:
11789.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.5 .. NELBO: 5312.52
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.01 .. NELBO:
11781.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.37 .. NELBO: 5335.39
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.8 .. NELBO:
11792.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.98 .. NELBO: 5351.0
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.14 .. NELBO:
11796.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.04 .. NELBO: 5353.06
*****
*****

```

```

EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.62 .. NELBO:
11784.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.15 .. NELBO: 5347.17
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05598110384847087, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=77, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=77, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=77, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 82.3 .. Rec_loss: 12264.33 .. NELBO:
12346.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.97 .. Rec_loss: 5444.02 .. NELBO: 5451.99
*****
*****
Validation loss decreased (inf --> 10903.996094). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.61 .. Rec_loss: 12248.3 .. NELBO:
12256.91
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5431.83 .. NELBO: 5432.22
*****
*****
Validation loss decreased (10903.996094 --> 10864.448242). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12208.85 .. NELBO:
12209.41
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.03 .. NELBO: 5409.1
*****
*****
Validation loss decreased (10864.448242 --> 10818.195312). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12139.47 .. NELBO:
12139.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.64 .. NELBO: 5376.66
*****
*****
Validation loss decreased (10818.195312 --> 10753.322266). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12044.07 .. NELBO:
12044.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.33 .. NELBO: 5340.35
*****
*****
Validation loss decreased (10753.322266 --> 10680.701172). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.6 .. NELBO:
11936.64
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.66 .. NELBO: 5310.68
*****
*****
Validation loss decreased (10680.701172 --> 10621.364258). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11843.23 .. NELBO:
11843.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.81 .. NELBO: 5299.83
*****
*****
Validation loss decreased (10621.364258 --> 10599.649414). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.62 .. NELBO:
11789.66
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.01 .. NELBO: 5312.03
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.36 .. NELBO:
11781.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.2 .. NELBO: 5335.22
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.67 .. NELBO:
11792.71
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.93 .. NELBO: 5350.95
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.62 .. NELBO:
11795.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.02 .. NELBO: 5353.04
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.1 .. NELBO:
11784.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.16 .. NELBO: 5347.18
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 106
model: ETM(
  (t_drop): Dropout(p=0.05633588589023194, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=93, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=93, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=93, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1266.51 .. Rec_loss: 12264.35 .. NELBO:
13530.86

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.61 .. Rec_loss: 5445.52 .. NELBO:
5469.13
*****
*****
Validation loss decreased (inf --> 10938.248047). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 27.3 .. Rec_loss: 12253.79 .. NELBO:
12281.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.5 .. Rec_loss: 5437.04 .. NELBO: 5441.54
*****
*****
Validation loss decreased (10938.248047 --> 10883.081055). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 8.97 .. Rec_loss: 12225.79 .. NELBO:
12234.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.58 .. Rec_loss: 5420.02 .. NELBO: 5423.6
*****
*****
Validation loss decreased (10883.081055 --> 10847.190430). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 6.68 .. Rec_loss: 12171.91 .. NELBO:
12178.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.13 .. Rec_loss: 5393.26 .. NELBO: 5395.39
*****
*****
Validation loss decreased (10847.190430 --> 10790.795898). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.99 .. Rec_loss: 12089.97 .. NELBO:

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```
12093.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 5359.42 .. NELBO: 5360.69
*****
*****
Validation loss decreased (10790.795898 --> 10721.391602). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.42 .. Rec_loss: 11988.44 .. NELBO:
11990.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 5325.74 .. NELBO: 5326.55
*****
*****
Validation loss decreased (10721.391602 --> 10653.083984). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.57 .. Rec_loss: 11886.52 .. NELBO:
11888.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 5303.64 .. NELBO: 5304.19
*****
*****
Validation loss decreased (10653.083984 --> 10608.368164). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 11809.24 .. NELBO:
11810.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5303.34 .. NELBO: 5303.68
*****
*****
Validation loss decreased (10608.368164 --> 10607.350586). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 11777.31 .. NELBO:
```

```
11777.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5322.8 .. NELB0: 5323.02
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11783.26 .. NELB0:
11783.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5345.06 .. NELB0: 5345.2
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 11795.51 .. NELB0:
11795.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5355.18 .. NELB0: 5355.26
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 11792.81 .. NELB0:
11792.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5352.95 .. NELB0: 5353.0
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11778.83 .. NELB0:
```

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11778.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5345.67 .. NELBO: 5345.7
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05633588589023194, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=93, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=93, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=93, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1094.94 .. Rec_loss: 12264.33 .. NELBO:
13359.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.95 .. Rec_loss: 5445.48 .. NELBO:
5469.43
*****
*****
Validation loss decreased (inf --> 10938.863281). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 27.69 .. Rec_loss: 12254.02 .. NELBO:
12281.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.74 .. Rec_loss: 5436.98 .. NELBO: 5440.72
*****
*****

```

```

Validation loss decreased (10938.863281 --> 10881.440430). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 7.75 .. Rec_loss: 12225.75 .. NELBO:
12233.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.3 .. Rec_loss: 5419.85 .. NELBO: 5423.15
*****
*****
Validation loss decreased (10881.440430 --> 10846.301758). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 6.49 .. Rec_loss: 12171.62 .. NELBO:
12178.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.47 .. Rec_loss: 5392.99 .. NELBO: 5395.46
*****
*****
Validation loss decreased (10846.301758 --> 10790.920898). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 4.82 .. Rec_loss: 12089.75 .. NELBO:
12094.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.73 .. Rec_loss: 5358.91 .. NELBO: 5360.64
*****
*****
Validation loss decreased (10790.920898 --> 10721.274414). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.41 .. Rec_loss: 11987.33 .. NELBO:
11990.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.19 .. Rec_loss: 5325.09 .. NELBO: 5326.28
*****
*****

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```

Validation loss decreased (10721.274414 --> 10652.569336). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 2.35 .. Rec_loss: 11884.6 .. NELBO:
11886.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 5303.3 .. NELBO: 5304.09
*****
*****
Validation loss decreased (10652.569336 --> 10608.193359). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.49 .. Rec_loss: 11808.01 .. NELBO:
11809.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5303.73 .. NELBO: 5304.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.92 .. Rec_loss: 11777.59 .. NELBO:
11778.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5323.75 .. NELBO: 5324.04
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 11784.14 .. NELBO:
11784.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5345.79 .. NELBO: 5345.95
*****
*****

```

```

EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 11796.53 .. NELBO:
11796.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5355.21 .. NELBO: 5355.29
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11792.71 .. NELBO:
11792.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5352.4 .. NELBO: 5352.44
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05633588589023194, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=93, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=93, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=93, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1328.61 .. Rec_loss: 12264.05 .. NELBO:
13592.66
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 27.36 .. Rec_loss: 5445.74 .. NELBO: 5473.1
*****
*****
Validation loss decreased (inf --> 10946.201172). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 33.54 .. Rec_loss: 12253.87 .. NELBO:
12287.41
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.23 .. Rec_loss: 5436.54 .. NELBO: 5443.77
*****
*****
Validation loss decreased (10946.201172 --> 10887.552734). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 15.18 .. Rec_loss: 12224.57 .. NELBO:
12239.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.13 .. Rec_loss: 5419.42 .. NELBO: 5425.55
*****
*****
Validation loss decreased (10887.552734 --> 10851.101562). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 11.24 .. Rec_loss: 12170.87 .. NELBO:
12182.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.77 .. Rec_loss: 5392.72 .. NELBO: 5396.49
*****
*****
Validation loss decreased (10851.101562 --> 10792.966797). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 6.95 .. Rec_loss: 12089.78 .. NELBO:
12096.73
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 2.28 .. Rec_loss: 5358.96 .. NELBO: 5361.24
*****
*****
Validation loss decreased (10792.966797 --> 10722.474609). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 4.23 .. Rec_loss: 11988.53 .. NELBO:
11992.76
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.36 .. Rec_loss: 5325.39 .. NELBO: 5326.75
*****
*****
Validation loss decreased (10722.474609 --> 10653.500000). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 2.54 .. Rec_loss: 11885.82 .. NELBO:
11888.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.8 .. Rec_loss: 5303.55 .. NELBO: 5304.35
*****
*****
Validation loss decreased (10653.500000 --> 10608.692383). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 1.48 .. Rec_loss: 11808.58 .. NELBO:
11810.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5303.62 .. NELBO: 5304.04
*****
*****
Validation loss decreased (10608.692383 --> 10608.087891). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.78 .. Rec_loss: 11777.76 .. NELBO:
11778.54
*****
*****
*****

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```
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5323.37 .. NELBO: 5323.61
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11783.94 .. NELBO:
11784.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5345.45 .. NELBO: 5345.58
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 11795.87 .. NELBO:
11796.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5355.05 .. NELBO: 5355.12
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11792.63 .. NELBO:
11792.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5352.3 .. NELBO: 5352.34
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11778.26 .. NELBO:
11778.33
*****
*****
*****
*****
```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.82 .. NELBO: 5344.84
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 107
model: ETM(
  (t_drop): Dropout(p=0.05662149916360489, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=100, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=100, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=100, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1086.97 .. Rec_loss: 12264.43 .. NELBO:
13351.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.14 .. Rec_loss: 5445.58 .. NELBO:
5463.72
*****
*****
Validation loss decreased (inf --> 10927.442383). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 19.4 .. Rec_loss: 12254.04 .. NELBO:
12273.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 5437.01 .. NELBO: 5437.73
*****
*****
Validation loss decreased (10927.442383 --> 10875.463867). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 12225.2 .. NELBO:

```

```
12226.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5419.71 .. NELBO: 5420.07
*****
*****
Validation loss decreased (10875.463867 --> 10840.140625). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12170.53 .. NELBO:
12171.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5392.65 .. NELBO: 5392.76
*****
*****
Validation loss decreased (10840.140625 --> 10785.507812). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 12088.08 .. NELBO:
12088.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5358.47 .. NELBO: 5358.52
*****
*****
Validation loss decreased (10785.507812 --> 10717.037109). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11986.08 .. NELBO:
11986.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5324.68 .. NELBO: 5324.72
*****
*****
Validation loss decreased (10717.037109 --> 10649.443359). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11882.86 .. NELBO:
```

```
11882.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5303.07 .. NELB0: 5303.13
*****
*****
Validation loss decreased (10649.443359 --> 10606.242188). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 11806.11 .. NELB0:
11806.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5303.9 .. NELB0: 5304.01
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 11776.64 .. NELB0:
11776.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5324.4 .. NELB0: 5324.46
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11784.75 .. NELB0:
11784.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.58 .. NELB0: 5346.61
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.38 .. NELB0:
```

```

11796.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.94 .. NELBO: 5355.97
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.09 .. NELBO:
11793.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.04 .. NELBO: 5353.07
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05662149916360489, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=100, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=100, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=100, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 994.96 .. Rec_loss: 12264.5 .. NELBO:
13259.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 19.93 .. Rec_loss: 5445.95 .. NELBO:
5465.88
*****
*****

```

```

Validation loss decreased (inf --> 10931.767578). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 21.52 .. Rec_loss: 12254.97 .. NELBO:
12276.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.97 .. Rec_loss: 5437.68 .. NELBO: 5438.65
*****
*****
Validation loss decreased (10931.767578 --> 10877.305664). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 1.57 .. Rec_loss: 12227.87 .. NELBO:
12229.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5421.27 .. NELBO: 5421.58
*****
*****
Validation loss decreased (10877.305664 --> 10843.146484). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 12175.62 .. NELBO:
12176.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5395.19 .. NELBO: 5395.28
*****
*****
Validation loss decreased (10843.146484 --> 10790.559570). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 12095.97 .. NELBO:
12096.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5361.71 .. NELBO: 5361.75
*****
*****

```

```

Validation loss decreased (10790.559570 --> 10723.516602). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11995.8 .. NELBO:
11995.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5327.72 .. NELBO: 5327.75
*****
*****
Validation loss decreased (10723.516602 --> 10655.498047). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11892.51 .. NELBO:
11892.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5304.56 .. NELBO: 5304.59
*****
*****
Validation loss decreased (10655.498047 --> 10609.180664). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11812.83 .. NELBO:
11812.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5302.97 .. NELBO: 5303.0
*****
*****
Validation loss decreased (10609.180664 --> 10605.995117). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11778.29 .. NELBO:
11778.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5321.91 .. NELBO: 5321.94
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11782.98 .. NELBO:
11783.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5344.71 .. NELBO: 5344.74
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11796.23 .. NELBO:
11796.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.56 .. NELBO: 5355.59
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11794.37 .. NELBO:
11794.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.54 .. NELBO: 5353.57
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11779.69 .. NELBO:
11779.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.15 .. NELBO: 5346.18
*****
*****

```



```

EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05662149916360489, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=100, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=100, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=100, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1528.74 .. Rec_loss: 12264.82 .. NELBO:
13793.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 27.83 .. Rec_loss: 5446.24 .. NELBO:
5474.07
*****
*****
Validation loss decreased (inf --> 10948.142578). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 35.64 .. Rec_loss: 12256.0 .. NELBO:
12291.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.7 .. Rec_loss: 5438.07 .. NELBO: 5447.77
*****
*****
Validation loss decreased (10948.142578 --> 10895.537109). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 19.07 .. Rec_loss: 12229.57 .. NELBO:
12248.64
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.76 .. Rec_loss: 5422.09 .. NELBO: 5428.85
*****
*****
Validation loss decreased (10895.537109 --> 10857.700195). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 11.97 .. Rec_loss: 12178.82 .. NELBO:
12190.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.38 .. Rec_loss: 5396.48 .. NELBO: 5399.86
*****
*****
Validation loss decreased (10857.700195 --> 10799.720703). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 6.11 .. Rec_loss: 12100.8 .. NELBO:
12106.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.72 .. Rec_loss: 5363.34 .. NELBO: 5365.06
*****
*****
Validation loss decreased (10799.720703 --> 10730.121094). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.05 .. Rec_loss: 12001.51 .. NELBO:
12004.56
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.85 .. Rec_loss: 5329.25 .. NELBO: 5330.1
*****
*****
Validation loss decreased (10730.121094 --> 10660.192383). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.5 .. Rec_loss: 11898.17 .. NELBO:
11899.67
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5305.17 .. NELBO: 5305.57
*****
*****
Validation loss decreased (10660.192383 --> 10611.139648). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 11816.66 .. NELBO:
11817.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5301.95 .. NELBO: 5302.12
*****
*****
Validation loss decreased (10611.139648 --> 10604.251953). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 11778.78 .. NELBO:
11779.07
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5319.7 .. NELBO: 5319.77
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11780.99 .. NELBO:
11781.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5342.78 .. NELBO: 5342.82
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11794.97 .. NELBO:
11795.04
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5354.81 .. NELBO: 5354.84
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11794.82 .. NELBO:
11794.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.67 .. NELBO: 5353.69
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11781.07 .. NELBO:
11781.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.51 .. NELBO: 5346.53
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 108
model: ETM(
  (t_drop): Dropout(p=0.05613088368051598, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=52, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 70.86 .. Rec_loss: 12263.98 .. NELBO:

```

12334.84

VALIDATION .. LR: 0.005 .. KL_theta: 6.85 .. Rec_loss: 5443.5 .. NELBO: 5450.35

Validation loss decreased (inf --> 10900.691406). Saving model ...

Epoch---->2 .. LR: 0.005 .. KL_theta: 7.42 .. Rec_loss: 12246.87 .. NELBO:
12254.29

VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5430.81 .. NELBO: 5431.25

Validation loss decreased (10900.691406 --> 10862.499023). Saving model ...

Epoch---->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12205.47 .. NELBO:
12206.12

VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5407.19 .. NELBO: 5407.27

Validation loss decreased (10862.499023 --> 10814.545898). Saving model ...

Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12133.62 .. NELBO:
12133.74

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.17 .. NELBO: 5374.19

Validation loss decreased (10814.545898 --> 10748.385742). Saving model ...

Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12036.06 .. NELBO:

```
12036.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.82 .. NELBO: 5337.84
*****
*****
Validation loss decreased (10748.385742 --> 10675.672852). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11929.03 .. NELBO:
11929.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.03 .. NELBO: 5309.04
*****
*****
Validation loss decreased (10675.672852 --> 10618.083008). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11837.23 .. NELBO:
11837.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.96 .. NELBO: 5299.97
*****
*****
Validation loss decreased (10618.083008 --> 10599.940430). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.09 .. NELBO:
11787.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.88 .. NELBO: 5313.89
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.49 .. NELBO:
```

```
11781.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.39 .. NELBO: 5337.4
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.95 .. NELBO:
11793.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.1 .. NELBO: 5352.11
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.43 .. NELBO:
11795.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.12 .. NELBO: 5353.13
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.71 .. NELBO:
11783.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.78 .. NELBO: 5346.79
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
    (t_drop): Dropout(p=0.05613088368051598, inplace=False)
```

```

(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=52, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 72.78 .. Rec_loss: 12263.78 .. NELBO:
12336.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.31 .. Rec_loss: 5443.61 .. NELBO: 5450.92
*****
*****
Validation loss decreased (inf --> 10901.851562). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.0 .. Rec_loss: 12247.81 .. NELBO:
12255.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 5432.46 .. NELBO: 5433.0
*****
*****
Validation loss decreased (10901.851562 --> 10865.991211). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 12210.44 .. NELBO:
12211.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5410.33 .. NELBO: 5410.43
*****
*****
Validation loss decreased (10865.991211 --> 10820.868164). Saving model ...

```



```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 12142.22 .. NELBO:
12142.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.52 .. NELBO: 5378.54
*****
*****
Validation loss decreased (10820.868164 --> 10757.093750). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12047.48 .. NELBO:
12047.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5342.43 .. NELBO: 5342.44
*****
*****
Validation loss decreased (10757.093750 --> 10684.894531). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11939.94 .. NELBO:
11939.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.28 .. NELBO: 5312.29
*****
*****
Validation loss decreased (10684.894531 --> 10624.577148). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11845.7 .. NELBO:
11845.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.36 .. NELBO: 5300.37
*****
*****
Validation loss decreased (10624.577148 --> 10600.750000). Saving model ...

```

```

*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11789.67 .. NELBO:
11789.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.72 .. NELBO: 5311.73
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11779.65 .. NELBO:
11779.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.04 .. NELBO: 5335.05
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11792.38 .. NELBO:
11792.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.51 .. NELBO: 5351.52
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11796.22 .. NELBO:
11796.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5354.09 .. NELBO: 5354.1
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11785.56 .. NELBO:
11785.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.17 .. NELBO: 5348.18
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05613088368051598, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=52, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 74.93 .. Rec_loss: 12264.02 .. NELBO:
12338.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.63 .. Rec_loss: 5443.72 .. NELBO: 5451.35
*****
*****
Validation loss decreased (inf --> 10902.692383). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.02 .. Rec_loss: 12248.26 .. NELBO:
12256.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5432.28 .. NELBO: 5432.67

```

```

*****
*****
Validation loss decreased (10902.692383 --> 10865.340820). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12210.99 .. NELBO:
12211.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5410.37 .. NELBO: 5410.46
*****
*****
Validation loss decreased (10865.340820 --> 10820.923828). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12143.24 .. NELBO:
12143.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.92 .. NELBO: 5378.94
*****
*****
Validation loss decreased (10820.923828 --> 10757.887695). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12049.84 .. NELBO:
12049.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5343.04 .. NELBO: 5343.05
*****
*****
Validation loss decreased (10757.887695 --> 10686.104492). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11943.52 .. NELBO:
11943.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.65 .. NELBO: 5312.66

```

```

*****
*****
Validation loss decreased (10686.104492 --> 10625.314453). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11848.16 .. NELBO:
11848.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.96 .. NELBO: 5299.97
*****
*****
Validation loss decreased (10625.314453 --> 10599.953125). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11790.61 .. NELBO:
11790.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.48 .. NELBO: 5310.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11779.28 .. NELBO:
11779.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5333.69 .. NELBO: 5333.7
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.02 .. NELBO:
11792.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5350.73 .. NELBO: 5350.74

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.72 .. NELBO:
11795.75
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.89 .. NELBO: 5353.9
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.61 .. NELBO:
11786.64
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.3 .. NELBO: 5348.31
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 109
model: ETM(
  (t_drop): Dropout(p=0.05661514302271627, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=52, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 71.76 .. Rec_loss: 12263.32 .. NELBO:
12335.08
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.05 .. Rec_loss: 5443.02 .. NELBO: 5450.07
*****
*****
Validation loss decreased (inf --> 10900.125000). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.63 .. Rec_loss: 12245.52 .. NELBO:
12253.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5430.37 .. NELBO: 5430.82
*****
*****
Validation loss decreased (10900.125000 --> 10861.622070). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12204.12 .. NELBO:
12204.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5406.67 .. NELBO: 5406.76
*****
*****
Validation loss decreased (10861.622070 --> 10813.522461). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12132.2 .. NELBO:
12132.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5373.64 .. NELBO: 5373.67
*****
*****
Validation loss decreased (10813.522461 --> 10747.330078). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12033.99 .. NELBO:
12034.04
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5337.43 .. NELBO: 5337.46
*****
*****
Validation loss decreased (10747.330078 --> 10674.917969). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11926.83 .. NELBO:
11926.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5308.99 .. NELBO: 5309.02
*****
*****
Validation loss decreased (10674.917969 --> 10618.043945). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11835.97 .. NELBO:
11836.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5300.24 .. NELBO: 5300.28
*****
*****
Validation loss decreased (10618.043945 --> 10600.577148). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11786.45 .. NELBO:
11786.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5314.19 .. NELBO: 5314.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11781.37 .. NELBO:
11781.49
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5337.44 .. NELBO: 5337.5
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11793.91 .. NELBO:
11794.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5351.99 .. NELBO: 5352.04
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11795.63 .. NELBO:
11795.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5353.0 .. NELBO: 5353.04
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11783.46 .. NELBO:
11783.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5346.71 .. NELBO: 5346.75
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05661514302271627, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)

```

```

(alphas): Linear(in_features=300, out_features=52, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 65.57 .. Rec_loss: 12263.76 .. NELBO:
12329.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.58 .. Rec_loss: 5443.54 .. NELBO: 5450.12
*****
*****
Validation loss decreased (inf --> 10900.239258). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 6.99 .. Rec_loss: 12247.1 .. NELBO:
12254.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5431.42 .. NELBO: 5431.81
*****
*****
Validation loss decreased (10900.239258 --> 10863.632812). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12207.31 .. NELBO:
12207.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.56 .. NELBO: 5408.64
*****
*****
Validation loss decreased (10863.632812 --> 10817.273438). Saving model ...
*****
*****

```

```

Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12137.5 .. NELBO:
12137.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.34 .. NELBO: 5376.36
*****
*****
Validation loss decreased (10817.273438 --> 10752.720703). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12040.89 .. NELBO:
12040.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5340.47 .. NELBO: 5340.48
*****
*****
Validation loss decreased (10752.720703 --> 10680.958984). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11934.69 .. NELBO:
11934.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.16 .. NELBO: 5311.17
*****
*****
Validation loss decreased (10680.958984 --> 10622.350586). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11842.12 .. NELBO:
11842.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.39 .. NELBO: 5300.4
*****
*****
Validation loss decreased (10622.350586 --> 10600.810547). Saving model ...
*****
*****

```

```

Epoch----->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11788.21 .. NELBO:
11788.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.48 .. NELBO: 5312.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11780.8 .. NELBO:
11780.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.62 .. NELBO: 5335.63
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.53 .. NELBO:
11792.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.41 .. NELBO: 5351.42
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.92 .. NELBO:
11795.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.48 .. NELBO: 5353.49
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****

```

```

Epoch----->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11785.0 .. NELBO:
11785.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.49 .. NELBO: 5347.5
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05661514302271627, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=52, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 72.96 .. Rec_loss: 12263.42 .. NELBO:
12336.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.02 .. Rec_loss: 5442.91 .. NELBO: 5449.93
*****
*****
Validation loss decreased (inf --> 10899.855469). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 7.52 .. Rec_loss: 12245.38 .. NELBO:
12252.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5430.16 .. NELBO: 5430.56
*****
*****

```

```
Validation loss decreased (10899.855469 --> 10861.111328). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12203.59 .. NELBO:
12204.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5406.21 .. NELBO: 5406.28
*****
*****
Validation loss decreased (10861.111328 --> 10812.555664). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12130.3 .. NELBO:
12130.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5372.87 .. NELBO: 5372.89
*****
*****
Validation loss decreased (10812.555664 --> 10745.771484). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12031.69 .. NELBO:
12031.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.48 .. NELBO: 5336.49
*****
*****
Validation loss decreased (10745.771484 --> 10672.990234). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11923.43 .. NELBO:
11923.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5308.24 .. NELBO: 5308.25
*****
*****
```

```

Validation loss decreased (10672.990234 --> 10616.509766). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11832.74 .. NELBO:
11832.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.27 .. NELBO: 5300.28
*****
*****
Validation loss decreased (10616.509766 --> 10600.568359). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11784.92 .. NELBO:
11784.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5315.16 .. NELBO: 5315.17
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.74 .. NELBO:
11781.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.69 .. NELBO: 5338.7
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.52 .. NELBO:
11794.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.71 .. NELBO: 5352.72
*****
*****

```

```

EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.62 .. NELBO:
11795.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.11 .. NELBO: 5353.12
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.68 .. NELBO:
11782.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.55 .. NELBO: 5346.56
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 110
model: ETM(
  (t_drop): Dropout(p=0.05623698083772616, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 12263.6 .. NELBO:
12263.87
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.13 .. Rec_loss: 5442.78 .. NELBO: 5444.91
*****
*****
Validation loss decreased (inf --> 10889.830078). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 2.33 .. Rec_loss: 12242.13 .. NELBO:
12244.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5426.47 .. NELBO: 5426.51
*****
*****
Validation loss decreased (10889.830078 --> 10853.028320). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 12190.21 .. NELBO:
12190.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5398.39 .. NELBO: 5398.69
*****
*****
Validation loss decreased (10853.028320 --> 10797.387695). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 12106.15 .. NELBO:
12106.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.2 .. Rec_loss: 5362.05 .. NELBO: 5363.25
*****
*****
Validation loss decreased (10797.387695 --> 10726.510742). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.07 .. Rec_loss: 11998.9 .. NELBO:
12001.97
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 5327.27 .. NELBO: 5327.86
*****
*****
Validation loss decreased (10726.510742 --> 10655.724609). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.33 .. Rec_loss: 11895.61 .. NELBO:
11896.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.19 .. Rec_loss: 5303.96 .. NELBO: 5305.15
*****
*****
Validation loss decreased (10655.724609 --> 10610.287109). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.52 .. Rec_loss: 11815.83 .. NELBO:
11817.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5303.27 .. NELBO: 5303.35
*****
*****
Validation loss decreased (10610.287109 --> 10606.692383). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11782.94 .. NELBO:
11783.39
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5321.49 .. NELBO: 5321.7
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 11785.49 .. NELBO:
11785.98
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 5342.16 .. NELBO: 5342.4
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 11794.45 .. NELBO:
11794.95
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5350.67 .. NELBO: 5351.04
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.16 .. Rec_loss: 11788.64 .. NELBO:
11789.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 5346.78 .. NELBO: 5348.07
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.03 .. Rec_loss: 11773.15 .. NELBO:
11776.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.44 .. Rec_loss: 5339.88 .. NELBO: 5341.32
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05623698083772616, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=83, bias=False)
  (q_theta): Sequential(

```

```

(0): Linear(in_features=13198, out_features=800, bias=True)
(1): SELU()
(2): Linear(in_features=800, out_features=800, bias=True)
(3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 12263.67 .. NELBO:
12263.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.67 .. Rec_loss: 5442.66 .. NELBO: 5444.33
*****
*****
Validation loss decreased (inf --> 10888.669922). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.94 .. Rec_loss: 12241.94 .. NELBO:
12243.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5426.12 .. NELBO: 5426.15
*****
*****
Validation loss decreased (10888.669922 --> 10852.305664). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12189.41 .. NELBO:
12189.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5397.8 .. NELBO: 5398.07
*****
*****
Validation loss decreased (10852.305664 --> 10796.137695). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 12104.48 .. NELBO:
12104.9

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 5361.41 .. NELBO: 5362.07
*****
*****
Validation loss decreased (10796.137695 --> 10724.151367). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.13 .. Rec_loss: 11997.23 .. NELBO:
12000.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5325.89 .. NELBO: 5326.4
*****
*****
Validation loss decreased (10724.151367 --> 10652.795898). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 11893.75 .. NELBO:
11894.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5303.35 .. NELBO: 5303.45
*****
*****
Validation loss decreased (10652.795898 --> 10606.889648). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 11815.09 .. NELBO:
11815.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5303.18 .. NELBO: 5303.51
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11782.71 .. NELBO:
11783.1

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5322.12 .. NELBO: 5322.2
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 11786.34 .. NELBO:
11786.62
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5342.56 .. NELBO: 5342.99
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 11794.5 .. NELBO:
11795.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 5350.67 .. NELBO: 5351.39
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.23 .. Rec_loss: 11788.19 .. NELBO:
11789.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.31 .. Rec_loss: 5347.13 .. NELBO: 5348.44
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05623698083772616, inplace=False)
  (theta_act): SELU()

```

```

(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=83, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): SELU()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=83, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=83, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 12263.79 .. NELBO:
12264.11
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 5443.06 .. NELBO: 5444.15
*****
*****
Validation loss decreased (inf --> 10888.291016). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.46 .. Rec_loss: 12243.51 .. NELBO:
12244.97
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5427.54 .. NELBO: 5427.55
*****
*****
Validation loss decreased (10888.291016 --> 10855.099609). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 12194.01 .. NELBO:
12194.45
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5400.42 .. NELBO: 5400.76
*****
*****
Validation loss decreased (10855.099609 --> 10801.516602). Saving model ...
*****

```

```

*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 12111.65 .. NELBO:
12112.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.32 .. Rec_loss: 5364.56 .. NELBO: 5365.88
*****
*****
Validation loss decreased (10801.516602 --> 10731.752930). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.75 .. Rec_loss: 12006.37 .. NELBO:
12009.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.71 .. Rec_loss: 5328.68 .. NELBO: 5330.39
*****
*****
Validation loss decreased (10731.752930 --> 10660.781250). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.63 .. Rec_loss: 11899.8 .. NELBO:
11902.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.41 .. Rec_loss: 5304.79 .. NELBO: 5306.2
*****
*****
Validation loss decreased (10660.781250 --> 10612.410156). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.21 .. Rec_loss: 11817.79 .. NELBO:
11822.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.89 .. Rec_loss: 5301.83 .. NELBO: 5302.72
*****
*****
Validation loss decreased (10612.410156 --> 10605.439453). Saving model ...
*****

```



```

*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 11783.63 .. NELBO:
11785.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5318.5 .. NELBO: 5318.64
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 11783.28 .. NELBO:
11783.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5339.02 .. NELBO: 5339.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 11791.79 .. NELBO:
11792.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.78 .. Rec_loss: 5347.88 .. NELBO: 5348.66
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.8 .. Rec_loss: 11786.06 .. NELBO:
11787.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.25 .. Rec_loss: 5345.39 .. NELBO: 5346.64
*****
*****
EarlyStopping counter: 4 out of 5
*****

```

```

*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.58 .. Rec_loss: 11772.78 .. NELBO:
11775.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.38 .. Rec_loss: 5338.86 .. NELBO: 5340.24
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 111
model: ETM(
  (t_drop): Dropout(p=0.05649356768787501, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 64.13 .. Rec_loss: 12264.11 .. NELBO:
12328.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.79 .. Rec_loss: 5443.75 .. NELBO: 5450.54
*****
*****
Validation loss decreased (inf --> 10901.072266). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.36 .. Rec_loss: 12247.61 .. NELBO:
12254.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5431.3 .. NELBO: 5431.6

```

```

*****
*****
Validation loss decreased (10901.072266 --> 10863.196289). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 12206.64 .. NELBO:
12207.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5407.87 .. NELBO: 5407.92
*****
*****
Validation loss decreased (10863.196289 --> 10815.843750). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 12134.51 .. NELBO:
12134.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.01 .. NELBO: 5375.03
*****
*****
Validation loss decreased (10815.843750 --> 10750.066406). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12037.54 .. NELBO:
12037.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.81 .. NELBO: 5338.82
*****
*****
Validation loss decreased (10750.066406 --> 10677.647461). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11930.21 .. NELBO:
11930.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.02 .. NELBO: 5310.03

```

```

*****
*****
Validation loss decreased (10677.647461 --> 10620.078125). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.8 .. NELBO:
11838.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.63 .. NELBO: 5300.64
*****
*****
Validation loss decreased (10620.078125 --> 10601.280273). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.38 .. NELBO:
11787.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.95 .. NELBO: 5313.96
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.37 .. NELBO:
11781.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.07 .. NELBO: 5337.09
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.57 .. NELBO:
11793.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.8 .. NELBO: 5351.82

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.7 .. NELBO:
11795.73
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.02 .. NELBO: 5353.03
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.85 .. NELBO:
11783.88
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.78 .. NELBO: 5346.79
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05649356768787501, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 80.12 .. Rec_loss: 12264.66 .. NELBO:
12344.78
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.87 .. Rec_loss: 5444.63 .. NELBO: 5452.5
*****
*****
Validation loss decreased (inf --> 10904.987305). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.43 .. Rec_loss: 12250.48 .. NELBO:
12258.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5433.45 .. NELBO: 5433.86
*****
*****
Validation loss decreased (10904.987305 --> 10867.721680). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12213.6 .. NELBO:
12214.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5411.61 .. NELBO: 5411.67
*****
*****
Validation loss decreased (10867.721680 --> 10823.353516). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12145.79 .. NELBO:
12145.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.79 .. NELBO: 5379.81
*****
*****
Validation loss decreased (10823.353516 --> 10759.619141). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12051.15 .. NELBO:
12051.19
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5343.34 .. NELBO: 5343.35
*****
*****
Validation loss decreased (10759.619141 --> 10686.712891). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11943.74 .. NELBO:
11943.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.64 .. NELBO: 5312.65
*****
*****
Validation loss decreased (10686.712891 --> 10625.304688). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.82 .. NELBO:
11847.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.2 .. NELBO: 5300.21
*****
*****
Validation loss decreased (10625.304688 --> 10600.432617). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.33 .. NELBO:
11790.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.35 .. NELBO: 5311.37
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.66 .. NELBO:
11779.69
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.86 .. NELBO: 5334.88
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.06 .. NELBO:
11792.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.48 .. NELBO: 5351.5
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.45 .. NELBO:
11796.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.08 .. NELBO: 5354.1
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.8 .. NELBO:
11785.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.2 .. NELBO: 5348.22
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05649356768787501, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)

```



```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 77.14 .. Rec_loss: 12263.9 .. NELB0:
12341.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.23 .. Rec_loss: 5443.7 .. NELB0: 5450.93
*****
*****
Validation loss decreased (inf --> 10901.864258). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.93 .. Rec_loss: 12247.68 .. NELB0:
12255.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5431.67 .. NELB0: 5432.06
*****
*****
Validation loss decreased (10901.864258 --> 10864.106445). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12208.03 .. NELB0:
12208.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5408.57 .. NELB0: 5408.63
*****
*****
Validation loss decreased (10864.106445 --> 10817.264648). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12136.94 .. NELB0:

```

```
12137.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.81 .. NELBO: 5375.83
*****
*****
Validation loss decreased (10817.264648 --> 10751.660156). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12039.84 .. NELBO:
12039.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5339.37 .. NELBO: 5339.38
*****
*****
Validation loss decreased (10751.660156 --> 10678.763672). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11932.07 .. NELBO:
11932.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.2 .. NELBO: 5310.21
*****
*****
Validation loss decreased (10678.763672 --> 10620.424805). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.25 .. NELBO:
11839.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.57 .. NELBO: 5300.58
*****
*****
Validation loss decreased (10620.424805 --> 10601.159180). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.97 .. NELBO:
```

```
11788.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5314.0 .. NELBO: 5314.01
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.85 .. NELBO:
11781.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.26 .. NELBO: 5337.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.2 .. NELBO:
11794.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.94 .. NELBO: 5351.95
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.99 .. NELBO:
11796.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.93 .. NELBO: 5352.94
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.98 .. NELBO:
```

```

11783.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.6 .. NELBO: 5346.61
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 112
model: ETM(
  (t_drop): Dropout(p=0.05606225913573055, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=77, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=77, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=77, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 84.03 .. Rec_loss: 12264.55 .. NELBO:
12348.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.36 .. Rec_loss: 5444.41 .. NELBO: 5452.77
*****
*****
Validation loss decreased (inf --> 10905.525391). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.05 .. Rec_loss: 12249.54 .. NELBO:
12258.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.59 .. NELBO: 5433.04
*****
*****

```

```

Validation loss decreased (10905.525391 --> 10866.075195). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12211.4 .. NELBO:
12212.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.39 .. NELBO: 5410.47
*****
*****
Validation loss decreased (10866.075195 --> 10820.929688). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12143.55 .. NELBO:
12143.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.35 .. NELBO: 5378.38
*****
*****
Validation loss decreased (10820.929688 --> 10756.759766). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12048.71 .. NELBO:
12048.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.05 .. NELBO: 5342.07
*****
*****
Validation loss decreased (10756.759766 --> 10684.135742). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11940.57 .. NELBO:
11940.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.89 .. NELBO: 5311.91
*****
*****

```

```

Validation loss decreased (10684.135742 --> 10623.807617). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.12 .. NELBO:
11847.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.07 .. NELBO: 5300.09
*****
*****
Validation loss decreased (10623.807617 --> 10600.167969). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.1 .. NELBO:
11791.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.38 .. NELBO: 5311.4
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.74 .. NELBO:
11780.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.4 .. NELBO: 5334.42
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.65 .. NELBO:
11792.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.49 .. NELBO: 5350.51
*****
*****

```

```

EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.7 .. NELBO:
11795.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.91 .. NELBO: 5352.93
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.05 .. NELBO:
11785.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.15 .. NELBO: 5347.17
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05606225913573055, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=77, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=77, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=77, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 83.86 .. Rec_loss: 12264.07 .. NELBO:
12347.93
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 7.94 .. Rec_loss: 5443.77 .. NELBO: 5451.71
*****
*****
Validation loss decreased (inf --> 10903.423828). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.59 .. Rec_loss: 12247.46 .. NELBO:
12256.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5431.36 .. NELBO: 5431.76
*****
*****
Validation loss decreased (10903.423828 --> 10863.517578). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12206.69 .. NELBO:
12207.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.92 .. NELBO: 5407.99
*****
*****
Validation loss decreased (10863.517578 --> 10815.967773). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12135.22 .. NELBO:
12135.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.93 .. NELBO: 5374.95
*****
*****
Validation loss decreased (10815.967773 --> 10749.895508). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12038.04 .. NELBO:
12038.08
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.54 .. NELBO: 5338.56
*****
*****
Validation loss decreased (10749.895508 --> 10677.115234). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11929.34 .. NELBO:
11929.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.71 .. NELBO: 5309.72
*****
*****
Validation loss decreased (10677.115234 --> 10619.442383). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.15 .. NELBO:
11838.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.45 .. NELBO: 5300.46
*****
*****
Validation loss decreased (10619.442383 --> 10600.922852). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.25 .. NELBO:
11787.28
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5314.05 .. NELBO: 5314.06
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.09 .. NELBO:
11782.12
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.21 .. NELBO: 5337.22
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.6 .. NELBO:
11793.63
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.79 .. NELBO: 5351.8
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.9 .. NELBO:
11795.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.78 .. NELBO: 5352.79
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.51 .. NELBO:
11783.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.45 .. NELBO: 5346.46
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05606225913573055, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=77, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)

```

```

    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=77, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=77, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.46 .. Rec_loss: 12264.15 .. NELBO:
12343.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.26 .. Rec_loss: 5443.71 .. NELBO: 5450.97
*****
*****
Validation loss decreased (inf --> 10901.930664). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.95 .. Rec_loss: 12247.75 .. NELBO:
12255.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5431.06 .. NELBO: 5431.5
*****
*****
Validation loss decreased (10901.930664 --> 10862.997070). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12206.26 .. NELBO:
12206.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.3 .. NELBO: 5407.37
*****
*****
Validation loss decreased (10862.997070 --> 10814.755859). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12133.64 .. NELBO:
12133.76
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5374.03 .. NELBO: 5374.06
*****
*****
Validation loss decreased (10814.755859 --> 10748.110352). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12035.45 .. NELBO:
12035.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.55 .. NELBO: 5337.57
*****
*****
Validation loss decreased (10748.110352 --> 10675.135742). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11928.05 .. NELBO:
11928.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.94 .. NELBO: 5308.96
*****
*****
Validation loss decreased (10675.135742 --> 10617.924805). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11836.52 .. NELBO:
11836.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.28 .. NELBO: 5300.3
*****
*****
Validation loss decreased (10617.924805 --> 10600.607422). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.18 .. NELBO:
11787.22
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.47 .. NELBO: 5314.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.12 .. NELBO:
11782.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.75 .. NELBO: 5337.77
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.61 .. NELBO:
11794.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.99 .. NELBO: 5352.01
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.41 .. NELBO:
11795.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.76 .. NELBO: 5352.78
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.9 .. NELBO:
11782.94
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.44 .. NELBO: 5346.46
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 113
model: ETM(
  (t_drop): Dropout(p=0.05614029990687932, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 97.43 .. Rec_loss: 12264.47 .. NELBO:
12361.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.68 .. Rec_loss: 5444.69 .. NELBO: 5453.37
*****
*****
Validation loss decreased (inf --> 10906.754883). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.43 .. Rec_loss: 12250.64 .. NELBO:
12260.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 5433.67 .. NELBO: 5434.24
*****
*****
Validation loss decreased (10906.754883 --> 10868.478516). Saving model ...
*****

```

```

*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 12214.62 .. NELBO:
12215.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5412.42 .. NELBO: 5412.51
*****
*****
Validation loss decreased (10868.478516 --> 10825.036133). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12149.05 .. NELBO:
12149.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5381.28 .. NELBO: 5381.31
*****
*****
Validation loss decreased (10825.036133 --> 10762.620117). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12056.38 .. NELBO:
12056.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.18 .. NELBO: 5345.2
*****
*****
Validation loss decreased (10762.620117 --> 10690.394531). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11949.42 .. NELBO:
11949.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.98 .. NELBO: 5314.0
*****
*****
Validation loss decreased (10690.394531 --> 10627.990234). Saving model ...
*****

```

```

*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11852.42 .. NELBO:
11852.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.18 .. NELBO: 5300.2
*****
*****
Validation loss decreased (10627.990234 --> 10600.398438). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.6 .. NELBO:
11792.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.0 .. NELBO: 5310.02
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.37 .. NELBO:
11779.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.34 .. NELBO: 5333.36
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.82 .. NELBO:
11791.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.92 .. NELBO: 5350.94
*****
*****
EarlyStopping counter: 3 out of 5
*****

```



```

*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11797.27 .. NELBO:
11797.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.39 .. NELBO: 5354.41
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.91 .. NELBO:
11786.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.8 .. NELBO: 5348.82
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05614029990687932, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.84 .. Rec_loss: 12263.74 .. NELBO:
12343.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.19 .. Rec_loss: 5443.9 .. NELBO: 5452.09
*****

```

```

*****
Validation loss decreased (inf --> 10904.175781). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.9 .. Rec_loss: 12247.95 .. NELBO:
12256.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5431.82 .. NELBO: 5432.2
*****
*****
Validation loss decreased (10904.175781 --> 10864.408203). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12208.05 .. NELBO:
12208.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5408.88 .. NELBO: 5408.94
*****
*****
Validation loss decreased (10864.408203 --> 10817.874023). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12137.56 .. NELBO:
12137.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.34 .. NELBO: 5376.36
*****
*****
Validation loss decreased (10817.874023 --> 10752.724609). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12040.65 .. NELBO:
12040.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.04 .. NELBO: 5340.06
*****

```

```

*****
Validation loss decreased (10752.724609 --> 10680.125000). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11933.15 .. NELBO:
11933.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.72 .. NELBO: 5310.74
*****
*****
Validation loss decreased (10680.125000 --> 10621.480469). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11840.64 .. NELBO:
11840.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.59 .. NELBO: 5300.61
*****
*****
Validation loss decreased (10621.480469 --> 10601.216797). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.93 .. NELBO:
11787.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.55 .. NELBO: 5313.57
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.78 .. NELBO:
11780.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.9 .. NELBO: 5336.92
*****

```

```

*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.45 .. NELBO:
11793.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.1 .. NELBO: 5352.12
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.21 .. NELBO:
11796.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.49 .. NELBO: 5353.51
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.42 .. NELBO:
11784.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.15 .. NELBO: 5347.17
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05614029990687932, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)

```

```

    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 95.27 .. Rec_loss: 12264.21 .. NELBO:
12359.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.86 .. Rec_loss: 5444.09 .. NELBO: 5452.95
*****
*****
Validation loss decreased (inf --> 10905.894531). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.56 .. Rec_loss: 12249.21 .. NELBO:
12258.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5432.91 .. NELBO: 5433.4
*****
*****
Validation loss decreased (10905.894531 --> 10866.801758). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 12212.38 .. NELBO:
12213.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.89 .. NELBO: 5410.97
*****
*****
Validation loss decreased (10866.801758 --> 10821.924805). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12143.7 .. NELBO:
12143.81
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.17 .. NELBO: 5379.19
*****
*****
Validation loss decreased (10821.924805 --> 10758.385742). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12049.6 .. NELBO:
12049.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.03 .. NELBO: 5343.05
*****
*****
Validation loss decreased (10758.385742 --> 10686.090820). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11941.94 .. NELBO:
11941.98
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.67 .. NELBO: 5312.69
*****
*****
Validation loss decreased (10686.090820 --> 10625.375977). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.2 .. NELBO:
11847.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.43 .. NELBO: 5300.45
*****
*****
Validation loss decreased (10625.375977 --> 10600.894531). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.54 .. NELBO:
11790.58
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.48 .. NELBO: 5311.5
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.97 .. NELBO:
11780.01
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.67 .. NELBO: 5334.69
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.25 .. NELBO:
11792.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.2 .. NELBO: 5351.22
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.51 .. NELBO:
11796.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.88 .. NELBO: 5353.9
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.12 .. NELBO:
11786.15
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.08 .. NELBO: 5348.1
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 114
model: ETM(
  (t_drop): Dropout(p=0.055353314383848384, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=91, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=91, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=91, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 98.01 .. Rec_loss: 12264.11 .. NELBO:
12362.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.42 .. Rec_loss: 5444.23 .. NELBO: 5452.65
*****
*****
Validation loss decreased (inf --> 10905.296875). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.12 .. Rec_loss: 12249.29 .. NELBO:
12258.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5432.71 .. NELBO: 5433.22
*****
*****
Validation loss decreased (10905.296875 --> 10866.443359). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 12211.04 .. NELBO:

```



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12211.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.11 .. NELBO: 5410.19
*****
*****
Validation loss decreased (10866.443359 --> 10820.377930). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12141.05 .. NELBO:
12141.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.56 .. NELBO: 5377.58
*****
*****
Validation loss decreased (10820.377930 --> 10755.166016). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12044.11 .. NELBO:
12044.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.88 .. NELBO: 5340.9
*****
*****
Validation loss decreased (10755.166016 --> 10681.786133). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11935.2 .. NELBO:
11935.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.93 .. NELBO: 5310.95
*****
*****
Validation loss decreased (10681.786133 --> 10621.890625). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11840.95 .. NELBO:

```

```

11840.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.36 .. NELB0: 5300.38
*****
*****
Validation loss decreased (10621.890625 --> 10600.751953). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.51 .. NELB0:
11787.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.41 .. NELB0: 5313.43
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.88 .. NELB0:
11780.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.13 .. NELB0: 5337.15
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.96 .. NELB0:
11793.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.49 .. NELB0: 5352.51
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.41 .. NELB0:

```

```

11796.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.82 .. NELBO: 5353.84
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.31 .. NELBO:
11784.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.44 .. NELBO: 5347.46
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.055353314383848384, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=91, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=91, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=91, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 102.75 .. Rec_loss: 12263.85 .. NELBO:
12366.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.84 .. Rec_loss: 5443.85 .. NELBO: 5452.69
*****
*****
Validation loss decreased (inf --> 10905.388672). Saving model ...

```

```

*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 9.46 .. Rec_loss: 12247.91 .. NELBO:
12257.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 5431.68 .. NELBO: 5432.22
*****
*****
Validation loss decreased (10905.388672 --> 10864.438477). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 12208.16 .. NELBO:
12208.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5408.73 .. NELBO: 5408.83
*****
*****
Validation loss decreased (10864.438477 --> 10817.651367). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 12137.15 .. NELBO:
12137.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.24 .. NELBO: 5376.27
*****
*****
Validation loss decreased (10817.651367 --> 10752.539062). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12040.97 .. NELBO:
12041.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.11 .. NELBO: 5340.13
*****
*****
Validation loss decreased (10752.539062 --> 10680.250977). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11934.31 .. NELBO:
11934.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.87 .. NELBO: 5310.89
*****
*****
Validation loss decreased (10680.250977 --> 10621.782227). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.49 .. NELBO:
11841.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.53 .. NELBO: 5300.55
*****
*****
Validation loss decreased (10621.782227 --> 10601.099609). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.71 .. NELBO:
11788.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.96 .. NELBO: 5312.98
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.03 .. NELBO:
11781.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.91 .. NELBO: 5335.93
*****
*****
EarlyStopping counter: 2 out of 5

```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.93 .. NELBO:
11792.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.22 .. NELBO: 5351.24
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.42 .. NELBO:
11795.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.06 .. NELBO: 5353.08
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.51 .. NELBO:
11784.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.1 .. NELBO: 5347.12
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.055353314383848384, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=91, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
)

```

```

(mu_q_theta): Linear(in_features=800, out_features=91, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=91, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.61 .. Rec_loss: 12264.25 .. NELBO:
12352.86
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.96 .. Rec_loss: 5444.09 .. NELBO: 5452.05
*****
*****
Validation loss decreased (inf --> 10904.093750). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.63 .. Rec_loss: 12248.42 .. NELBO:
12257.05
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5431.79 .. NELBO: 5432.2
*****
*****
Validation loss decreased (10904.093750 --> 10864.401367). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12208.42 .. NELBO:
12209.01
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.76 .. NELBO: 5408.83
*****
*****
Validation loss decreased (10864.401367 --> 10817.643555). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12138.14 .. NELBO:
12138.24
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.15 .. NELBO: 5376.17

```

```

*****
*****
Validation loss decreased (10817.643555 --> 10752.348633). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12041.58 .. NELBO:
12041.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.86 .. NELBO: 5339.88
*****
*****
Validation loss decreased (10752.348633 --> 10679.757812). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11934.14 .. NELBO:
11934.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.57 .. NELBO: 5310.59
*****
*****
Validation loss decreased (10679.757812 --> 10621.168945). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.4 .. NELBO:
11841.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELBO: 5300.39
*****
*****
Validation loss decreased (10621.168945 --> 10600.785156). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.65 .. NELBO:
11788.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.11 .. NELBO: 5313.13

```



```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.58 .. NELBO:
11781.62
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.18 .. NELBO: 5336.2
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.17 .. NELBO:
11793.21
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.28 .. NELBO: 5351.3
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.02 .. NELBO:
11795.06
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.89 .. NELBO: 5352.91
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.82 .. NELBO:
11783.86
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.86 .. NELBO: 5346.88

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*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 115
model: ETM(
  (t_drop): Dropout(p=0.05579769193739372, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=51, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=51, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=51, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 62.16 .. Rec_loss: 12263.94 .. NELBO:
12326.1
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.54 .. Rec_loss: 5443.46 .. NELBO: 5450.0
*****
*****
Validation loss decreased (inf --> 10900.015625). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.07 .. Rec_loss: 12246.64 .. NELBO:
12253.71
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5431.01 .. NELBO: 5431.31
*****
*****
Validation loss decreased (10900.015625 --> 10862.625977). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 12205.76 .. NELBO:
12206.19
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5407.84 .. NELBO: 5407.89
*****
*****
Validation loss decreased (10862.625977 --> 10815.771484). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 12136.31 .. NELBO:
12136.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.38 .. NELBO: 5375.4
*****
*****
Validation loss decreased (10815.771484 --> 10750.783203). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12039.56 .. NELBO:
12039.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5339.4 .. NELBO: 5339.41
*****
*****
Validation loss decreased (10750.783203 --> 10678.829102). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11932.9 .. NELBO:
11932.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.39 .. NELBO: 5310.4
*****
*****
Validation loss decreased (10678.829102 --> 10620.797852). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11840.99 .. NELBO:
11841.01
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.24 .. NELBO: 5300.25
*****
*****
Validation loss decreased (10620.797852 --> 10600.502930). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.37 .. NELBO:
11788.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.88 .. NELBO: 5312.89
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.59 .. NELBO:
11780.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.1 .. NELBO: 5336.12
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.69 .. NELBO:
11792.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.57 .. NELBO: 5351.59
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.88 .. NELBO:
11795.91
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.29 .. NELBO: 5353.31
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.67 .. NELBO:
11784.7
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.11 .. NELBO: 5347.12
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05579769193739372, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=51, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=51, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=51, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 64.99 .. Rec_loss: 12264.08 .. NELBO:
12329.07
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.29 .. Rec_loss: 5443.75 .. NELBO: 5451.04
*****
*****
Validation loss decreased (inf --> 10902.090820). Saving model ...
*****
*****

```

```

Epoch---->2 .. LR: 0.005 .. KL_theta: 7.86 .. Rec_loss: 12248.62 .. NELBO:
12256.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5432.73 .. NELBO: 5433.11
*****
*****
Validation loss decreased (10902.090820 --> 10866.217773). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12212.07 .. NELBO:
12212.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5411.2 .. NELBO: 5411.28
*****
*****
Validation loss decreased (10866.217773 --> 10822.567383). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12146.51 .. NELBO:
12146.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5380.02 .. NELBO: 5380.04
*****
*****
Validation loss decreased (10822.567383 --> 10760.086914). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12053.91 .. NELBO:
12053.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5344.18 .. NELBO: 5344.19
*****
*****
Validation loss decreased (10760.086914 --> 10688.378906). Saving model ...
*****
*****

```

```

Epoch----->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11946.49 .. NELBO:
11946.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.47 .. NELBO: 5313.48
*****
*****
Validation loss decreased (10688.378906 --> 10626.967773). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11851.78 .. NELBO:
11851.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.06 .. NELBO: 5300.07
*****
*****
Validation loss decreased (10626.967773 --> 10600.148438). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11792.75 .. NELBO:
11792.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.84 .. NELBO: 5309.85
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11779.73 .. NELBO:
11779.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5332.89 .. NELBO: 5332.9
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

```

```

Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11791.38 .. NELBO:
11791.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5350.28 .. NELBO: 5350.29
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11796.85 .. NELBO:
11796.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.82 .. NELBO: 5353.83
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11785.34 .. NELBO:
11785.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.44 .. NELBO: 5348.45
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05579769193739372, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=51, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=51, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=51, bias=True)

```



```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 66.4 .. Rec_loss: 12264.22 .. NELBO:
12330.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.49 .. Rec_loss: 5443.55 .. NELBO: 5450.04
*****
*****
Validation loss decreased (inf --> 10900.064453). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 6.89 .. Rec_loss: 12247.38 .. NELBO:
12254.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5431.33 .. NELBO: 5431.68
*****
*****
Validation loss decreased (10900.064453 --> 10863.359375). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 12207.6 .. NELBO:
12208.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.31 .. NELBO: 5408.39
*****
*****
Validation loss decreased (10863.359375 --> 10816.764648). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12137.27 .. NELBO:
12137.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.63 .. NELBO: 5375.65
*****
*****

```

```

Validation loss decreased (10816.764648 --> 10751.312500). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12040.82 .. NELBO:
12040.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.24 .. NELBO: 5339.26
*****
*****
Validation loss decreased (10751.312500 --> 10678.504883). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11932.36 .. NELBO:
11932.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.87 .. NELBO: 5309.89
*****
*****
Validation loss decreased (10678.504883 --> 10619.783203). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11840.12 .. NELBO:
11840.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5299.82 .. NELBO: 5299.85
*****
*****
Validation loss decreased (10619.783203 --> 10599.708008). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11787.64 .. NELBO:
11787.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5312.99 .. NELBO: 5313.03
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11780.81 .. NELBO:
11780.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5336.52 .. NELBO: 5336.56
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11793.43 .. NELBO:
11793.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5351.82 .. NELBO: 5351.86
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11795.73 .. NELBO:
11795.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.35 .. NELBO: 5353.38
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11784.25 .. NELBO:
11784.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5347.19 .. NELBO: 5347.22
*****
*****

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```

EarlyStopping counter: 5 out of 5
Early stopping
Current call: 116
model: ETM(
  (t_drop): Dropout(p=0.06347318707003503, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 81.15 .. Rec_loss: 12264.05 .. NELBO:
12345.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.49 .. Rec_loss: 5443.89 .. NELBO: 5451.38
*****
*****
Validation loss decreased (inf --> 10902.766602). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.08 .. Rec_loss: 12247.65 .. NELBO:
12255.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5431.39 .. NELBO: 5431.81
*****
*****
Validation loss decreased (10902.766602 --> 10863.615234). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12207.33 .. NELBO:
12207.93
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.2 .. NELBO: 5408.27
*****
*****
Validation loss decreased (10863.615234 --> 10816.531250). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12136.15 .. NELBO:
12136.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.53 .. NELBO: 5375.55
*****
*****
Validation loss decreased (10816.531250 --> 10751.091797). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12040.0 .. NELBO:
12040.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5339.32 .. NELBO: 5339.33
*****
*****
Validation loss decreased (10751.091797 --> 10678.669922). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11932.24 .. NELBO:
11932.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.31 .. NELBO: 5310.32
*****
*****
Validation loss decreased (10678.669922 --> 10620.653320). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11840.69 .. NELBO:
11840.71
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.51 .. NELBO: 5300.52
*****
*****
Validation loss decreased (10620.653320 --> 10601.045898). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11788.67 .. NELBO:
11788.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.48 .. NELBO: 5313.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11781.59 .. NELBO:
11781.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.51 .. NELBO: 5336.52
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11793.85 .. NELBO:
11793.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.39 .. NELBO: 5351.4
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11795.32 .. NELBO:
11795.34
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.76 .. NELBO: 5352.77
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11783.8 .. NELBO:
11783.82
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.64 .. NELBO: 5346.65
*****
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06347318707003503, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 82.52 .. Rec_loss: 12263.49 .. NELBO:
12346.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.33 .. Rec_loss: 5443.25 .. NELBO: 5450.58
*****
*****
*****
Validation loss decreased (inf --> 10901.160156). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.96 .. Rec_loss: 12245.8 .. NELBO:
12253.76

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5430.45 .. NELBO: 5430.88
*****
*****
Validation loss decreased (10901.160156 --> 10861.761719). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12204.37 .. NELBO:
12204.99
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5406.3 .. NELBO: 5406.37
*****
*****
Validation loss decreased (10861.761719 --> 10812.751953). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12129.92 .. NELBO:
12130.03
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5372.77 .. NELBO: 5372.79
*****
*****
Validation loss decreased (10812.751953 --> 10745.586914). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12031.21 .. NELBO:
12031.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.4 .. NELBO: 5336.42
*****
*****
Validation loss decreased (10745.586914 --> 10672.835938). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11922.84 .. NELBO:
11922.87

```



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*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5308.39 .. NELBO: 5308.4
*****
*****
Validation loss decreased (10672.835938 --> 10616.810547). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11832.35 .. NELBO:
11832.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.67 .. NELBO: 5300.68
*****
*****
Validation loss decreased (10616.810547 --> 10601.363281). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.94 .. NELBO:
11784.97
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.56 .. NELBO: 5315.58
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.78 .. NELBO:
11781.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.9 .. NELBO: 5338.92
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.76 .. NELBO:
11794.79

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.73 .. NELBO: 5352.74
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.62 .. NELBO:
11795.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.02 .. NELBO: 5353.03
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.78 .. NELBO:
11782.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.39 .. NELBO: 5346.4
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06347318707003503, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****

```

```

*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 89.76 .. Rec_loss: 12264.31 .. NELBO:
12354.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.7 .. Rec_loss: 5444.22 .. NELBO: 5452.92
*****
*****
Validation loss decreased (inf --> 10905.851562). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.26 .. Rec_loss: 12249.64 .. NELBO:
12258.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5433.02 .. NELBO: 5433.43
*****
*****
Validation loss decreased (10905.851562 --> 10866.847656). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12212.68 .. NELBO:
12213.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.87 .. NELBO: 5410.95
*****
*****
Validation loss decreased (10866.847656 --> 10821.888672). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12144.41 .. NELBO:
12144.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.86 .. NELBO: 5378.89
*****
*****
Validation loss decreased (10821.888672 --> 10757.764648). Saving model ...
*****

```

```

*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12049.37 .. NELBO:
12049.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.43 .. NELBO: 5342.45
*****
*****
Validation loss decreased (10757.764648 --> 10684.903320). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11941.1 .. NELBO:
11941.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.01 .. NELBO: 5312.03
*****
*****
Validation loss decreased (10684.903320 --> 10624.056641). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.91 .. NELBO:
11845.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.11 .. NELBO: 5300.13
*****
*****
Validation loss decreased (10624.056641 --> 10600.262695). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.67 .. NELBO:
11789.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.73 .. NELBO: 5311.75
*****
*****
EarlyStopping counter: 1 out of 5
*****

```

```

*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.15 .. NELBO:
11780.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.24 .. NELBO: 5335.26
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.67 .. NELBO:
11792.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.64 .. NELBO: 5351.66
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.25 .. NELBO:
11796.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.05 .. NELBO: 5354.07
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.58 .. NELBO:
11785.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.09 .. NELBO: 5348.11
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping

```

```

Current call: 117
model: ETM(
  (t_drop): Dropout(p=0.056102620718480656, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=96, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=96, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=96, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 12263.7 .. NELBO:
12263.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.4 .. Rec_loss: 5443.01 .. NELBO: 5445.41
*****
*****
Validation loss decreased (inf --> 10890.832031). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 2.56 .. Rec_loss: 12243.1 .. NELBO:
12245.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5427.14 .. NELBO: 5427.17
*****
*****
Validation loss decreased (10890.832031 --> 10854.339844). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12192.4 .. NELBO:
12192.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5399.65 .. NELBO: 5399.8

```

```

*****
*****
Validation loss decreased (10854.339844 --> 10799.608398). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12109.34 .. NELBO:
12109.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.38 .. Rec_loss: 5363.48 .. NELBO: 5364.86
*****
*****
Validation loss decreased (10799.608398 --> 10729.728516). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.07 .. Rec_loss: 12003.71 .. NELBO:
12006.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.61 .. Rec_loss: 5328.68 .. NELBO: 5330.29
*****
*****
Validation loss decreased (10729.728516 --> 10660.583008). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.32 .. Rec_loss: 11899.53 .. NELBO:
11902.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.87 .. Rec_loss: 5304.63 .. NELBO: 5306.5
*****
*****
Validation loss decreased (10660.583008 --> 10612.985352). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 2.5 .. Rec_loss: 11818.97 .. NELBO:
11821.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5302.9 .. NELBO: 5303.02

```

```

*****
*****
Validation loss decreased (10612.985352 --> 10606.036133). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 11783.65 .. NELBO:
11783.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5320.49 .. NELBO: 5320.6
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11785.22 .. NELBO:
11785.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5341.4 .. NELBO: 5341.57
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 11794.1 .. NELBO:
11794.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5350.37 .. NELBO: 5350.82
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.54 .. Rec_loss: 11789.22 .. NELBO:
11790.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.52 .. Rec_loss: 5347.09 .. NELBO: 5348.61

```



```

*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 2.95 .. Rec_loss: 11773.98 .. NELBO:
11776.93
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.05 .. Rec_loss: 5341.06 .. NELBO: 5342.11
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.056102620718480656, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=96, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=96, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=96, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12263.96 .. NELBO:
12264.31
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.63 .. Rec_loss: 5443.43 .. NELBO: 5445.06
*****
*****
Validation loss decreased (inf --> 10890.123047). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.9 .. Rec_loss: 12244.66 .. NELBO:
12246.56
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5428.1 .. NELBO: 5428.12
*****
*****
Validation loss decreased (10890.123047 --> 10856.225586). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12195.44 .. NELBO:
12196.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5401.03 .. NELBO: 5401.25
*****
*****
Validation loss decreased (10856.225586 --> 10802.485352). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12114.08 .. NELBO:
12114.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.88 .. Rec_loss: 5365.35 .. NELBO: 5366.23
*****
*****
Validation loss decreased (10802.485352 --> 10732.474609). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.28 .. Rec_loss: 12008.98 .. NELBO:
12011.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5329.59 .. NELBO: 5329.93
*****
*****
Validation loss decreased (10732.474609 --> 10659.863281). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 11903.87 .. NELBO:
11904.28
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5305.21 .. NELBO: 5305.3
*****
*****
Validation loss decreased (10659.863281 --> 10610.604492). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 11821.4 .. NELBO:
11821.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5302.64 .. NELBO: 5302.89
*****
*****
Validation loss decreased (10610.604492 --> 10605.771484). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11784.39 .. NELBO:
11784.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5319.97 .. NELBO: 5320.34
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 11785.18 .. NELBO:
11785.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5341.35 .. NELBO: 5341.63
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 11794.55 .. NELBO:
11795.09
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.88 .. Rec_loss: 5350.4 .. NELBO: 5351.28
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.16 .. Rec_loss: 11789.09 .. NELBO:
11791.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.2 .. Rec_loss: 5347.17 .. NELBO: 5349.37
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 4.32 .. Rec_loss: 11772.87 .. NELBO:
11777.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.43 .. Rec_loss: 5340.45 .. NELBO: 5342.88
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.056102620718480656, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=96, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=96, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=96, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 12263.79 .. NELBO:

```

```
12264.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.35 .. Rec_loss: 5442.9 .. NELBO: 5445.25
*****
*****
Validation loss decreased (inf --> 10890.496094). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 2.55 .. Rec_loss: 12242.81 .. NELBO:
12245.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5426.79 .. NELBO: 5426.82
*****
*****
Validation loss decreased (10890.496094 --> 10853.633789). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12191.62 .. NELBO:
12192.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5399.19 .. NELBO: 5399.41
*****
*****
Validation loss decreased (10853.633789 --> 10798.817383). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12109.96 .. NELBO:
12110.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.92 .. Rec_loss: 5363.23 .. NELBO: 5364.15
*****
*****
Validation loss decreased (10798.817383 --> 10728.305664). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.99 .. Rec_loss: 12003.41 .. NELBO:
```

```
12007.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5328.03 .. NELBO: 5328.4
*****
*****
Validation loss decreased (10728.305664 --> 10656.804688). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 11900.93 .. NELBO:
11901.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 5304.28 .. NELBO: 5304.55
*****
*****
Validation loss decreased (10656.804688 --> 10609.097656). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 11819.92 .. NELBO:
11820.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5302.39 .. NELBO: 5302.69
*****
*****
Validation loss decreased (10609.097656 --> 10605.371094). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 11784.15 .. NELBO:
11784.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5320.07 .. NELBO: 5320.3
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 11785.59 .. NELBO:
```

```
11786.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5340.98 .. NELBO: 5341.21
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11794.4 .. NELBO:
11794.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5350.6 .. NELBO: 5350.94
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.83 .. Rec_loss: 11790.0 .. NELBO:
11790.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.93 .. Rec_loss: 5348.06 .. NELBO: 5348.99
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.85 .. Rec_loss: 11775.12 .. NELBO:
11776.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.95 .. Rec_loss: 5341.54 .. NELBO: 5342.49
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 118
model: ETM(
```

```

(t_drop): Dropout(p=0.0330027276630495, inplace=False)
(theta_act): SELU()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=57, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): SELU()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=57, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=57, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 12263.08 .. NELBO:
12263.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5441.95 .. NELBO: 5442.36
*****
*****
Validation loss decreased (inf --> 10884.728516). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.25 .. Rec_loss: 12239.54 .. NELBO:
12240.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5424.48 .. NELBO: 5424.5
*****
*****
Validation loss decreased (10884.728516 --> 10848.998047). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12184.56 .. NELBO:
12184.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5395.29 .. NELBO: 5395.45
*****
*****

```



```

Validation loss decreased (10848.998047 --> 10790.894531). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12096.68 .. NELBO:
12097.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.3 .. Rec_loss: 5357.78 .. NELBO: 5359.08
*****
*****
Validation loss decreased (10790.894531 --> 10718.172852). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.38 .. Rec_loss: 11986.35 .. NELBO:
11989.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.48 .. Rec_loss: 5322.84 .. NELBO: 5324.32
*****
*****
Validation loss decreased (10718.172852 --> 10648.649414). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.93 .. Rec_loss: 11883.63 .. NELBO:
11885.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5302.28 .. NELBO: 5302.76
*****
*****
Validation loss decreased (10648.649414 --> 10605.511719). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.9 .. Rec_loss: 11809.63 .. NELBO:
11810.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5303.87 .. NELBO: 5304.01
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 11780.94 .. NELBO:
11781.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5323.02 .. NELBO: 5323.43
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.9 .. Rec_loss: 11786.0 .. NELBO:
11786.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5342.29 .. NELBO: 5342.7
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.61 .. Rec_loss: 11791.55 .. NELBO:
11793.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.02 .. Rec_loss: 5344.41 .. NELBO: 5348.43
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 8.55 .. Rec_loss: 11776.88 .. NELBO:
11785.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.94 .. Rec_loss: 5341.87 .. NELBO: 5344.81
*****
*****

```

EarlyStopping counter: 5 out of 5

Early stopping

model: ETM(

(t_drop): Dropout(p=0.0330027276630495, inplace=False)

(theta_act): SELU()

(rho): Linear(in_features=300, out_features=13198, bias=False)

(alphas): Linear(in_features=300, out_features=57, bias=False)

(q_theta): Sequential(

(0): Linear(in_features=13198, out_features=800, bias=True)

(1): SELU()

(2): Linear(in_features=800, out_features=800, bias=True)

(3): SELU()

)

(mu_q_theta): Linear(in_features=800, out_features=57, bias=True)

(logsigma_q_theta): Linear(in_features=800, out_features=57, bias=True)

)

Epoch---->1 .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 12263.12 .. NELBO:
12263.42

VALIDATION .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 5441.92 .. NELBO: 5442.24

Validation loss decreased (inf --> 10884.476562). Saving model ...

Epoch---->2 .. LR: 0.005 .. KL_theta: 1.68 .. Rec_loss: 12239.65 .. NELBO:
12241.33

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5424.82 .. NELBO: 5424.84

Validation loss decreased (10884.476562 --> 10849.690430). Saving model ...

Epoch---->3 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12185.33 .. NELBO:
12185.42


```
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5396.52 .. NELBO: 5396.6
*****
*****
Validation loss decreased (10849.690430 --> 10793.193359). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 12100.57 .. NELBO:
12100.95
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.96 .. Rec_loss: 5360.12 .. NELBO: 5361.08
*****
*****
Validation loss decreased (10793.193359 --> 10722.166016). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 2.47 .. Rec_loss: 11993.48 .. NELBO:
11995.95
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 5325.26 .. NELBO: 5325.85
*****
*****
Validation loss decreased (10722.166016 --> 10651.704102). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 11890.54 .. NELBO:
11891.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5303.18 .. NELBO: 5303.53
*****
*****
Validation loss decreased (10651.704102 --> 10607.055664). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 11813.05 .. NELBO:
11813.86
*****
*****
*****
*****
```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5303.25 .. NELBO: 5303.38
*****
*****
Validation loss decreased (10607.055664 --> 10606.746094). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 11781.46 .. NELBO:
11781.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5322.11 .. NELBO: 5322.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 11786.0 .. NELBO:
11786.3
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5342.15 .. NELBO: 5342.46
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 1.31 .. Rec_loss: 11793.38 .. NELBO:
11794.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.35 .. Rec_loss: 5347.76 .. NELBO: 5350.11
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 4.91 .. Rec_loss: 11782.64 .. NELBO:
11787.55
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 4.19 .. Rec_loss: 5342.2 .. NELBO: 5346.39
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 7.77 .. Rec_loss: 11765.22 .. NELBO:
11772.99
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.56 .. Rec_loss: 5333.0 .. NELBO: 5337.56
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0330027276630495, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=57, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=57, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=57, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 12263.28 .. NELBO:
12263.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5442.1 .. NELBO: 5442.43
*****
*****
Validation loss decreased (inf --> 10884.856445). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 2.05 .. Rec_loss: 12240.02 .. NELBO:
12242.07
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5424.84 .. NELBO: 5424.87
*****
*****
Validation loss decreased (10884.856445 --> 10849.743164). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12185.33 .. NELBO:
12185.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5395.96 .. NELBO: 5396.04
*****
*****
Validation loss decreased (10849.743164 --> 10792.071289). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12098.51 .. NELBO:
12098.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 5358.9 .. NELBO: 5359.74
*****
*****
Validation loss decreased (10792.071289 --> 10719.490234). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.29 .. Rec_loss: 11989.59 .. NELBO:
11991.88
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 5323.89 .. NELBO: 5324.46
*****
*****
Validation loss decreased (10719.490234 --> 10648.904297). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 11886.31 .. NELBO:
11887.02
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5302.59 .. NELBO: 5302.96
*****
*****
Validation loss decreased (10648.904297 --> 10605.909180). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 11810.44 .. NELBO:
11811.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5303.98 .. NELBO: 5304.11
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11781.55 .. NELBO:
11782.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5323.52 .. NELBO: 5323.8
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 11786.65 .. NELBO:
11787.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5343.36 .. NELBO: 5343.58
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 11794.32 .. NELBO:
11794.96
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.46 .. Rec_loss: 5348.8 .. NELBO: 5350.26
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.61 .. Rec_loss: 11782.81 .. NELBO:
11787.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.93 .. Rec_loss: 5343.65 .. NELBO: 5346.58
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 119
model: ETM(
  (t_drop): Dropout(p=0.0517899986071239, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 92.44 .. Rec_loss: 12264.37 .. NELBO:
12356.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.49 .. Rec_loss: 5444.01 .. NELBO: 5452.5
*****
*****
Validation loss decreased (inf --> 10904.984375). Saving model ...
*****

```

```

*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.12 .. Rec_loss: 12248.56 .. NELBO:
12257.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5431.98 .. NELBO: 5432.42
*****
*****
Validation loss decreased (10904.984375 --> 10864.842773). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12208.6 .. NELBO:
12209.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.04 .. NELBO: 5409.12
*****
*****
Validation loss decreased (10864.842773 --> 10818.239258). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12138.5 .. NELBO:
12138.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.45 .. NELBO: 5376.48
*****
*****
Validation loss decreased (10818.239258 --> 10752.965820). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12042.24 .. NELBO:
12042.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.1 .. NELBO: 5340.12
*****
*****
Validation loss decreased (10752.965820 --> 10680.231445). Saving model ...
*****

```

```

*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11934.59 .. NELBO:
11934.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.62 .. NELBO: 5310.64
*****
*****
Validation loss decreased (10680.231445 --> 10621.270508). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.73 .. NELBO:
11841.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.24 .. NELBO: 5300.26
*****
*****
Validation loss decreased (10621.270508 --> 10600.518555). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.44 .. NELBO:
11788.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.02 .. NELBO: 5313.04
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.44 .. NELBO:
11781.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.32 .. NELBO: 5336.34
*****
*****
EarlyStopping counter: 2 out of 5
*****

```

```

*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.69 .. NELBO:
11793.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.59 .. NELBO: 5351.61
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.95 .. NELBO:
11795.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.15 .. NELBO: 5353.17
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.76 .. NELBO:
11783.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.01 .. NELBO: 5347.03
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05178999986071239, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)

```

```

(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 77.3 .. Rec_loss: 12264.13 .. NELBO:
12341.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.4 .. Rec_loss: 5443.95 .. NELBO: 5451.35
*****
*****
Validation loss decreased (inf --> 10902.690430). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.91 .. Rec_loss: 12248.57 .. NELBO:
12256.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 5431.87 .. NELBO: 5432.19
*****
*****
Validation loss decreased (10902.690430 --> 10864.374023). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 12208.81 .. NELBO:
12209.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.8 .. NELBO: 5408.87
*****
*****
Validation loss decreased (10864.374023 --> 10817.727539). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12138.11 .. NELBO:
12138.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.19 .. NELBO: 5376.22
*****
*****

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```

*****
Validation loss decreased (10817.727539 --> 10752.427734). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12041.99 .. NELBO:
12042.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.95 .. NELBO: 5339.97
*****
*****
Validation loss decreased (10752.427734 --> 10679.932617). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11934.74 .. NELBO:
11934.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.68 .. NELBO: 5310.7
*****
*****
Validation loss decreased (10679.932617 --> 10621.399414). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11842.2 .. NELBO:
11842.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.38 .. NELBO: 5300.4
*****
*****
Validation loss decreased (10621.399414 --> 10600.804688). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.26 .. NELBO:
11789.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.88 .. NELBO: 5312.9
*****

```

```

*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.66 .. NELBO:
11781.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.89 .. NELBO: 5335.91
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.13 .. NELBO:
11793.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.21 .. NELBO: 5351.23
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.12 .. NELBO:
11796.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.97 .. NELBO: 5352.99
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.29 .. NELBO:
11784.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.0 .. NELBO: 5347.02
*****

```

```

*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05178999986071239, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.72 .. Rec_loss: 12264.19 .. NELBO:
12352.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.93 .. Rec_loss: 5444.18 .. NELBO: 5452.11
*****
*****
Validation loss decreased (inf --> 10904.221680). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.66 .. Rec_loss: 12248.93 .. NELBO:
12257.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5432.18 .. NELBO: 5432.66
*****
*****
Validation loss decreased (10904.221680 --> 10865.315430). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 12209.74 .. NELBO:
12210.42
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.7 .. NELBO: 5409.78
*****
*****
Validation loss decreased (10865.315430 --> 10819.557617). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12140.68 .. NELBO:
12140.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.56 .. NELBO: 5377.59
*****
*****
Validation loss decreased (10819.557617 --> 10755.167969). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12045.53 .. NELBO:
12045.58
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.34 .. NELBO: 5341.36
*****
*****
Validation loss decreased (10755.167969 --> 10682.715820). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11938.44 .. NELBO:
11938.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.45 .. NELBO: 5311.47
*****
*****
Validation loss decreased (10682.715820 --> 10622.944336). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11844.53 .. NELBO:
11844.57
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.16 .. NELBO: 5300.18
*****
*****
Validation loss decreased (10622.944336 --> 10600.364258). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.69 .. NELBO:
11789.73
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.05 .. NELBO: 5312.07
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.0 .. NELBO:
11781.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.25 .. NELBO: 5335.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.7 .. NELBO:
11792.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.03 .. NELBO: 5351.05
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.65 .. NELBO:
11795.69
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.13 .. NELBO: 5353.15
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.49 .. NELBO:
11784.53
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.23 .. NELBO: 5347.25
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 120
model: ETM(
  (t_drop): Dropout(p=0.05643717817317235, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=52, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 62.89 .. Rec_loss: 12264.11 .. NELBO:
12327.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.73 .. Rec_loss: 5443.89 .. NELBO: 5450.62
*****
*****
Validation loss decreased (inf --> 10901.248047). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.24 .. Rec_loss: 12248.44 .. NELBO:

```

```
12255.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5432.12 .. NELBO: 5432.42
*****
*****
Validation loss decreased (10901.248047 --> 10864.847656). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 12209.49 .. NELBO:
12209.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5409.68 .. NELBO: 5409.73
*****
*****
Validation loss decreased (10864.847656 --> 10819.451172). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 12141.33 .. NELBO:
12141.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.56 .. NELBO: 5377.58
*****
*****
Validation loss decreased (10819.451172 --> 10755.155273). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12045.09 .. NELBO:
12045.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5341.3 .. NELBO: 5341.31
*****
*****
Validation loss decreased (10755.155273 --> 10682.615234). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11937.7 .. NELBO:
```

```
11937.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.37 .. NELBO: 5311.38
*****
*****
Validation loss decreased (10682.615234 --> 10622.759766). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11843.36 .. NELBO:
11843.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.18 .. NELBO: 5300.19
*****
*****
Validation loss decreased (10622.759766 --> 10600.390625). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11789.23 .. NELBO:
11789.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.36 .. NELBO: 5312.37
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11780.3 .. NELBO:
11780.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.83 .. NELBO: 5335.84
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.51 .. NELBO:
```

```

11793.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.71 .. NELBO: 5351.72
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.12 .. NELBO:
11796.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.71 .. NELBO: 5353.72
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11785.19 .. NELBO:
11785.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.61 .. NELBO: 5347.62
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05643717817317235, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=52, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)

```

```

*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 75.27 .. Rec_loss: 12264.11 .. NELBO:
12339.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.19 .. Rec_loss: 5443.87 .. NELBO: 5451.06
*****
*****
Validation loss decreased (inf --> 10902.127930). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 7.74 .. Rec_loss: 12247.63 .. NELBO:
12255.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5431.34 .. NELBO: 5431.75
*****
*****
Validation loss decreased (10902.127930 --> 10863.496094). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12207.25 .. NELBO:
12207.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.19 .. NELBO: 5408.26
*****
*****
Validation loss decreased (10863.496094 --> 10816.537109). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12137.27 .. NELBO:
12137.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.44 .. NELBO: 5375.46
*****
*****
Validation loss decreased (10816.537109 --> 10750.932617). Saving model ...

```

```

*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12039.96 .. NELBO:
12040.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.02 .. NELBO: 5339.04
*****
*****
Validation loss decreased (10750.932617 --> 10678.064453). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11932.0 .. NELBO:
11932.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.68 .. NELBO: 5309.69
*****
*****
Validation loss decreased (10678.064453 --> 10619.378906). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.02 .. NELBO:
11839.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.74 .. NELBO: 5299.75
*****
*****
Validation loss decreased (10619.378906 --> 10599.515625). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.69 .. NELBO:
11786.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.09 .. NELBO: 5313.1
*****
*****
EarlyStopping counter: 1 out of 5

```



```

*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.48 .. NELBO:
11780.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.79 .. NELBO: 5336.81
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.77 .. NELBO:
11793.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.14 .. NELBO: 5352.15
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.39 .. NELBO:
11795.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.62 .. NELBO: 5353.63
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.78 .. NELBO:
11783.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.42 .. NELBO: 5347.43
*****
*****
EarlyStopping counter: 5 out of 5

```

Early stopping

```
model: ETM(
  (t_drop): Dropout(p=0.05643717817317235, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=52, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 72.62 .. Rec_loss: 12264.12 .. NELBO:
12336.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.27 .. Rec_loss: 5444.0 .. NELBO: 5451.27
*****
*****
Validation loss decreased (inf --> 10902.553711). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.79 .. Rec_loss: 12249.29 .. NELBO:
12257.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5433.26 .. NELBO: 5433.7
*****
*****
Validation loss decreased (10902.553711 --> 10867.396484). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12213.36 .. NELBO:
12214.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5411.72 .. NELBO: 5411.81
```

```

*****
*****
Validation loss decreased (10867.396484 --> 10823.622070). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12147.34 .. NELBO:
12147.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.38 .. NELBO: 5380.41
*****
*****
Validation loss decreased (10823.622070 --> 10760.817383). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12053.7 .. NELBO:
12053.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.25 .. NELBO: 5344.27
*****
*****
Validation loss decreased (10760.817383 --> 10688.541016). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11946.42 .. NELBO:
11946.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.34 .. NELBO: 5313.36
*****
*****
Validation loss decreased (10688.541016 --> 10626.721680). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11849.97 .. NELBO:
11850.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5300.11 .. NELBO: 5300.14

```

```

*****
*****
Validation loss decreased (10626.721680 --> 10600.276367). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11791.75 .. NELBO:
11791.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5310.4 .. NELBO: 5310.43
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11779.72 .. NELBO:
11779.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5333.64 .. NELBO: 5333.68
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11792.1 .. NELBO:
11792.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5350.74 .. NELBO: 5350.78
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11796.48 .. NELBO:
11796.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.88 .. NELBO: 5353.91

```

```

*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11785.47 .. NELBO:
11785.53
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.24 .. NELBO: 5348.26
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 121
model: ETM(
  (t_drop): Dropout(p=0.057212631968940095, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=78, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=78, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=78, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 74.69 .. Rec_loss: 12264.0 .. NELBO:
12338.69
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.5 .. Rec_loss: 5443.77 .. NELBO: 5451.27
*****
*****
Validation loss decreased (inf --> 10902.538086). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.12 .. Rec_loss: 12247.23 .. NELBO:
12255.35
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5430.78 .. NELBO: 5431.13
*****
*****
Validation loss decreased (10902.538086 --> 10862.263672). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12204.46 .. NELBO:
12204.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5406.58 .. NELBO: 5406.64
*****
*****
Validation loss decreased (10862.263672 --> 10813.270508). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12130.57 .. NELBO:
12130.66
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5372.98 .. NELBO: 5373.0
*****
*****
Validation loss decreased (10813.270508 --> 10746.004883). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12031.44 .. NELBO:
12031.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.59 .. NELBO: 5336.61
*****
*****
Validation loss decreased (10746.004883 --> 10673.208984). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11923.51 .. NELBO:
11923.54
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.64 .. NELBO: 5308.66
*****
*****
Validation loss decreased (10673.208984 --> 10617.318359). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11833.8 .. NELBO:
11833.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.94 .. NELBO: 5300.96
*****
*****
Validation loss decreased (10617.318359 --> 10601.915039). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.3 .. NELBO:
11786.33
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.59 .. NELBO: 5315.61
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.6 .. NELBO:
11782.63
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.46 .. NELBO: 5338.48
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.84 .. NELBO:
11794.87
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.05 .. NELBO: 5352.07
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.2 .. NELBO:
11795.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.34 .. NELBO: 5352.36
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.27 .. NELBO:
11782.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.88 .. NELBO: 5345.9
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.057212631968940095, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=78, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=78, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=78, bias=True)
)
*****
*****

```



```

Epoch---->1 .. LR: 0.005 .. KL_theta: 85.22 .. Rec_loss: 12264.49 .. NELBO:
12349.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.27 .. Rec_loss: 5444.26 .. NELBO: 5452.53
*****
*****
Validation loss decreased (inf --> 10905.059570). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.05 .. Rec_loss: 12249.31 .. NELBO:
12258.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.73 .. NELBO: 5433.16
*****
*****
Validation loss decreased (10905.059570 --> 10866.327148). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12211.18 .. NELBO:
12211.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5410.6 .. NELBO: 5410.66
*****
*****
Validation loss decreased (10866.327148 --> 10821.323242). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12143.25 .. NELBO:
12143.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.61 .. NELBO: 5378.63
*****
*****
Validation loss decreased (10821.323242 --> 10757.270508). Saving model ...
*****
*****

```

```
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12048.05 .. NELBO:
12048.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.26 .. NELBO: 5342.28
*****
*****
Validation loss decreased (10757.270508 --> 10684.549805). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11940.19 .. NELBO:
11940.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.01 .. NELBO: 5312.02
*****
*****
Validation loss decreased (10684.549805 --> 10624.040039). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.71 .. NELBO:
11845.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.33 .. NELBO: 5300.34
*****
*****
Validation loss decreased (10624.040039 --> 10600.680664). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.39 .. NELBO:
11789.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.08 .. NELBO: 5312.1
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
```

```
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.25 .. NELBO:
11780.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.51 .. NELBO: 5335.53
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.58 .. NELBO:
11792.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.63 .. NELBO: 5351.65
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.36 .. NELBO:
11796.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.81 .. NELBO: 5353.83
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.94 .. NELBO:
11784.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.8 .. NELBO: 5347.81
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
```

```

(t_drop): Dropout(p=0.057212631968940095, inplace=False)
(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=78, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=78, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=78, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 89.43 .. Rec_loss: 12264.26 .. NELBO:
12353.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.18 .. Rec_loss: 5444.25 .. NELBO: 5452.43
*****
*****
Validation loss decreased (inf --> 10904.863281). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.83 .. Rec_loss: 12249.63 .. NELBO:
12258.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5433.14 .. NELBO: 5433.57
*****
*****
Validation loss decreased (10904.863281 --> 10867.126953). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12212.68 .. NELBO:
12213.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.43 .. NELBO: 5411.5
*****
*****

```

```

Validation loss decreased (10867.126953 --> 10822.995117). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12146.08 .. NELBO:
12146.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.98 .. NELBO: 5380.0
*****
*****
Validation loss decreased (10822.995117 --> 10759.998047). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12052.0 .. NELBO:
12052.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.93 .. NELBO: 5343.95
*****
*****
Validation loss decreased (10759.998047 --> 10687.905273). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11945.58 .. NELBO:
11945.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.31 .. NELBO: 5313.33
*****
*****
Validation loss decreased (10687.905273 --> 10626.653320). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11849.69 .. NELBO:
11849.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.43 .. NELBO: 5300.45
*****
*****

```

```

Validation loss decreased (10626.653320 --> 10600.894531). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.24 .. NELBO:
11791.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.87 .. NELBO: 5310.89
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.76 .. NELBO:
11779.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.01 .. NELBO: 5334.03
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.04 .. NELBO:
11792.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.83 .. NELBO: 5350.85
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.18 .. NELBO:
11796.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.82 .. NELBO: 5353.84
*****
*****

```

```

EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.34 .. NELBO:
11786.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.16 .. NELBO: 5348.18
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 122
model: ETM(
  (t_drop): Dropout(p=0.05607414825152611, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=97, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=97, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=97, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 982.04 .. Rec_loss: 12264.3 .. NELBO:
13246.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.68 .. Rec_loss: 5445.52 .. NELBO: 5464.2
*****
*****
Validation loss decreased (inf --> 10928.387695). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 20.13 .. Rec_loss: 12253.64 .. NELBO:
12273.77
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.96 .. Rec_loss: 5436.49 .. NELBO: 5437.45
*****
*****
Validation loss decreased (10928.387695 --> 10874.890625). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 1.65 .. Rec_loss: 12223.8 .. NELBO:
12225.45
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5418.48 .. NELBO: 5418.91
*****
*****
Validation loss decreased (10874.890625 --> 10837.820312). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 12166.92 .. NELBO:
12167.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5390.45 .. NELBO: 5390.6
*****
*****
Validation loss decreased (10837.820312 --> 10781.210938). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 12082.21 .. NELBO:
12082.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5355.57 .. NELBO: 5355.64
*****
*****
Validation loss decreased (10781.210938 --> 10711.285156). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 11978.27 .. NELBO:
11978.41
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5321.95 .. NELBO: 5322.04
*****
*****
Validation loss decreased (10711.285156 --> 10644.090820). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 11875.45 .. NELBO:
11875.7
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 5301.85 .. NELBO: 5302.07
*****
*****
Validation loss decreased (10644.090820 --> 10604.137695). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 11802.21 .. NELBO:
11802.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5304.92 .. NELBO: 5305.02
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 11777.11 .. NELBO:
11777.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5326.36 .. NELBO: 5326.39
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11786.15 .. NELBO:
11786.21
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5347.75 .. NELBO: 5347.78
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11796.97 .. NELBO:
11797.03
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.74 .. NELBO: 5355.77
*****
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11792.06 .. NELBO:
11792.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.06 .. NELBO: 5352.09
*****
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05607414825152611, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=97, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=97, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=97, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1042.09 .. Rec_loss: 12264.89 .. NELBO:
13306.98

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 21.25 .. Rec_loss: 5445.99 .. NELBO:
5467.24
*****
*****
Validation loss decreased (inf --> 10934.490234). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 24.27 .. Rec_loss: 12255.22 .. NELBO:
12279.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.07 .. Rec_loss: 5437.76 .. NELBO: 5440.83
*****
*****
Validation loss decreased (10934.490234 --> 10881.664062). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 6.2 .. Rec_loss: 12228.33 .. NELBO:
12234.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.2 .. Rec_loss: 5421.38 .. NELBO: 5423.58
*****
*****
Validation loss decreased (10881.664062 --> 10847.152344). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 4.02 .. Rec_loss: 12176.17 .. NELBO:
12180.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 5395.21 .. NELBO: 5396.33
*****
*****
Validation loss decreased (10847.152344 --> 10792.664062). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.96 .. Rec_loss: 12096.58 .. NELBO:

```

```
12098.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5361.57 .. NELBO: 5362.01
*****
*****
Validation loss decreased (10792.664062 --> 10724.025391). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.74 .. Rec_loss: 11995.86 .. NELBO:
11996.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5327.49 .. NELBO: 5327.65
*****
*****
Validation loss decreased (10724.025391 --> 10655.288086). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 11892.53 .. NELBO:
11892.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5304.33 .. NELBO: 5304.39
*****
*****
Validation loss decreased (10655.288086 --> 10608.786133). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11813.16 .. NELBO:
11813.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5302.72 .. NELBO: 5302.75
*****
*****
Validation loss decreased (10608.786133 --> 10605.509766). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11778.1 .. NELBO:
```

```
11778.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5321.6 .. NELBO: 5321.63
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11783.32 .. NELBO:
11783.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5344.28 .. NELBO: 5344.31
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.09 .. NELBO:
11796.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.05 .. NELBO: 5355.08
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.81 .. NELBO:
11793.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.11 .. NELBO: 5353.14
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11779.48 .. NELBO:
```

```

11779.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5345.84 .. NELBO: 5345.87
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05607414825152611, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=97, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=97, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=97, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1416.33 .. Rec_loss: 12264.08 .. NELBO:
13680.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.91 .. Rec_loss: 5445.21 .. NELBO:
5469.12
*****
*****
Validation loss decreased (inf --> 10938.231445). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 28.4 .. Rec_loss: 12252.69 .. NELBO:
12281.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.53 .. Rec_loss: 5436.08 .. NELBO: 5440.61
*****
*****

```

```

Validation loss decreased (10938.231445 --> 10881.229492). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 8.79 .. Rec_loss: 12222.74 .. NELBO:
12231.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.13 .. Rec_loss: 5418.19 .. NELBO: 5421.32
*****
*****
Validation loss decreased (10881.229492 --> 10842.636719). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 5.6 .. Rec_loss: 12166.33 .. NELBO:
12171.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.81 .. Rec_loss: 5390.61 .. NELBO: 5392.42
*****
*****
Validation loss decreased (10842.636719 --> 10784.854492). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.46 .. Rec_loss: 12082.71 .. NELBO:
12086.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.18 .. Rec_loss: 5356.34 .. NELBO: 5357.52
*****
*****
Validation loss decreased (10784.854492 --> 10715.045898). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.27 .. Rec_loss: 11980.18 .. NELBO:
11982.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 5323.02 .. NELBO: 5323.81
*****
*****

```

```
Validation loss decreased (10715.045898 --> 10647.629883). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.56 .. Rec_loss: 11878.23 .. NELBO:
11879.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 5302.44 .. NELBO: 5302.99
*****
*****
Validation loss decreased (10647.629883 --> 10605.979492). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 1.0 .. Rec_loss: 11804.27 .. NELBO:
11805.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5304.16 .. NELBO: 5304.42
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 11776.63 .. NELBO:
11777.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5324.66 .. NELBO: 5324.8
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 11784.6 .. NELBO:
11784.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5346.3 .. NELBO: 5346.37
*****
*****
```



```

EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11796.03 .. NELBO:
11796.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5355.06 .. NELBO: 5355.1
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11791.95 .. NELBO:
11792.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5351.93 .. NELBO: 5351.96
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 123
model: ETM(
  (t_drop): Dropout(p=0.05697658493216787, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=51, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=51, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=51, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 12263.46 .. NELBO:
12263.76
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 5442.27 .. NELBO: 5442.59
*****
*****
Validation loss decreased (inf --> 10885.183594). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.93 .. Rec_loss: 12241.07 .. NELBO:
12243.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5425.4 .. NELBO: 5425.42
*****
*****
Validation loss decreased (10885.183594 --> 10850.844727). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12187.27 .. NELBO:
12187.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5396.84 .. NELBO: 5397.03
*****
*****
Validation loss decreased (10850.844727 --> 10794.070312). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.89 .. Rec_loss: 12101.81 .. NELBO:
12102.7
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.29 .. Rec_loss: 5360.13 .. NELBO: 5361.42
*****
*****
Validation loss decreased (10794.070312 --> 10722.845703). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.14 .. Rec_loss: 11994.42 .. NELBO:
11996.56
*****
*****
*****

```

```
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5325.32 .. NELB0: 5325.51
*****
*****
Validation loss decreased (10722.845703 --> 10651.018555). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.85 .. Rec_loss: 11890.56 .. NELB0:
11891.41
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5302.83 .. NELB0: 5303.23
*****
*****
Validation loss decreased (10651.018555 --> 10606.474609). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.83 .. Rec_loss: 11813.35 .. NELB0:
11814.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5303.08 .. NELB0: 5303.27
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 11781.84 .. NELB0:
11782.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5322.02 .. NELB0: 5322.25
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 11785.27 .. NELB0:
11785.87
*****
*****
*****
```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5342.15 .. NELBO: 5342.65
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.63 .. Rec_loss: 11792.77 .. NELBO:
11794.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.19 .. Rec_loss: 5349.02 .. NELBO: 5350.21
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 4.74 .. Rec_loss: 11783.39 .. NELBO:
11788.13
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.81 .. Rec_loss: 5343.06 .. NELBO: 5345.87
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05697658493216787, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=51, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=51, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=51, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.27 .. Rec_loss: 12263.22 .. NELBO:
12263.49

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5442.2 .. NELBO: 5442.48
*****
*****
Validation loss decreased (inf --> 10884.953125). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.7 .. Rec_loss: 12239.89 .. NELBO:
12241.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5425.15 .. NELBO: 5425.19
*****
*****
Validation loss decreased (10884.953125 --> 10850.393555). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12186.22 .. NELBO:
12186.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5396.64 .. NELBO: 5396.69
*****
*****
Validation loss decreased (10850.393555 --> 10793.379883). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 12100.2 .. NELBO:
12100.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.89 .. Rec_loss: 5359.65 .. NELBO: 5360.54
*****
*****
Validation loss decreased (10793.379883 --> 10721.074219). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 3.21 .. Rec_loss: 11990.34 .. NELBO:
11993.55

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.45 .. Rec_loss: 5324.03 .. NELBO: 5326.48
*****
*****
Validation loss decreased (10721.074219 --> 10652.946289). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 3.62 .. Rec_loss: 11886.31 .. NELBO:
11889.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5303.02 .. NELBO: 5303.31
*****
*****
Validation loss decreased (10652.946289 --> 10606.620117). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 11812.54 .. NELBO:
11813.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5303.42 .. NELBO: 5303.5
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 11781.24 .. NELBO:
11781.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5322.95 .. NELBO: 5323.06
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 11786.25 .. NELBO:
11786.72

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5343.05 .. NELBO: 5343.11
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 11794.45 .. NELBO:
11794.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5349.91 .. NELBO: 5350.33
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 1.4 .. Rec_loss: 11786.92 .. NELBO:
11788.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.19 .. Rec_loss: 5345.2 .. NELBO: 5346.39
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05697658493216787, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=51, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=51, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=51, bias=True)
)
*****

```

```

*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 12263.27 .. NELBO:
12263.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5442.21 .. NELBO: 5442.67
*****
*****
Validation loss decreased (inf --> 10885.342773). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.44 .. Rec_loss: 12240.45 .. NELBO:
12241.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5425.38 .. NELBO: 5425.4
*****
*****
Validation loss decreased (10885.342773 --> 10850.811523). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12187.4 .. NELBO:
12187.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5396.98 .. NELBO: 5397.13
*****
*****
Validation loss decreased (10850.811523 --> 10794.260742). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12100.97 .. NELBO:
12101.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.57 .. Rec_loss: 5360.0 .. NELBO: 5361.57
*****
*****
Validation loss decreased (10794.260742 --> 10723.155273). Saving model ...
*****

```



```
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 4.34 .. Rec_loss: 11991.39 .. NELBO:
11995.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 5325.1 .. NELBO: 5326.7
*****
*****
Validation loss decreased (10723.155273 --> 10653.384766). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.13 .. Rec_loss: 11889.47 .. NELBO:
11891.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5303.39 .. NELBO: 5303.82
*****
*****
Validation loss decreased (10653.384766 --> 10607.635742). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.93 .. Rec_loss: 11813.71 .. NELBO:
11814.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5302.93 .. NELBO: 5303.08
*****
*****
Validation loss decreased (10607.635742 --> 10606.154297). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 11781.08 .. NELBO:
11781.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5321.51 .. NELBO: 5321.67
*****
*****
EarlyStopping counter: 1 out of 5
*****
```

```

*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 11784.74 .. NELBO:
11785.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5341.11 .. NELBO: 5341.58
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.33 .. Rec_loss: 11792.05 .. NELBO:
11793.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.94 .. Rec_loss: 5348.25 .. NELBO: 5349.19
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.89 .. Rec_loss: 11784.2 .. NELBO:
11787.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.61 .. Rec_loss: 5341.16 .. NELBO: 5344.77
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 6.41 .. Rec_loss: 11766.7 .. NELBO:
11773.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.27 .. Rec_loss: 5336.47 .. NELBO: 5338.74
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping

```

```

Current call: 124
model: ETM(
  (t_drop): Dropout(p=0.06232375925801559, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=68, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=68, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=68, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 91.23 .. Rec_loss: 12264.06 .. NELBO:
12355.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.42 .. Rec_loss: 5443.94 .. NELBO: 5452.36
*****
*****
Validation loss decreased (inf --> 10904.717773). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.07 .. Rec_loss: 12248.35 .. NELBO:
12257.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5432.04 .. NELBO: 5432.56
*****
*****
Validation loss decreased (10904.717773 --> 10865.135742). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 12209.73 .. NELBO:
12210.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.36 .. NELBO: 5409.45

```

```

*****
*****
Validation loss decreased (10865.135742 --> 10818.902344). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12140.15 .. NELBO:
12140.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.0 .. NELBO: 5377.03
*****
*****
Validation loss decreased (10818.902344 --> 10754.061523). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12044.82 .. NELBO:
12044.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.66 .. NELBO: 5340.68
*****
*****
Validation loss decreased (10754.061523 --> 10681.351562). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11936.76 .. NELBO:
11936.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.85 .. NELBO: 5310.87
*****
*****
Validation loss decreased (10681.351562 --> 10621.725586). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.73 .. NELBO:
11842.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.88 .. NELBO: 5299.9

```

```

*****
*****
Validation loss decreased (10621.725586 --> 10599.792969). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.16 .. NELBO:
11789.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.13 .. NELBO: 5312.15
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.73 .. NELBO:
11780.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.54 .. NELBO: 5335.56
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.1 .. NELBO:
11793.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.41 .. NELBO: 5351.43
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.32 .. NELBO:
11796.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.46 .. NELBO: 5353.48

```

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*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.2 .. NELBO:
11784.23
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.47 .. NELBO: 5347.48
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06232375925801559, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=68, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=68, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=68, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 75.63 .. Rec_loss: 12264.41 .. NELBO:
12340.04
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.28 .. Rec_loss: 5444.14 .. NELBO: 5451.42
*****
*****
Validation loss decreased (inf --> 10902.841797). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.87 .. Rec_loss: 12248.89 .. NELBO:
12256.76
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5432.09 .. NELBO: 5432.45
*****
*****
Validation loss decreased (10902.841797 --> 10864.898438). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 12209.53 .. NELBO:
12210.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5408.92 .. NELBO: 5408.98
*****
*****
Validation loss decreased (10864.898438 --> 10817.970703). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12138.54 .. NELBO:
12138.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.96 .. NELBO: 5375.98
*****
*****
Validation loss decreased (10817.970703 --> 10751.958008). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12041.13 .. NELBO:
12041.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.29 .. NELBO: 5339.31
*****
*****
Validation loss decreased (10751.958008 --> 10678.615234). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11932.97 .. NELBO:
11933.0
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.91 .. NELBO: 5309.93
*****
*****
Validation loss decreased (10678.615234 --> 10619.846680). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.68 .. NELBO:
11839.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.15 .. NELBO: 5300.17
*****
*****
Validation loss decreased (10619.846680 --> 10600.336914). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.44 .. NELBO:
11788.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.63 .. NELBO: 5313.65
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.83 .. NELBO:
11781.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.13 .. NELBO: 5337.15
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.32 .. NELBO:
11794.35
*****
*****

```



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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.02 .. NELBO: 5352.04
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.95 .. NELBO:
11795.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.19 .. NELBO: 5353.21
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.41 .. NELBO:
11783.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.91 .. NELBO: 5346.93
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06232375925801559, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=68, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=68, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=68, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 74.48 .. Rec_loss: 12264.01 .. NELBO:

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```
12338.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.16 .. Rec_loss: 5443.91 .. NELBO: 5451.07
*****
*****
Validation loss decreased (inf --> 10902.147461). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.71 .. Rec_loss: 12248.38 .. NELBO:
12256.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5432.02 .. NELBO: 5432.38
*****
*****
Validation loss decreased (10902.147461 --> 10864.763672). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 12209.11 .. NELBO:
12209.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5409.19 .. NELBO: 5409.25
*****
*****
Validation loss decreased (10864.763672 --> 10818.492188). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12139.35 .. NELBO:
12139.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.77 .. NELBO: 5376.79
*****
*****
Validation loss decreased (10818.492188 --> 10753.590820). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12043.4 .. NELBO:
```

```
12043.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.56 .. NELBO: 5340.58
*****
*****
Validation loss decreased (10753.590820 --> 10681.157227). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.06 .. NELBO:
11936.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.07 .. NELBO: 5311.09
*****
*****
Validation loss decreased (10681.157227 --> 10622.181641). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.79 .. NELBO:
11842.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELBO: 5300.39
*****
*****
Validation loss decreased (10622.181641 --> 10600.765625). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.26 .. NELBO:
11789.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.58 .. NELBO: 5312.6
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.04 .. NELBO:
```

```
11781.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.68 .. NELBO: 5335.7
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.24 .. NELBO:
11793.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.26 .. NELBO: 5351.28
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.55 .. NELBO:
11796.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.12 .. NELBO: 5353.14
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.69 .. NELBO:
11784.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.09 .. NELBO: 5347.11
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 125
model: ETM(
```

```

(t_drop): Dropout(p=0.05817788299393601, inplace=False)
(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=69, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=69, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=69, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 87.31 .. Rec_loss: 12264.22 .. NELBO:
12351.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.57 .. Rec_loss: 5443.81 .. NELBO: 5451.38
*****
*****
Validation loss decreased (inf --> 10902.757812). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.22 .. Rec_loss: 12248.04 .. NELBO:
12256.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5431.6 .. NELBO: 5432.04
*****
*****
Validation loss decreased (10902.757812 --> 10864.083008). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12208.05 .. NELBO:
12208.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.34 .. NELBO: 5408.41
*****
*****

```

```
Validation loss decreased (10864.083008 --> 10816.828125). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12136.6 .. NELBO:
12136.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.43 .. NELBO: 5375.45
*****
*****
Validation loss decreased (10816.828125 --> 10750.912109). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12040.35 .. NELBO:
12040.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.94 .. NELBO: 5338.96
*****
*****
Validation loss decreased (10750.912109 --> 10677.910156). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11932.18 .. NELBO:
11932.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.74 .. NELBO: 5309.76
*****
*****
Validation loss decreased (10677.910156 --> 10619.509766). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.14 .. NELBO:
11839.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.07 .. NELBO: 5300.09
*****
*****
```

```

Validation loss decreased (10619.509766 --> 10600.180664). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.79 .. NELBO:
11787.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.47 .. NELBO: 5313.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.64 .. NELBO:
11781.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.86 .. NELBO: 5336.88
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.85 .. NELBO:
11793.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.82 .. NELBO: 5351.84
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.63 .. NELBO:
11795.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.13 .. NELBO: 5353.15
*****
*****

```

```

EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.66 .. NELBO:
11783.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.95 .. NELBO: 5346.97
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05817788299393601, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=69, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=69, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=69, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 82.33 .. Rec_loss: 12264.14 .. NELBO:
12346.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.78 .. Rec_loss: 5443.89 .. NELBO: 5451.67
*****
*****
Validation loss decreased (inf --> 10903.345703). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.43 .. Rec_loss: 12248.03 .. NELBO:
12256.46
*****
*****
*****
*****

```



```

VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5431.71 .. NELBO: 5432.12
*****
*****
Validation loss decreased (10903.345703 --> 10864.249023). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12208.06 .. NELBO:
12208.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.25 .. NELBO: 5408.32
*****
*****
Validation loss decreased (10864.249023 --> 10816.639648). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12135.59 .. NELBO:
12135.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.28 .. NELBO: 5375.3
*****
*****
Validation loss decreased (10816.639648 --> 10750.595703). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12038.34 .. NELBO:
12038.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.99 .. NELBO: 5339.01
*****
*****
Validation loss decreased (10750.595703 --> 10678.006836). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11930.07 .. NELBO:
11930.1
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.2 .. NELBO: 5310.22
*****
*****
Validation loss decreased (10678.006836 --> 10620.435547). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.8 .. NELBO:
11838.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.86 .. NELBO: 5300.88
*****
*****
Validation loss decreased (10620.435547 --> 10601.758789). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.46 .. NELBO:
11788.49
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.15 .. NELBO: 5314.17
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.24 .. NELBO:
11782.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.02 .. NELBO: 5337.04
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.53 .. NELBO:
11794.56
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.54 .. NELBO: 5351.56
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.96 .. NELBO:
11795.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.62 .. NELBO: 5352.64
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.48 .. NELBO:
11783.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.4 .. NELBO: 5346.42
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05817788299393601, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=69, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=69, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=69, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 85.77 .. Rec_loss: 12263.58 .. NELBO:
12349.35
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.33 .. Rec_loss: 5443.31 .. NELBO: 5451.64
*****
*****
Validation loss decreased (inf --> 10903.288086). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.92 .. Rec_loss: 12245.89 .. NELBO:
12254.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5430.32 .. NELBO: 5430.76
*****
*****
Validation loss decreased (10903.288086 --> 10861.522461). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12203.02 .. NELBO:
12203.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5405.94 .. NELBO: 5406.01
*****
*****
Validation loss decreased (10861.522461 --> 10812.012695). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12128.9 .. NELBO:
12129.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5372.1 .. NELBO: 5372.12
*****
*****
Validation loss decreased (10812.012695 --> 10744.249023). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12028.51 .. NELBO:
12028.55
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.55 .. NELBO: 5335.56
*****
*****
Validation loss decreased (10744.249023 --> 10671.125977). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11919.81 .. NELBO:
11919.84
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5307.78 .. NELBO: 5307.79
*****
*****
Validation loss decreased (10671.125977 --> 10615.578125). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11830.62 .. NELBO:
11830.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.74 .. NELBO: 5300.75
*****
*****
Validation loss decreased (10615.578125 --> 10601.504883). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.48 .. NELBO:
11784.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5316.33 .. NELBO: 5316.34
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.53 .. NELBO:
11782.56
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5339.69 .. NELBO: 5339.7
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.46 .. NELBO:
11795.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.02 .. NELBO: 5353.03
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.01 .. NELBO:
11795.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.89 .. NELBO: 5352.9
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.06 .. NELBO:
11782.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.16 .. NELBO: 5346.17
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 126
model: ETM(
  (t_drop): Dropout(p=0.06086875733605315, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)

```

```

(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=60, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=60, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=60, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1159.13 .. Rec_loss: 12264.04 .. NELBO:
13423.17
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 27.33 .. Rec_loss: 5445.17 .. NELBO: 5472.5
*****
*****
Validation loss decreased (inf --> 10944.997070). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 35.27 .. Rec_loss: 12252.41 .. NELBO:
12287.68
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.57 .. Rec_loss: 5435.41 .. NELBO:
5447.98
*****
*****
Validation loss decreased (10944.997070 --> 10895.953125). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 28.52 .. Rec_loss: 12221.71 .. NELBO:
12250.23
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 13.86 .. Rec_loss: 5417.6 .. NELBO: 5431.46
*****
*****
Validation loss decreased (10895.953125 --> 10862.909180). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 26.0 .. Rec_loss: 12165.93 .. NELBO:
12191.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.45 .. Rec_loss: 5390.43 .. NELBO: 5398.88
*****
*****
Validation loss decreased (10862.909180 --> 10797.750000). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 15.37 .. Rec_loss: 12083.79 .. NELBO:
12099.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.88 .. Rec_loss: 5356.65 .. NELBO: 5361.53
*****
*****
Validation loss decreased (10797.750000 --> 10723.056641). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 9.05 .. Rec_loss: 11982.74 .. NELBO:
11991.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.05 .. Rec_loss: 5323.67 .. NELBO: 5326.72
*****
*****
Validation loss decreased (10723.056641 --> 10653.440430). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.64 .. Rec_loss: 11881.71 .. NELBO:
11887.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.07 .. Rec_loss: 5302.9 .. NELBO: 5304.97
*****
*****
Validation loss decreased (10653.440430 --> 10609.927734). Saving model ...

```



```

*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.91 .. Rec_loss: 11807.24 .. NELBO:
11811.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.44 .. Rec_loss: 5303.96 .. NELBO: 5305.4
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.72 .. Rec_loss: 11777.84 .. NELBO:
11780.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.96 .. Rec_loss: 5323.8 .. NELBO: 5324.76
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.84 .. Rec_loss: 11785.1 .. NELBO:
11786.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 5344.99 .. NELBO: 5345.6
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 11795.87 .. NELBO:
11796.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5353.66 .. NELBO: 5354.02
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 11791.6 .. NELBO:
11792.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5350.61 .. NELBO: 5350.81
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06086875733605315, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=60, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=60, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=60, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 912.0 .. Rec_loss: 12264.82 .. NELBO:
13176.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.01 .. Rec_loss: 5445.59 .. NELBO: 5470.6
*****
*****
Validation loss decreased (inf --> 10941.209961). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 31.0 .. Rec_loss: 12254.09 .. NELBO:
12285.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.62 .. Rec_loss: 5436.92 .. NELBO: 5445.54

```

```

*****
*****
Validation loss decreased (10941.209961 --> 10891.071289). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 18.45 .. Rec_loss: 12226.28 .. NELBO:
12244.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.64 .. Rec_loss: 5420.06 .. NELBO: 5427.7
*****
*****
Validation loss decreased (10891.071289 --> 10855.409180). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 14.21 .. Rec_loss: 12173.32 .. NELBO:
12187.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.79 .. Rec_loss: 5393.88 .. NELBO: 5398.67
*****
*****
Validation loss decreased (10855.409180 --> 10797.335938). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 8.91 .. Rec_loss: 12093.31 .. NELBO:
12102.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.83 .. Rec_loss: 5360.6 .. NELBO: 5363.43
*****
*****
Validation loss decreased (10797.335938 --> 10726.858398). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 5.29 .. Rec_loss: 11994.43 .. NELBO:
11999.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.76 .. Rec_loss: 5327.0 .. NELBO: 5328.76

```

```

*****
*****
Validation loss decreased (10726.858398 --> 10657.504883). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 3.39 .. Rec_loss: 11892.52 .. NELBO:
11895.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.13 .. Rec_loss: 5304.06 .. NELBO: 5305.19
*****
*****
Validation loss decreased (10657.504883 --> 10610.379883). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 2.17 .. Rec_loss: 11813.53 .. NELBO:
11815.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.74 .. Rec_loss: 5302.12 .. NELBO: 5302.86
*****
*****
Validation loss decreased (10610.379883 --> 10605.728516). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.41 .. Rec_loss: 11778.58 .. NELBO:
11779.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5320.39 .. NELBO: 5320.86
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.93 .. Rec_loss: 11782.24 .. NELBO:
11783.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.29 .. Rec_loss: 5342.76 .. NELBO: 5343.05

```

```

*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 11794.95 .. NELBO:
11795.52
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 5353.64 .. NELBO: 5353.83
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 11792.44 .. NELBO:
11792.81
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5351.91 .. NELBO: 5352.04
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 11778.91 .. NELBO:
11779.15
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5344.79 .. NELBO: 5344.87
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06086875733605315, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=60, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
  )
)

```

```

        (2): Linear(in_features=800, out_features=800, bias=True)
        (3): Softplus(beta=1, threshold=20)
    )
    (mu_q_theta): Linear(in_features=800, out_features=60, bias=True)
    (logsigma_q_theta): Linear(in_features=800, out_features=60, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1135.82 .. Rec_loss: 12264.66 .. NELBO:
13400.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 33.65 .. Rec_loss: 5445.74 .. NELBO:
5479.39
*****
*****
Validation loss decreased (inf --> 10958.779297). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 48.5 .. Rec_loss: 12254.46 .. NELBO:
12302.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.12 .. Rec_loss: 5437.48 .. NELBO: 5462.6
*****
*****
Validation loss decreased (10958.779297 --> 10925.189453). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 55.93 .. Rec_loss: 12228.11 .. NELBO:
12284.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 26.29 .. Rec_loss: 5422.32 .. NELBO:
5448.61
*****
*****
Validation loss decreased (10925.189453 --> 10897.203125). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 49.68 .. Rec_loss: 12180.47 .. NELBO:
12230.15

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.19 .. Rec_loss: 5398.11 .. NELBO: 5416.3
*****
*****
Validation loss decreased (10897.203125 --> 10832.613281). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 37.39 .. Rec_loss: 12106.0 .. NELBO:
12143.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.97 .. Rec_loss: 5366.07 .. NELBO:
5383.04
*****
*****
Validation loss decreased (10832.613281 --> 10766.083008). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 35.13 .. Rec_loss: 12008.87 .. NELBO:
12044.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 15.81 .. Rec_loss: 5332.15 .. NELBO:
5347.96
*****
*****
Validation loss decreased (10766.083008 --> 10695.922852). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 31.56 .. Rec_loss: 11906.12 .. NELBO:
11937.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 14.06 .. Rec_loss: 5306.99 .. NELBO:
5321.05
*****
*****
Validation loss decreased (10695.922852 --> 10642.091797). Saving model ...
*****

```

```

*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 28.35 .. Rec_loss: 11822.27 .. NELBO:
11850.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 11.14 .. Rec_loss: 5301.03 .. NELBO:
5312.17
*****
*****
Validation loss decreased (10642.091797 --> 10624.335938). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 21.56 .. Rec_loss: 11780.81 .. NELBO:
11802.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.04 .. Rec_loss: 5314.55 .. NELBO: 5321.59
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 14.25 .. Rec_loss: 11777.75 .. NELBO:
11792.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.37 .. Rec_loss: 5334.22 .. NELBO: 5339.59
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 12.4 .. Rec_loss: 11786.17 .. NELBO:
11798.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.91 .. Rec_loss: 5345.64 .. NELBO: 5351.55
*****
*****
EarlyStopping counter: 3 out of 5

```



```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 13.7 .. Rec_loss: 11784.63 .. NELBO:
11798.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.23 .. Rec_loss: 5344.99 .. NELBO: 5351.22
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 13.76 .. Rec_loss: 11772.91 .. NELBO:
11786.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.75 .. Rec_loss: 5338.98 .. NELBO: 5344.73
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 127
model: ETM(
  (t_drop): Dropout(p=0.06302714138636975, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=56, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=56, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=56, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 68.37 .. Rec_loss: 12264.29 .. NELBO:
12332.66
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 7.31 .. Rec_loss: 5444.06 .. NELBO: 5451.37
*****
*****
Validation loss decreased (inf --> 10902.755859). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.0 .. Rec_loss: 12249.03 .. NELBO:
12257.03
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5432.69 .. NELBO: 5433.06
*****
*****
Validation loss decreased (10902.755859 --> 10866.116211). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12211.56 .. NELBO:
12212.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5410.58 .. NELBO: 5410.64
*****
*****
Validation loss decreased (10866.116211 --> 10821.289062). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12143.55 .. NELBO:
12143.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.73 .. NELBO: 5378.75
*****
*****
Validation loss decreased (10821.289062 --> 10757.501953). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12048.77 .. NELBO:
12048.8
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5342.49 .. NELBO: 5342.5
*****
*****
Validation loss decreased (10757.501953 --> 10685.002930). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11941.79 .. NELBO:
11941.82
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.12 .. NELBO: 5312.13
*****
*****
Validation loss decreased (10685.002930 --> 10624.268555). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11846.12 .. NELBO:
11846.14
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.01 .. NELBO: 5300.02
*****
*****
Validation loss decreased (10624.268555 --> 10600.045898). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11790.11 .. NELBO:
11790.13
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.27 .. NELBO: 5311.28
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11779.89 .. NELBO:
11779.91
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5334.67 .. NELBO: 5334.68
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11792.58 .. NELBO:
11792.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.29 .. NELBO: 5351.3
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11796.73 .. NELBO:
11796.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.93 .. NELBO: 5353.94
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11785.63 .. NELBO:
11785.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.09 .. NELBO: 5348.1
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06302714138636975, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=56, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)

```

```

    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=56, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=56, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 71.2 .. Rec_loss: 12263.66 .. NELBO:
12334.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.63 .. Rec_loss: 5443.15 .. NELBO: 5450.78
*****
*****
Validation loss decreased (inf --> 10901.558594). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.15 .. Rec_loss: 12246.39 .. NELBO:
12254.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5431.16 .. NELBO: 5431.52
*****
*****
Validation loss decreased (10901.558594 --> 10863.049805). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12206.44 .. NELBO:
12206.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5408.28 .. NELBO: 5408.34
*****
*****
Validation loss decreased (10863.049805 --> 10816.685547). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12136.71 .. NELBO:
12136.8
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.18 .. NELBO: 5376.2
*****
*****
Validation loss decreased (10816.685547 --> 10752.389648). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12041.91 .. NELBO:
12041.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5340.45 .. NELBO: 5340.46
*****
*****
Validation loss decreased (10752.389648 --> 10680.920898). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11935.82 .. NELBO:
11935.85
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.31 .. NELBO: 5311.32
*****
*****
Validation loss decreased (10680.920898 --> 10622.653320). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11843.12 .. NELBO:
11843.15
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.55 .. NELBO: 5300.56
*****
*****
Validation loss decreased (10622.653320 --> 10601.132812). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.92 .. NELBO:
11789.95
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.29 .. NELBO: 5312.3
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.9 .. NELBO:
11780.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.0 .. NELBO: 5335.01
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.55 .. NELBO:
11792.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5350.71 .. NELBO: 5350.72
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.55 .. NELBO:
11795.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.01 .. NELBO: 5353.02
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.82 .. NELBO:
11784.85
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.29 .. NELBO: 5347.3
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06302714138636975, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=56, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=56, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=56, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 70.55 .. Rec_loss: 12263.97 .. NELBO:
12334.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.01 .. Rec_loss: 5443.58 .. NELBO: 5450.59
*****
*****
Validation loss decreased (inf --> 10901.173828). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.59 .. Rec_loss: 12247.29 .. NELBO:
12254.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5431.3 .. NELBO: 5431.68
*****
*****
Validation loss decreased (10901.173828 --> 10863.356445). Saving model ...
*****
*****

```



```

Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12207.21 .. NELBO:
12207.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5408.09 .. NELBO: 5408.15
*****
*****
Validation loss decreased (10863.356445 --> 10816.304688). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12136.31 .. NELBO:
12136.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.42 .. NELBO: 5375.44
*****
*****
Validation loss decreased (10816.304688 --> 10750.871094). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12038.9 .. NELBO:
12038.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5339.18 .. NELBO: 5339.19
*****
*****
Validation loss decreased (10750.871094 --> 10678.388672). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11932.11 .. NELBO:
11932.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.04 .. NELBO: 5310.05
*****
*****
Validation loss decreased (10678.388672 --> 10620.112305). Saving model ...
*****
*****

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```

Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.6 .. NELBO:
11839.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.13 .. NELBO: 5300.14
*****
*****
Validation loss decreased (10620.112305 --> 10600.287109). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.56 .. NELBO:
11787.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.25 .. NELBO: 5313.26
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.63 .. NELBO:
11780.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.73 .. NELBO: 5336.74
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.87 .. NELBO:
11793.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.06 .. NELBO: 5352.07
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****

```

```

Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.22 .. NELBO:
11796.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.57 .. NELBO: 5353.58
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.5 .. NELBO:
11784.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.35 .. NELBO: 5347.36
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 128
model: ETM(
  (t_drop): Dropout(p=0.061774107428810475, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 80.8 .. Rec_loss: 12263.66 .. NELBO:
12344.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.84 .. Rec_loss: 5443.77 .. NELBO: 5451.61
*****
*****

```

```

*****
Validation loss decreased (inf --> 10903.210938). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.54 .. Rec_loss: 12248.27 .. NELBO:
12256.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5432.08 .. NELBO: 5432.5
*****
*****
Validation loss decreased (10903.210938 --> 10864.995117). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12209.79 .. NELBO:
12210.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.58 .. NELBO: 5409.65
*****
*****
Validation loss decreased (10864.995117 --> 10819.286133). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12140.55 .. NELBO:
12140.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.44 .. NELBO: 5377.46
*****
*****
Validation loss decreased (10819.286133 --> 10754.920898). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12045.97 .. NELBO:
12046.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.27 .. NELBO: 5341.29
*****

```

```

*****
Validation loss decreased (10754.920898 --> 10682.568359). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11939.07 .. NELBO:
11939.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.39 .. NELBO: 5311.41
*****
*****
Validation loss decreased (10682.568359 --> 10622.819336). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11844.87 .. NELBO:
11844.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.97 .. NELBO: 5299.99
*****
*****
Validation loss decreased (10622.819336 --> 10599.976562). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.96 .. NELBO:
11789.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.64 .. NELBO: 5311.66
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.76 .. NELBO:
11780.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.77 .. NELBO: 5334.79
*****

```

```

*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.89 .. NELBO:
11792.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.75 .. NELBO: 5350.77
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.92 .. NELBO:
11795.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.06 .. NELBO: 5353.08
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.9 .. NELBO:
11784.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.29 .. NELBO: 5347.31
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.061774107428810475, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)

```

```

    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 89.77 .. Rec_loss: 12264.26 .. NELBO:
12354.03
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.1 .. Rec_loss: 5444.23 .. NELBO: 5452.33
*****
*****
Validation loss decreased (inf --> 10904.651367). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.79 .. Rec_loss: 12249.65 .. NELBO:
12258.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5433.03 .. NELBO: 5433.5
*****
*****
Validation loss decreased (10904.651367 --> 10866.998047). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 12212.36 .. NELBO:
12213.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5411.28 .. NELBO: 5411.37
*****
*****
Validation loss decreased (10866.998047 --> 10822.728516). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12145.39 .. NELBO:
12145.52
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.75 .. NELBO: 5379.78
*****
*****
Validation loss decreased (10822.728516 --> 10759.563477). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12050.92 .. NELBO:
12050.97
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.65 .. NELBO: 5343.67
*****
*****
Validation loss decreased (10759.563477 --> 10687.342773). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11944.42 .. NELBO:
11944.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.05 .. NELBO: 5313.07
*****
*****
Validation loss decreased (10687.342773 --> 10626.142578). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11848.71 .. NELBO:
11848.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.32 .. NELBO: 5300.34
*****
*****
Validation loss decreased (10626.142578 --> 10600.676758). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.13 .. NELBO:
11791.17
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.96 .. NELBO: 5310.98
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.47 .. NELBO:
11779.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.25 .. NELBO: 5334.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.15 .. NELBO:
11792.19
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.12 .. NELBO: 5351.14
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11797.04 .. NELBO:
11797.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.96 .. NELBO: 5353.98
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.27 .. NELBO:
11786.3
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.15 .. NELBO: 5348.17
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.061774107428810475, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 75.31 .. Rec_loss: 12264.34 .. NELBO:
12339.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.67 .. Rec_loss: 5444.07 .. NELBO: 5451.74
*****
*****
Validation loss decreased (inf --> 10903.468750). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.27 .. Rec_loss: 12248.44 .. NELBO:
12256.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5432.06 .. NELBO: 5432.4
*****
*****
Validation loss decreased (10903.468750 --> 10864.789062). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 12209.37 .. NELBO:
12209.86

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5409.3 .. NELBO: 5409.36
*****
*****
Validation loss decreased (10864.789062 --> 10818.720703). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12140.28 .. NELBO:
12140.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.08 .. NELBO: 5377.1
*****
*****
Validation loss decreased (10818.720703 --> 10754.208008). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12044.38 .. NELBO:
12044.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.02 .. NELBO: 5341.04
*****
*****
Validation loss decreased (10754.208008 --> 10682.065430). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11937.44 .. NELBO:
11937.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.43 .. NELBO: 5311.44
*****
*****
Validation loss decreased (10682.065430 --> 10622.885742). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11844.5 .. NELBO:
11844.53

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.32 .. NELBO: 5300.33
*****
*****
Validation loss decreased (10622.885742 --> 10600.666016). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.67 .. NELBO:
11789.7
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.04 .. NELBO: 5312.05
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.79 .. NELBO:
11780.82
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5334.96 .. NELBO: 5334.97
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.42 .. NELBO:
11792.45
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5350.86 .. NELBO: 5350.87
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.75 .. NELBO:
11795.78

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.2 .. NELBO: 5353.21
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.48 .. NELBO:
11784.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.43 .. NELBO: 5347.44
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 129
model: ETM(
  (t_drop): Dropout(p=0.06092487005803567, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 82.71 .. Rec_loss: 12264.23 .. NELBO:
12346.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.71 .. Rec_loss: 5443.8 .. NELBO: 5451.51
*****
*****
Validation loss decreased (inf --> 10903.013672). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.31 .. Rec_loss: 12247.78 .. NELBO:
12256.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5431.49 .. NELBO: 5431.88
*****
*****
Validation loss decreased (10903.013672 --> 10863.774414). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12207.57 .. NELBO:
12208.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.16 .. NELBO: 5408.23
*****
*****
Validation loss decreased (10863.774414 --> 10816.452148). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12136.34 .. NELBO:
12136.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.25 .. NELBO: 5375.27
*****
*****
Validation loss decreased (10816.452148 --> 10750.552734). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12038.93 .. NELBO:
12038.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.82 .. NELBO: 5338.84
*****
*****
Validation loss decreased (10750.552734 --> 10677.673828). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11930.96 .. NELBO:
11930.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.76 .. NELBO: 5309.78
*****
*****
Validation loss decreased (10677.673828 --> 10619.546875). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.66 .. NELBO:
11838.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.24 .. NELBO: 5300.26
*****
*****
Validation loss decreased (10619.546875 --> 10600.512695). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.6 .. NELBO:
11787.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.76 .. NELBO: 5313.78
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.52 .. NELBO:
11781.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.19 .. NELBO: 5337.21
*****
*****
EarlyStopping counter: 2 out of 5

```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.13 .. NELBO:
11794.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.07 .. NELBO: 5352.09
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.82 .. NELBO:
11795.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.29 .. NELBO: 5353.3
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.5 .. NELBO:
11783.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.99 .. NELBO: 5347.0
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06092487005803567, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
)

```



```

(mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 83.55 .. Rec_loss: 12263.84 .. NELBO:
12347.39
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.6 .. Rec_loss: 5443.84 .. NELBO: 5451.44
*****
*****
Validation loss decreased (inf --> 10902.877930). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.21 .. Rec_loss: 12247.57 .. NELBO:
12255.78
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5431.35 .. NELBO: 5431.79
*****
*****
Validation loss decreased (10902.877930 --> 10863.587891). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12206.93 .. NELBO:
12207.57
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5407.97 .. NELBO: 5408.05
*****
*****
Validation loss decreased (10863.587891 --> 10816.090820). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12135.66 .. NELBO:
12135.78
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.0 .. NELBO: 5375.02

```

```

*****
*****
Validation loss decreased (10816.090820 --> 10750.053711). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12037.9 .. NELBO:
12037.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.56 .. NELBO: 5338.58
*****
*****
Validation loss decreased (10750.053711 --> 10677.158203). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11930.1 .. NELBO:
11930.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.63 .. NELBO: 5309.64
*****
*****
Validation loss decreased (10677.158203 --> 10619.298828). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11837.62 .. NELBO:
11837.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.41 .. NELBO: 5300.42
*****
*****
Validation loss decreased (10619.298828 --> 10600.846680). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.66 .. NELBO:
11787.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5314.17 .. NELBO: 5314.18

```

```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.75 .. NELBO:
11781.78
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.54 .. NELBO: 5337.55
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.34 .. NELBO:
11794.37
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.14 .. NELBO: 5352.15
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.7 .. NELBO:
11795.73
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.13 .. NELBO: 5353.14
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.38 .. NELBO:
11783.41
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.79 .. NELBO: 5346.8

```

```

*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06092487005803567, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 82.65 .. Rec_loss: 12263.81 .. NELBO:
12346.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.8 .. Rec_loss: 5444.02 .. NELBO: 5451.82
*****
*****
Validation loss decreased (inf --> 10903.626953). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.47 .. Rec_loss: 12248.35 .. NELBO:
12256.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5432.05 .. NELBO: 5432.49
*****
*****
Validation loss decreased (10903.626953 --> 10864.991211). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12208.83 .. NELBO:
12209.47
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.19 .. NELBO: 5409.27
*****
*****
Validation loss decreased (10864.991211 --> 10818.532227). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12138.71 .. NELBO:
12138.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.66 .. NELBO: 5376.69
*****
*****
Validation loss decreased (10818.532227 --> 10753.381836). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12042.15 .. NELBO:
12042.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.32 .. NELBO: 5340.34
*****
*****
Validation loss decreased (10753.381836 --> 10680.669922). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11934.07 .. NELBO:
11934.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.88 .. NELBO: 5310.9
*****
*****
Validation loss decreased (10680.669922 --> 10621.799805). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.6 .. NELBO:
11841.64
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.61 .. NELBO: 5300.63
*****
*****
Validation loss decreased (10621.799805 --> 10601.248047). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.62 .. NELBO:
11788.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.43 .. NELBO: 5313.45
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.01 .. NELBO:
11781.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.76 .. NELBO: 5336.78
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.44 .. NELBO:
11793.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.06 .. NELBO: 5352.08
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.34 .. NELBO:
11795.38
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.63 .. NELBO: 5353.65
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.23 .. NELBO:
11784.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.47 .. NELBO: 5347.49
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 130
model: ETM(
  (t_drop): Dropout(p=0.06002493108338804, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 81.94 .. Rec_loss: 12264.37 .. NELBO:
12346.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.45 .. Rec_loss: 5444.16 .. NELBO: 5451.61
*****
*****
Validation loss decreased (inf --> 10903.231445). Saving model ...
*****
*****

```

```
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.0 .. Rec_loss: 12249.08 .. NELBO:
12257.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5432.42 .. NELBO: 5432.81
*****
*****
Validation loss decreased (10903.231445 --> 10865.612305). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12210.23 .. NELBO:
12210.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.96 .. NELBO: 5410.03
*****
*****
Validation loss decreased (10865.612305 --> 10820.048828). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12140.94 .. NELBO:
12141.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.85 .. NELBO: 5377.88
*****
*****
Validation loss decreased (10820.048828 --> 10755.758789). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12045.78 .. NELBO:
12045.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.76 .. NELBO: 5341.78
*****
*****
Validation loss decreased (10755.758789 --> 10683.562500). Saving model ...
*****
*****
```



```

Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11939.13 .. NELBO:
11939.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.92 .. NELBO: 5311.94
*****
*****
Validation loss decreased (10683.562500 --> 10623.867188). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11845.27 .. NELBO:
11845.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELBO: 5300.39
*****
*****
Validation loss decreased (10623.867188 --> 10600.777344). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.19 .. NELBO:
11790.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.77 .. NELBO: 5311.79
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.53 .. NELBO:
11780.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.77 .. NELBO: 5334.79
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

```

```

Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.34 .. NELBO:
11792.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.85 .. NELBO: 5350.87
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.79 .. NELBO:
11795.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.25 .. NELBO: 5353.27
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.4 .. NELBO:
11785.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.44 .. NELBO: 5347.46
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06002493108338804, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.62 .. Rec_loss: 12264.11 .. NELBO:
12350.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.62 .. Rec_loss: 5444.13 .. NELBO: 5451.75
*****
*****
Validation loss decreased (inf --> 10903.510742). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.32 .. Rec_loss: 12249.06 .. NELBO:
12257.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5432.62 .. NELBO: 5433.09
*****
*****
Validation loss decreased (10903.510742 --> 10866.188477). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12211.0 .. NELBO:
12211.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.47 .. NELBO: 5410.54
*****
*****
Validation loss decreased (10866.188477 --> 10821.092773). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12143.01 .. NELBO:
12143.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.65 .. NELBO: 5378.67
*****
*****

```

```

Validation loss decreased (10821.092773 --> 10757.354492). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12047.8 .. NELBO:
12047.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.49 .. NELBO: 5342.51
*****
*****
Validation loss decreased (10757.354492 --> 10685.024414). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11941.04 .. NELBO:
11941.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.29 .. NELBO: 5312.31
*****
*****
Validation loss decreased (10685.024414 --> 10624.616211). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.88 .. NELBO:
11845.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.39 .. NELBO: 5300.41
*****
*****
Validation loss decreased (10624.616211 --> 10600.812500). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.89 .. NELBO:
11789.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.79 .. NELBO: 5311.81
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.25 .. NELBO:
11780.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.04 .. NELBO: 5335.06
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.64 .. NELBO:
11792.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.23 .. NELBO: 5351.25
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.56 .. NELBO:
11796.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.57 .. NELBO: 5353.59
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.23 .. NELBO:
11785.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.65 .. NELBO: 5347.67
*****
*****

```

EarlyStopping counter: 5 out of 5

Early stopping

model: ETM(

(t_drop): Dropout(p=0.06002493108338804, inplace=False)

(theta_act): Sigmoid()

(rho): Linear(in_features=300, out_features=13198, bias=False)

(alphas): Linear(in_features=300, out_features=76, bias=False)

(q_theta): Sequential(

(0): Linear(in_features=13198, out_features=800, bias=True)

(1): Sigmoid()

(2): Linear(in_features=800, out_features=800, bias=True)

(3): Sigmoid()

)

(mu_q_theta): Linear(in_features=800, out_features=76, bias=True)

(logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)

)

Epoch---->1 .. LR: 0.005 .. KL_theta: 87.87 .. Rec_loss: 12264.49 .. NELBO:
12352.36

VALIDATION .. LR: 0.005 .. KL_theta: 7.92 .. Rec_loss: 5444.26 .. NELBO: 5452.18

Validation loss decreased (inf --> 10904.366211). Saving model ...

Epoch---->2 .. LR: 0.005 .. KL_theta: 8.58 .. Rec_loss: 12249.65 .. NELBO:
12258.23

VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5433.07 .. NELBO: 5433.59

Validation loss decreased (10904.366211 --> 10867.191406). Saving model ...

Epoch---->3 .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 12212.23 .. NELBO:
12212.99


```
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5411.06 .. NELBO: 5411.16
*****
*****
Validation loss decreased (10867.191406 --> 10822.313477). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12145.08 .. NELBO:
12145.22
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.26 .. NELBO: 5379.29
*****
*****
Validation loss decreased (10822.313477 --> 10758.583008). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12050.47 .. NELBO:
12050.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.01 .. NELBO: 5343.03
*****
*****
Validation loss decreased (10758.583008 --> 10686.062500). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11942.75 .. NELBO:
11942.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.56 .. NELBO: 5312.58
*****
*****
Validation loss decreased (10686.062500 --> 10625.148438). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11848.04 .. NELBO:
11848.08
*****
*****
*****
```

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VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.26 .. NELBO: 5300.28
*****
*****
Validation loss decreased (10625.148438 --> 10600.547852). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.86 .. NELBO:
11790.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.3 .. NELBO: 5311.32
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.21 .. NELBO:
11780.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.56 .. NELBO: 5334.58
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.42 .. NELBO:
11792.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.12 .. NELBO: 5351.14
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.91 .. NELBO:
11796.95
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.74 .. NELBO: 5353.76
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.61 .. NELBO:
11785.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.88 .. NELBO: 5347.9
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 131
model: ETM(
  (t_drop): Dropout(p=0.061454763147200865, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1139.2 .. Rec_loss: 12264.74 .. NELBO:
13403.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 23.81 .. Rec_loss: 5445.62 .. NELBO:
5469.43
*****
*****
Validation loss decreased (inf --> 10938.848633). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 29.99 .. Rec_loss: 12253.91 .. NELBO:

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12283.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.73 .. Rec_loss: 5436.53 .. NELBO: 5445.26
*****
*****
Validation loss decreased (10938.848633 --> 10890.534180). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 18.51 .. Rec_loss: 12224.19 .. NELBO:
12242.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.09 .. Rec_loss: 5418.47 .. NELBO: 5426.56
*****
*****
Validation loss decreased (10890.534180 --> 10853.123047). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 15.12 .. Rec_loss: 12167.59 .. NELBO:
12182.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.29 .. Rec_loss: 5390.37 .. NELBO: 5395.66
*****
*****
Validation loss decreased (10853.123047 --> 10791.333008). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 10.29 .. Rec_loss: 12082.69 .. NELBO:
12092.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.72 .. Rec_loss: 5355.55 .. NELBO: 5359.27
*****
*****
Validation loss decreased (10791.333008 --> 10718.541016). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 7.46 .. Rec_loss: 11978.98 .. NELBO:
```

```
11986.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.81 .. Rec_loss: 5322.11 .. NELBO: 5324.92
*****
*****
Validation loss decreased (10718.541016 --> 10649.851562). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 5.51 .. Rec_loss: 11876.46 .. NELBO:
11881.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.12 .. Rec_loss: 5301.98 .. NELBO: 5304.1
*****
*****
Validation loss decreased (10649.851562 --> 10608.208984). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 4.2 .. Rec_loss: 11803.61 .. NELBO:
11807.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.55 .. Rec_loss: 5304.48 .. NELBO: 5306.03
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.99 .. Rec_loss: 11776.88 .. NELBO:
11779.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 5325.32 .. NELBO: 5326.41
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 2.1 .. Rec_loss: 11785.14 .. NELBO:
```

```

11787.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.74 .. Rec_loss: 5346.27 .. NELBO: 5347.01
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 11795.39 .. NELBO:
11796.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5354.13 .. NELBO: 5354.66
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 11790.1 .. NELBO:
11791.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5350.53 .. NELBO: 5350.97
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.061454763147200865, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)

```

```

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1775.21 .. Rec_loss: 12264.56 .. NELBO:
14039.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 32.52 .. Rec_loss: 5445.74 .. NELBO:
5478.26
*****
*****
Validation loss decreased (inf --> 10956.515625). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 43.74 .. Rec_loss: 12254.72 .. NELBO:
12298.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.94 .. Rec_loss: 5437.56 .. NELBO: 5456.5
*****
*****
Validation loss decreased (10956.515625 --> 10912.992188). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 42.97 .. Rec_loss: 12226.89 .. NELBO:
12269.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 21.01 .. Rec_loss: 5420.9 .. NELBO: 5441.91
*****
*****
Validation loss decreased (10912.992188 --> 10883.832031). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 40.13 .. Rec_loss: 12174.43 .. NELBO:
12214.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 14.65 .. Rec_loss: 5395.27 .. NELBO:
5409.92
*****

```

```

*****
Validation loss decreased (10883.832031 --> 10819.849609). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 28.34 .. Rec_loss: 12096.6 .. NELBO:
12124.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 11.02 .. Rec_loss: 5362.51 .. NELBO:
5373.53
*****
*****
Validation loss decreased (10819.849609 --> 10747.059570). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 22.69 .. Rec_loss: 11995.73 .. NELBO:
12018.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.41 .. Rec_loss: 5328.35 .. NELBO:
5338.76
*****
*****
Validation loss decreased (10747.059570 --> 10677.530273). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 21.42 .. Rec_loss: 11891.13 .. NELBO:
11912.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.93 .. Rec_loss: 5304.46 .. NELBO: 5314.39
*****
*****
Validation loss decreased (10677.530273 --> 10628.774414). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 19.9 .. Rec_loss: 11812.43 .. NELBO:
11832.33
*****
*****
*****
*****

```

```
VALIDATION .. LR: 0.005 .. KL_theta: 8.2 .. Rec_loss: 5301.57 .. NELBO: 5309.77
*****
*****
Validation loss decreased (10628.774414 --> 10619.542969). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 15.82 .. Rec_loss: 11778.37 .. NELBO:
11794.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.98 .. Rec_loss: 5317.67 .. NELBO: 5323.65
*****
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 11.51 .. Rec_loss: 11778.87 .. NELBO:
11790.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.1 .. Rec_loss: 5337.83 .. NELBO: 5341.93
*****
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 7.94 .. Rec_loss: 11788.21 .. NELBO:
11796.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.87 .. Rec_loss: 5348.18 .. NELBO: 5351.05
*****
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 5.71 .. Rec_loss: 11786.17 .. NELBO:
11791.88
*****
*****
*****
*****
```

```

VALIDATION .. LR: 0.005 .. KL_theta: 2.21 .. Rec_loss: 5346.81 .. NELBO: 5349.02
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 4.51 .. Rec_loss: 11774.02 .. NELBO:
11778.53
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.94 .. Rec_loss: 5340.13 .. NELBO: 5342.07
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.061454763147200865, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 1554.06 .. Rec_loss: 12264.42 .. NELBO:
13818.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 31.2 .. Rec_loss: 5445.52 .. NELBO: 5476.72
*****
*****
Validation loss decreased (inf --> 10953.449219). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 42.22 .. Rec_loss: 12253.99 .. NELBO:
12296.21
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.62 .. Rec_loss: 5436.71 .. NELBO:
5455.33
*****
*****
Validation loss decreased (10953.449219 --> 10910.670898). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 41.41 .. Rec_loss: 12225.87 .. NELBO:
12267.28
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.23 .. Rec_loss: 5419.85 .. NELBO:
5438.08
*****
*****
Validation loss decreased (10910.670898 --> 10876.162109). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 34.83 .. Rec_loss: 12173.06 .. NELBO:
12207.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.83 .. Rec_loss: 5393.81 .. NELBO:
5406.64
*****
*****
Validation loss decreased (10876.162109 --> 10813.284180). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 24.93 .. Rec_loss: 12094.45 .. NELBO:
12119.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.43 .. Rec_loss: 5360.79 .. NELBO: 5370.22
*****
*****
Validation loss decreased (10813.284180 --> 10740.454102). Saving model ...
*****
*****

```

```
Epoch----->6 .. LR: 0.005 .. KL_theta: 18.7 .. Rec_loss: 11996.03 .. NELBO:
12014.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.3 .. Rec_loss: 5327.23 .. NELBO: 5334.53
*****
*****
Validation loss decreased (10740.454102 --> 10669.061523). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 14.25 .. Rec_loss: 11893.74 .. NELBO:
11907.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.46 .. Rec_loss: 5304.15 .. NELBO: 5309.61
*****
*****
Validation loss decreased (10669.061523 --> 10619.221680). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 10.64 .. Rec_loss: 11814.51 .. NELBO:
11825.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.96 .. Rec_loss: 5301.84 .. NELBO: 5305.8
*****
*****
Validation loss decreased (10619.221680 --> 10611.613281). Saving model ...
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 7.74 .. Rec_loss: 11778.82 .. NELBO:
11786.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.68 .. Rec_loss: 5319.49 .. NELBO: 5322.17
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
```

```
Epoch----->10 .. LR: 0.005 .. KL_theta: 5.16 .. Rec_loss: 11781.94 .. NELBO:
11787.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.72 .. Rec_loss: 5341.29 .. NELBO: 5343.01
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 3.25 .. Rec_loss: 11793.17 .. NELBO:
11796.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.17 .. Rec_loss: 5352.11 .. NELBO: 5353.28
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 2.39 .. Rec_loss: 11791.15 .. NELBO:
11793.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.93 .. Rec_loss: 5350.73 .. NELBO: 5351.66
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->13 .. LR: 0.005 .. KL_theta: 1.97 .. Rec_loss: 11778.57 .. NELBO:
11780.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 5343.86 .. NELBO: 5344.7
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 132
```

```

model: ETM(
  (t_drop): Dropout(p=0.06112375986365006, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=78, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=78, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=78, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.17 .. Rec_loss: 12264.15 .. NELBO:
12343.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.28 .. Rec_loss: 5443.87 .. NELBO: 5451.15
*****
*****
Validation loss decreased (inf --> 10902.297852). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.91 .. Rec_loss: 12248.06 .. NELBO:
12255.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5431.84 .. NELBO: 5432.23
*****
*****
Validation loss decreased (10902.297852 --> 10864.452148). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12208.14 .. NELBO:
12208.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5408.98 .. NELBO: 5409.04
*****
*****

```

```

*****
Validation loss decreased (10864.452148 --> 10818.084961). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12138.89 .. NELBO:
12138.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.61 .. NELBO: 5376.63
*****
*****
Validation loss decreased (10818.084961 --> 10753.262695). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12042.08 .. NELBO:
12042.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.41 .. NELBO: 5340.43
*****
*****
Validation loss decreased (10753.262695 --> 10680.855469). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11935.14 .. NELBO:
11935.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.92 .. NELBO: 5310.93
*****
*****
Validation loss decreased (10680.855469 --> 10621.869141). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11841.96 .. NELBO:
11841.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.3 .. NELBO: 5300.32
*****

```

```

*****
Validation loss decreased (10621.869141 --> 10600.624023). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.62 .. NELBO:
11788.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.73 .. NELBO: 5312.75
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.72 .. NELBO:
11780.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.96 .. NELBO: 5335.98
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.5 .. NELBO:
11793.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.44 .. NELBO: 5351.46
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.03 .. NELBO:
11796.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.27 .. NELBO: 5353.29
*****

```

```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.01 .. NELBO:
11784.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.26 .. NELBO: 5347.27
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06112375986365006, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=78, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=78, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=78, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.9 .. Rec_loss: 12264.28 .. NELBO:
12353.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.81 .. Rec_loss: 5444.11 .. NELBO: 5451.92
*****
*****
Validation loss decreased (inf --> 10903.832031). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.39 .. Rec_loss: 12249.09 .. NELBO:
12257.48
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5432.65 .. NELBO: 5433.11
*****
*****
Validation loss decreased (10903.832031 --> 10866.224609). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 12210.87 .. NELBO:
12211.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5410.33 .. NELBO: 5410.42
*****
*****
Validation loss decreased (10866.224609 --> 10820.849609). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12141.76 .. NELBO:
12141.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.21 .. NELBO: 5378.24
*****
*****
Validation loss decreased (10820.849609 --> 10756.494141). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12046.23 .. NELBO:
12046.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.82 .. NELBO: 5341.84
*****
*****
Validation loss decreased (10756.494141 --> 10683.687500). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11937.9 .. NELBO:
11937.95
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.73 .. NELBO: 5311.75
*****
*****
Validation loss decreased (10683.687500 --> 10623.510742). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11843.07 .. NELBO:
11843.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.52 .. NELBO: 5300.54
*****
*****
Validation loss decreased (10623.510742 --> 10601.086914). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.5 .. NELBO:
11788.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.91 .. NELBO: 5312.93
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.13 .. NELBO:
11780.17
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.65 .. NELBO: 5336.67
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.27 .. NELBO:
11793.31
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.55 .. NELBO: 5352.57
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.88 .. NELBO:
11796.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.25 .. NELBO: 5354.27
*****
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.02 .. NELBO:
11785.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.88 .. NELBO: 5347.9
*****
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06112375986365006, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=78, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=78, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=78, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.27 .. Rec_loss: 12264.69 .. NELBO:
12350.96

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.38 .. Rec_loss: 5444.73 .. NELBO: 5453.11
*****
*****
Validation loss decreased (inf --> 10906.236328). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.99 .. Rec_loss: 12251.01 .. NELBO:
12260.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5433.81 .. NELBO: 5434.21
*****
*****
Validation loss decreased (10906.236328 --> 10868.405273). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12214.76 .. NELBO:
12215.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5412.54 .. NELBO: 5412.61
*****
*****
Validation loss decreased (10868.405273 --> 10825.216797). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12148.64 .. NELBO:
12148.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5381.24 .. NELBO: 5381.27
*****
*****
Validation loss decreased (10825.216797 --> 10762.526367). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12056.24 .. NELBO:
12056.29

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.94 .. NELBO: 5344.96
*****
*****
Validation loss decreased (10762.526367 --> 10689.917969). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11948.74 .. NELBO:
11948.78
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.75 .. NELBO: 5313.77
*****
*****
Validation loss decreased (10689.917969 --> 10627.533203). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11851.8 .. NELBO:
11851.84
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.29 .. NELBO: 5300.31
*****
*****
Validation loss decreased (10627.533203 --> 10600.618164). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.71 .. NELBO:
11792.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.43 .. NELBO: 5310.45
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.5 .. NELBO:
11780.54

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.7 .. NELBO: 5333.72
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.24 .. NELBO:
11792.28
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.74 .. NELBO: 5350.76
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11797.01 .. NELBO:
11797.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.73 .. NELBO: 5353.75
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.6 .. NELBO:
11786.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.0 .. NELBO: 5348.02
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 133
model: ETM(
    (t_drop): Dropout(p=0.06163309604245789, inplace=False)

```

```

(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=97, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=97, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=97, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 89.71 .. Rec_loss: 12264.14 .. NELBO:
12353.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.96 .. Rec_loss: 5444.42 .. NELBO: 5452.38
*****
*****
Validation loss decreased (inf --> 10904.766602). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.51 .. Rec_loss: 12249.55 .. NELBO:
12258.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5432.79 .. NELBO: 5433.2
*****
*****
Validation loss decreased (10904.766602 --> 10866.398438). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12210.92 .. NELBO:
12211.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.25 .. NELBO: 5410.33
*****
*****
Validation loss decreased (10866.398438 --> 10820.651367). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12141.63 .. NELBO:
12141.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.88 .. NELBO: 5377.91
*****
*****
Validation loss decreased (10820.651367 --> 10755.823242). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12045.22 .. NELBO:
12045.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.4 .. NELBO: 5341.42
*****
*****
Validation loss decreased (10755.823242 --> 10682.852539). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11937.51 .. NELBO:
11937.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.49 .. NELBO: 5311.51
*****
*****
Validation loss decreased (10682.852539 --> 10623.028320). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11842.77 .. NELBO:
11842.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.5 .. NELBO: 5300.52
*****
*****
Validation loss decreased (10623.028320 --> 10601.041992). Saving model ...

```

```

*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.82 .. NELBO:
11788.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.79 .. NELBO: 5312.81
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.6 .. NELBO:
11780.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.17 .. NELBO: 5336.19
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.4 .. NELBO:
11793.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.81 .. NELBO: 5351.83
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.06 .. NELBO:
11796.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.6 .. NELBO: 5353.62
*****
*****
EarlyStopping counter: 4 out of 5

```



```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.43 .. NELBO:
11784.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.47 .. NELBO: 5347.49
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06163309604245789, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=97, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=97, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=97, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 96.82 .. Rec_loss: 12264.28 .. NELBO:
12361.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.6 .. Rec_loss: 5444.41 .. NELBO: 5453.01
*****
*****
Validation loss decreased (inf --> 10906.025391). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.14 .. Rec_loss: 12249.76 .. NELBO:
12258.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5432.85 .. NELBO: 5433.26

```

```

*****
*****
Validation loss decreased (10906.025391 --> 10866.525391). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12211.43 .. NELBO:
12212.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.66 .. NELBO: 5410.74
*****
*****
Validation loss decreased (10866.525391 --> 10821.477539). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12143.02 .. NELBO:
12143.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.82 .. NELBO: 5378.85
*****
*****
Validation loss decreased (10821.477539 --> 10757.706055). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12048.55 .. NELBO:
12048.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.71 .. NELBO: 5342.73
*****
*****
Validation loss decreased (10757.706055 --> 10685.472656). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11942.67 .. NELBO:
11942.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.55 .. NELBO: 5312.57

```

```

*****
*****
Validation loss decreased (10685.472656 --> 10625.152344). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11847.46 .. NELBO:
11847.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.53 .. NELBO: 5300.55
*****
*****
Validation loss decreased (10625.152344 --> 10601.099609). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.31 .. NELBO:
11791.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.55 .. NELBO: 5311.57
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.62 .. NELBO:
11780.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.45 .. NELBO: 5334.47
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.26 .. NELBO:
11792.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.64 .. NELBO: 5350.66

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.06 .. NELBO:
11796.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.25 .. NELBO: 5353.27
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.25 .. NELBO:
11785.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.54 .. NELBO: 5347.56
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06163309604245789, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=97, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=97, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=97, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.86 .. Rec_loss: 12263.96 .. NELBO:
12352.82
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.91 .. Rec_loss: 5443.89 .. NELBO: 5451.8
*****
*****
Validation loss decreased (inf --> 10903.618164). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.6 .. Rec_loss: 12247.6 .. NELBO:
12256.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5431.3 .. NELBO: 5431.74
*****
*****
Validation loss decreased (10903.618164 --> 10863.467773). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12206.49 .. NELBO:
12207.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.8 .. NELBO: 5407.87
*****
*****
Validation loss decreased (10863.467773 --> 10815.743164). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12134.65 .. NELBO:
12134.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5374.84 .. NELBO: 5374.87
*****
*****
Validation loss decreased (10815.743164 --> 10749.731445). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12037.33 .. NELBO:
12037.38
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.5 .. NELBO: 5338.52
*****
*****
Validation loss decreased (10749.731445 --> 10677.047852). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11929.2 .. NELBO:
11929.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.74 .. NELBO: 5309.76
*****
*****
Validation loss decreased (10677.047852 --> 10619.524414). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11837.99 .. NELBO:
11838.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.6 .. NELBO: 5300.62
*****
*****
Validation loss decreased (10619.524414 --> 10601.253906). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11787.73 .. NELBO:
11787.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.27 .. NELBO: 5314.29
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11781.91 .. NELBO:
11781.96
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.39 .. NELBO: 5337.41
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.92 .. NELBO:
11793.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.84 .. NELBO: 5351.86
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11795.47 .. NELBO:
11795.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.77 .. NELBO: 5352.79
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11783.51 .. NELBO:
11783.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.42 .. NELBO: 5346.44
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 134
model: ETM(
  (t_drop): Dropout(p=0.059832116320987234, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)

```

```

(alphas): Linear(in_features=300, out_features=77, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=77, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=77, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1460.54 .. Rec_loss: 12264.49 .. NELBO:
13725.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 64.91 .. Rec_loss: 5446.21 .. NELBO:
5511.12
*****
*****
Validation loss decreased (inf --> 11022.235352). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 96.16 .. Rec_loss: 12255.4 .. NELBO:
12351.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 72.68 .. Rec_loss: 5438.39 .. NELBO:
5511.07
*****
*****
Validation loss decreased (11022.235352 --> 11022.131836). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 144.01 .. Rec_loss: 12231.29 .. NELBO:
12375.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 52.34 .. Rec_loss: 5423.91 .. NELBO:
5476.25
*****
*****

```



```

Validation loss decreased (11022.131836 --> 10952.515625). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 105.88 .. Rec_loss: 12187.79 .. NELBO:
12293.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 45.54 .. Rec_loss: 5403.36 .. NELBO: 5448.9
*****
*****
Validation loss decreased (10952.515625 --> 10897.788086). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 96.18 .. Rec_loss: 12122.32 .. NELBO:
12218.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 43.86 .. Rec_loss: 5373.14 .. NELBO: 5417.0
*****
*****
Validation loss decreased (10897.788086 --> 10834.001953). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 90.47 .. Rec_loss: 12033.2 .. NELBO:
12123.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 40.53 .. Rec_loss: 5340.62 .. NELBO:
5381.15
*****
*****
Validation loss decreased (10834.001953 --> 10762.302734). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 84.96 .. Rec_loss: 11935.41 .. NELBO:
12020.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 36.88 .. Rec_loss: 5312.77 .. NELBO:
5349.65

```

```

*****
*****
Validation loss decreased (10762.302734 --> 10699.297852). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 76.05 .. Rec_loss: 11845.49 .. NELBO:
11921.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 32.27 .. Rec_loss: 5300.18 .. NELBO:
5332.45
*****
*****
Validation loss decreased (10699.297852 --> 10664.909180). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 66.6 .. Rec_loss: 11789.44 .. NELBO:
11856.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 25.99 .. Rec_loss: 5307.89 .. NELBO:
5333.88
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 54.19 .. Rec_loss: 11774.96 .. NELBO:
11829.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 20.55 .. Rec_loss: 5321.41 .. NELBO:
5341.96
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 44.63 .. Rec_loss: 11777.21 .. NELBO:
11821.84
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 17.74 .. Rec_loss: 5336.64 .. NELBO:
5354.38
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 40.86 .. Rec_loss: 11779.21 .. NELBO:
11820.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.04 .. Rec_loss: 5341.7 .. NELBO: 5359.74
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 43.0 .. Rec_loss: 11774.44 .. NELBO:
11817.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 16.83 .. Rec_loss: 5338.39 .. NELBO:
5355.22
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.059832116320987234, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=77, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=77, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=77, bias=True)
)
*****

```

```

*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1893.91 .. Rec_loss: 12264.2 .. NELBO:
14158.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 30.1 .. Rec_loss: 5445.59 .. NELBO: 5475.69
*****
*****
Validation loss decreased (inf --> 10951.379883). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 41.79 .. Rec_loss: 12254.02 .. NELBO:
12295.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 21.98 .. Rec_loss: 5436.82 .. NELBO: 5458.8
*****
*****
Validation loss decreased (10951.379883 --> 10917.601562). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 45.49 .. Rec_loss: 12226.07 .. NELBO:
12271.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 18.19 .. Rec_loss: 5420.1 .. NELBO: 5438.29
*****
*****
Validation loss decreased (10917.601562 --> 10876.579102). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 34.09 .. Rec_loss: 12173.25 .. NELBO:
12207.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 12.43 .. Rec_loss: 5394.22 .. NELBO:
5406.65
*****
*****
Validation loss decreased (10876.579102 --> 10813.288086). Saving model ...

```

```

*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 23.67 .. Rec_loss: 12094.21 .. NELBO:
12117.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.79 .. Rec_loss: 5361.0 .. NELBO: 5369.79
*****
*****
Validation loss decreased (10813.288086 --> 10739.595703). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 17.62 .. Rec_loss: 11995.35 .. NELBO:
12012.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.26 .. Rec_loss: 5327.18 .. NELBO: 5334.44
*****
*****
Validation loss decreased (10739.595703 --> 10668.873047). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 14.42 .. Rec_loss: 11892.35 .. NELBO:
11906.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.89 .. Rec_loss: 5304.11 .. NELBO: 5310.0
*****
*****
Validation loss decreased (10668.873047 --> 10620.000000). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 11.72 .. Rec_loss: 11812.77 .. NELBO:
11824.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.63 .. Rec_loss: 5302.41 .. NELBO: 5307.04
*****
*****
Validation loss decreased (10620.000000 --> 10614.083008). Saving model ...

```

```
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 9.11 .. Rec_loss: 11777.98 .. NELBO:
11787.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.5 .. Rec_loss: 5320.89 .. NELBO: 5324.39
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 6.85 .. Rec_loss: 11782.78 .. NELBO:
11789.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.5 .. Rec_loss: 5342.75 .. NELBO: 5345.25
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 4.91 .. Rec_loss: 11793.98 .. NELBO:
11798.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.86 .. Rec_loss: 5352.78 .. NELBO: 5354.64
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 3.78 .. Rec_loss: 11790.93 .. NELBO:
11794.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.64 .. Rec_loss: 5350.49 .. NELBO: 5352.13
*****
*****
EarlyStopping counter: 4 out of 5
```

```

*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 3.56 .. Rec_loss: 11776.96 .. NELBO:
11780.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.65 .. Rec_loss: 5343.09 .. NELBO: 5344.74
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.059832116320987234, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=77, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=77, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=77, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1353.74 .. Rec_loss: 12264.4 .. NELBO:
13618.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.85 .. Rec_loss: 5445.46 .. NELBO:
5470.31
*****
*****
Validation loss decreased (inf --> 10940.610352). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 31.19 .. Rec_loss: 12253.41 .. NELBO:
12284.6
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 8.86 .. Rec_loss: 5436.33 .. NELBO: 5445.19
*****
*****
Validation loss decreased (10940.610352 --> 10890.390625). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 19.46 .. Rec_loss: 12223.93 .. NELBO:
12243.39
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.45 .. Rec_loss: 5418.6 .. NELBO: 5428.05
*****
*****
Validation loss decreased (10890.390625 --> 10856.088867). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 18.67 .. Rec_loss: 12167.92 .. NELBO:
12186.59
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.52 .. Rec_loss: 5391.14 .. NELBO: 5398.66
*****
*****
Validation loss decreased (10856.088867 --> 10797.318359). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 14.83 .. Rec_loss: 12085.07 .. NELBO:
12099.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.53 .. Rec_loss: 5356.79 .. NELBO: 5362.32
*****
*****
Validation loss decreased (10797.318359 --> 10724.643555). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 10.91 .. Rec_loss: 11982.09 .. NELBO:
11993.0
*****
*****
*****

```



```

VALIDATION .. LR: 0.005 .. KL_theta: 4.27 .. Rec_loss: 5323.31 .. NELBO: 5327.58
*****
*****
Validation loss decreased (10724.643555 --> 10655.153320). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 8.57 .. Rec_loss: 11879.49 .. NELBO:
11888.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.52 .. Rec_loss: 5302.53 .. NELBO: 5306.05
*****
*****
*****
Validation loss decreased (10655.153320 --> 10612.085938). Saving model ...
*****
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 7.22 .. Rec_loss: 11804.75 .. NELBO:
11811.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.99 .. Rec_loss: 5304.34 .. NELBO: 5307.33
*****
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 6.05 .. Rec_loss: 11777.09 .. NELBO:
11783.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.43 .. Rec_loss: 5325.2 .. NELBO: 5327.63
*****
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 4.9 .. Rec_loss: 11785.66 .. NELBO:
11790.56
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 1.9 .. Rec_loss: 5346.55 .. NELBO: 5348.45
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 3.84 .. Rec_loss: 11796.23 .. NELBO:
11800.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.5 .. Rec_loss: 5354.52 .. NELBO: 5356.02
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 3.13 .. Rec_loss: 11791.32 .. NELBO:
11794.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 5350.72 .. NELBO: 5351.99
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 135
model: ETM(
  (t_drop): Dropout(p=0.06255768196868168, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 93.58 .. Rec_loss: 12264.17 .. NELBO:
12357.75

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.61 .. Rec_loss: 5444.03 .. NELBO: 5452.64
*****
*****
Validation loss decreased (inf --> 10905.280273). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.25 .. Rec_loss: 12248.19 .. NELBO:
12257.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5431.76 .. NELBO: 5432.21
*****
*****
Validation loss decreased (10905.280273 --> 10864.418945). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12207.87 .. NELBO:
12208.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.59 .. NELBO: 5408.67
*****
*****
Validation loss decreased (10864.418945 --> 10817.343750). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12136.85 .. NELBO:
12136.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.95 .. NELBO: 5375.98
*****
*****
Validation loss decreased (10817.343750 --> 10751.962891). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12040.6 .. NELBO:
12040.65

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.75 .. NELBO: 5339.77
*****
*****
Validation loss decreased (10751.962891 --> 10679.542969). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11933.02 .. NELBO:
11933.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.57 .. NELBO: 5310.59
*****
*****
Validation loss decreased (10679.542969 --> 10621.171875). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.08 .. NELBO:
11841.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.39 .. NELBO: 5300.41
*****
*****
Validation loss decreased (10621.171875 --> 10600.817383). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.4 .. NELBO:
11788.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.0 .. NELBO: 5313.02
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.89 .. NELBO:
11780.93

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.04 .. NELBO: 5336.06
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.18 .. NELBO:
11793.22
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.32 .. NELBO: 5351.34
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.87 .. NELBO:
11795.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.06 .. NELBO: 5353.08
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.83 .. NELBO:
11783.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.1 .. NELBO: 5347.12
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06255768196868168, inplace=False)
  (theta_act): Sigmoid()

```

```

(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=84, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 85.47 .. Rec_loss: 12264.13 .. NELBO:
12349.6
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.7 .. Rec_loss: 5443.97 .. NELBO: 5451.67
*****
*****
Validation loss decreased (inf --> 10903.338867). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.49 .. Rec_loss: 12247.62 .. NELBO:
12256.11
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5431.36 .. NELBO: 5431.84
*****
*****
Validation loss decreased (10903.338867 --> 10863.677734). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12206.65 .. NELBO:
12207.31
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.9 .. NELBO: 5407.97
*****
*****
Validation loss decreased (10863.677734 --> 10815.946289). Saving model ...
*****

```

```

*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12135.28 .. NELBO:
12135.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.97 .. NELBO: 5374.99
*****
*****
Validation loss decreased (10815.946289 --> 10749.997070). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12037.39 .. NELBO:
12037.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.67 .. NELBO: 5338.69
*****
*****
Validation loss decreased (10749.997070 --> 10677.375000). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11929.5 .. NELBO:
11929.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.85 .. NELBO: 5309.87
*****
*****
Validation loss decreased (10677.375000 --> 10619.728516). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11838.17 .. NELBO:
11838.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.54 .. NELBO: 5300.56
*****
*****
Validation loss decreased (10619.728516 --> 10601.122070). Saving model ...
*****

```

```

*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.4 .. NELBO:
11787.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.05 .. NELBO: 5314.07
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.31 .. NELBO:
11781.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.25 .. NELBO: 5337.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.96 .. NELBO:
11794.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.95 .. NELBO: 5351.97
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.78 .. NELBO:
11795.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.04 .. NELBO: 5353.06
*****
*****
EarlyStopping counter: 4 out of 5
*****

```



```

*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.63 .. NELBO:
11783.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.74 .. NELBO: 5346.76
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06255768196868168, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 93.86 .. Rec_loss: 12264.6 .. NELBO:
12358.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.49 .. Rec_loss: 5444.3 .. NELBO: 5452.79
*****
*****
Validation loss decreased (inf --> 10905.578125). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.16 .. Rec_loss: 12249.59 .. NELBO:
12258.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5433.06 .. NELBO: 5433.49
*****

```

```

*****
Validation loss decreased (10905.578125 --> 10866.977539). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12213.14 .. NELBO:
12213.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.47 .. NELBO: 5411.54
*****
*****
Validation loss decreased (10866.977539 --> 10823.073242). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12147.05 .. NELBO:
12147.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5380.15 .. NELBO: 5380.17
*****
*****
Validation loss decreased (10823.073242 --> 10760.342773). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12053.85 .. NELBO:
12053.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.09 .. NELBO: 5344.11
*****
*****
Validation loss decreased (10760.342773 --> 10688.215820). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11947.35 .. NELBO:
11947.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.22 .. NELBO: 5313.24
*****

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```

*****
Validation loss decreased (10688.215820 --> 10626.462891). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11851.38 .. NELBO:
11851.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.89 .. NELBO: 5299.91
*****
*****
Validation loss decreased (10626.462891 --> 10599.821289). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.69 .. NELBO:
11792.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.97 .. NELBO: 5309.99
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.13 .. NELBO:
11780.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.15 .. NELBO: 5333.17
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.46 .. NELBO:
11791.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.41 .. NELBO: 5350.43
*****

```

```

*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.32 .. NELBO:
11796.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.8 .. NELBO: 5353.82
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.1 .. NELBO:
11786.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.34 .. NELBO: 5348.36
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 136
model: ETM(
  (t_drop): Dropout(p=0.06225122465533978, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=99, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=99, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=99, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 94.44 .. Rec_loss: 12264.75 .. NELBO:
12359.19
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.35 .. Rec_loss: 5444.47 .. NELBO: 5452.82
*****
*****
Validation loss decreased (inf --> 10905.655273). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.11 .. Rec_loss: 12249.79 .. NELBO:
12258.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.71 .. NELBO: 5433.16
*****
*****
Validation loss decreased (10905.655273 --> 10866.329102). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12211.11 .. NELBO:
12211.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.14 .. NELBO: 5410.22
*****
*****
Validation loss decreased (10866.329102 --> 10820.433594). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12141.95 .. NELBO:
12142.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.74 .. NELBO: 5377.77
*****
*****
Validation loss decreased (10820.433594 --> 10755.530273). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12045.66 .. NELBO:
12045.72
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.23 .. NELBO: 5341.25
*****
*****
Validation loss decreased (10755.530273 --> 10682.497070). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11937.75 .. NELBO:
11937.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.33 .. NELBO: 5311.35
*****
*****
Validation loss decreased (10682.497070 --> 10622.708984). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11843.34 .. NELBO:
11843.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.48 .. NELBO: 5300.5
*****
*****
Validation loss decreased (10622.708984 --> 10601.003906). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.88 .. NELBO:
11789.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.95 .. NELBO: 5312.97
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.58 .. NELBO:
11781.62
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.21 .. NELBO: 5336.23
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.69 .. NELBO:
11793.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.5 .. NELBO: 5351.52
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.03 .. NELBO:
11796.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.03 .. NELBO: 5353.05
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.23 .. NELBO:
11784.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.86 .. NELBO: 5346.88
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06225122465533978, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=99, bias=False)

```

```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=99, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=99, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 93.62 .. Rec_loss: 12264.53 .. NELB0:
12358.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.86 .. Rec_loss: 5444.52 .. NELB0: 5453.38
*****
*****
Validation loss decreased (inf --> 10906.760742). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.57 .. Rec_loss: 12250.17 .. NELB0:
12259.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5433.33 .. NELB0: 5433.73
*****
*****
Validation loss decreased (10906.760742 --> 10867.457031). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12213.61 .. NELB0:
12214.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5411.6 .. NELB0: 5411.66
*****
*****
Validation loss decreased (10867.457031 --> 10823.331055). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12146.53 .. NELB0:

```



```
12146.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5380.07 .. NELBO: 5380.09
*****
*****
Validation loss decreased (10823.331055 --> 10760.194336). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12052.79 .. NELBO:
12052.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.96 .. NELBO: 5343.98
*****
*****
Validation loss decreased (10760.194336 --> 10687.962891). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11946.53 .. NELBO:
11946.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.34 .. NELBO: 5313.36
*****
*****
Validation loss decreased (10687.962891 --> 10626.709961). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11850.38 .. NELBO:
11850.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.47 .. NELBO: 5300.49
*****
*****
Validation loss decreased (10626.709961 --> 10600.979492). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.87 .. NELBO:
```

```
11792.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.78 .. NELBO: 5310.8
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.74 .. NELBO:
11780.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.66 .. NELBO: 5333.68
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.31 .. NELBO:
11792.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.36 .. NELBO: 5350.38
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.56 .. NELBO:
11796.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.35 .. NELBO: 5353.37
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.05 .. NELBO:
```

```

11786.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.72 .. NELBO: 5347.74
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06225122465533978, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=99, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=99, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=99, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 101.3 .. Rec_loss: 12264.11 .. NELBO:
12365.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.0 .. Rec_loss: 5444.28 .. NELBO: 5453.28
*****
*****
Validation loss decreased (inf --> 10906.551758). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.79 .. Rec_loss: 12248.8 .. NELBO:
12258.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5432.47 .. NELBO: 5433.0
*****
*****
Validation loss decreased (10906.551758 --> 10865.991211). Saving model ...

```

```

*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 12209.94 .. NELBO:
12210.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5409.98 .. NELBO: 5410.08
*****
*****
Validation loss decreased (10865.991211 --> 10820.154297). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 12140.71 .. NELBO:
12140.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5377.77 .. NELBO: 5377.81
*****
*****
Validation loss decreased (10820.154297 --> 10755.606445). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 12044.6 .. NELBO:
12044.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5341.5 .. NELBO: 5341.53
*****
*****
Validation loss decreased (10755.606445 --> 10683.045898). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11937.23 .. NELBO:
11937.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5311.7 .. NELBO: 5311.73
*****
*****
Validation loss decreased (10683.045898 --> 10623.453125). Saving model ...

```

```
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11843.3 .. NELBO:
11843.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5300.65 .. NELBO: 5300.68
*****
*****
Validation loss decreased (10623.453125 --> 10601.359375). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11789.16 .. NELBO:
11789.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5312.8 .. NELBO: 5312.83
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11780.7 .. NELBO:
11780.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5336.09 .. NELBO: 5336.12
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.41 .. NELBO:
11793.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5351.75 .. NELBO: 5351.78
*****
*****
EarlyStopping counter: 3 out of 5
```

```

*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.45 .. NELBO:
11796.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.59 .. NELBO: 5353.61
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11784.91 .. NELBO:
11784.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.47 .. NELBO: 5347.49
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 137
model: ETM(
  (t_drop): Dropout(p=0.06108922247649057, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=80, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=80, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=80, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 12263.78 .. NELBO:
12264.11
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.93 .. Rec_loss: 5443.1 .. NELBO: 5444.03
*****
*****
Validation loss decreased (inf --> 10888.065430). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 1.72 .. Rec_loss: 12243.49 .. NELBO:
12245.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5427.26 .. NELBO: 5427.28
*****
*****
Validation loss decreased (10888.065430 --> 10854.550781). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 12192.92 .. NELBO:
12193.13
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.25 .. Rec_loss: 5399.84 .. NELBO: 5400.09
*****
*****
Validation loss decreased (10854.550781 --> 10800.180664). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 12110.95 .. NELBO:
12111.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5363.99 .. NELBO: 5364.14
*****
*****
Validation loss decreased (10800.180664 --> 10728.287109). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12005.29 .. NELBO:
12005.87
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 1.28 .. Rec_loss: 5327.72 .. NELBO: 5329.0
*****
*****
Validation loss decreased (10728.287109 --> 10657.998047). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 2.03 .. Rec_loss: 11897.24 .. NELBO:
11899.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5304.4 .. NELBO: 5304.74
*****
*****
Validation loss decreased (10657.998047 --> 10609.477539). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 11818.31 .. NELBO:
11818.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5302.77 .. NELBO: 5302.89
*****
*****
Validation loss decreased (10609.477539 --> 10605.791992). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 11783.08 .. NELBO:
11783.3
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5320.46 .. NELBO: 5320.76
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.74 .. Rec_loss: 11785.1 .. NELBO:
11785.84
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5341.07 .. NELBO: 5341.56
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 1.8 .. Rec_loss: 11792.71 .. NELBO:
11794.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.34 .. Rec_loss: 5349.3 .. NELBO: 5350.64
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 2.07 .. Rec_loss: 11787.19 .. NELBO:
11789.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.8 .. Rec_loss: 5346.24 .. NELBO: 5348.04
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 4.16 .. Rec_loss: 11771.48 .. NELBO:
11775.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.18 .. Rec_loss: 5338.23 .. NELBO: 5341.41
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06108922247649057, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=80, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)

```

```

(1): SELU()
(2): Linear(in_features=800, out_features=800, bias=True)
(3): SELU()
)
(mu_q_theta): Linear(in_features=800, out_features=80, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=80, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 12263.7 .. NELBO:
12263.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.24 .. Rec_loss: 5443.0 .. NELBO: 5444.24
*****
*****
Validation loss decreased (inf --> 10888.494141). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.79 .. Rec_loss: 12243.48 .. NELBO:
12245.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5427.33 .. NELBO: 5427.35
*****
*****
Validation loss decreased (10888.494141 --> 10854.702148). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12193.44 .. NELBO:
12193.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 5399.99 .. NELBO: 5400.31
*****
*****
Validation loss decreased (10854.702148 --> 10800.622070). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 12110.98 .. NELBO:
12111.44
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5364.16 .. NELBO: 5364.6
*****
*****
Validation loss decreased (10800.622070 --> 10729.198242). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.69 .. Rec_loss: 12005.42 .. NELBO:
12007.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.21 .. Rec_loss: 5327.65 .. NELBO: 5329.86
*****
*****
Validation loss decreased (10729.198242 --> 10659.724609). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.69 .. Rec_loss: 11898.6 .. NELBO:
11901.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5304.42 .. NELBO: 5304.63
*****
*****
Validation loss decreased (10659.724609 --> 10609.268555). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 11818.66 .. NELBO:
11819.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5302.6 .. NELBO: 5303.03
*****
*****
Validation loss decreased (10609.268555 --> 10606.051758). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 11782.95 .. NELBO:
11783.67
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5320.54 .. NELBO: 5320.58
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 11785.07 .. NELBO:
11785.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.08 .. Rec_loss: 5340.85 .. NELBO: 5341.93
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.91 .. Rec_loss: 11792.57 .. NELBO:
11794.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.36 .. Rec_loss: 5349.65 .. NELBO: 5351.01
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 2.69 .. Rec_loss: 11786.46 .. NELBO:
11789.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.44 .. Rec_loss: 5345.13 .. NELBO: 5348.57
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 6.94 .. Rec_loss: 11769.12 .. NELBO:
11776.06
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.64 .. Rec_loss: 5340.03 .. NELBO: 5342.67
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06108922247649057, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=80, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=80, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=80, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 12263.76 .. NELBO:
12264.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.09 .. Rec_loss: 5442.99 .. NELBO: 5444.08
*****
*****
Validation loss decreased (inf --> 10888.164062). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.51 .. Rec_loss: 12243.35 .. NELBO:
12244.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5427.26 .. NELBO: 5427.28
*****
*****
Validation loss decreased (10888.164062 --> 10854.560547). Saving model ...
*****
*****

```

```

Epoch----->3 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 12192.94 .. NELBO:
12193.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5399.95 .. NELBO: 5400.28
*****
*****
Validation loss decreased (10854.560547 --> 10800.546875). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 12110.98 .. NELBO:
12111.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5364.27 .. NELBO: 5364.65
*****
*****
Validation loss decreased (10800.546875 --> 10729.291016). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 1.18 .. Rec_loss: 12005.8 .. NELBO:
12006.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 5328.08 .. NELBO: 5329.68
*****
*****
Validation loss decreased (10729.291016 --> 10659.364258). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 1.99 .. Rec_loss: 11899.46 .. NELBO:
11901.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5304.71 .. NELBO: 5304.89
*****
*****
Validation loss decreased (10659.364258 --> 10609.774414). Saving model ...
*****
*****

```

```

Epoch----->7 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 11819.78 .. NELB0:
11820.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5302.65 .. NELB0: 5302.99
*****
*****
Validation loss decreased (10609.774414 --> 10605.980469). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 11783.77 .. NELB0:
11784.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5320.13 .. NELB0: 5320.33
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 11785.18 .. NELB0:
11785.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5340.88 .. NELB0: 5341.34
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 11794.08 .. NELB0:
11794.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5350.17 .. NELB0: 5350.65
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****

```

```

Epoch---->11 .. LR: 0.005 .. KL_theta: 1.15 .. Rec_loss: 11789.01 .. NELBO:
11790.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.97 .. Rec_loss: 5346.29 .. NELBO: 5348.26
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.72 .. Rec_loss: 11772.73 .. NELBO:
11776.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.12 .. Rec_loss: 5340.72 .. NELBO: 5341.84
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 138
model: ETM(
  (t_drop): Dropout(p=0.06136406371717977, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 81.08 .. Rec_loss: 12263.8 .. NELBO:
12344.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.78 .. Rec_loss: 5443.91 .. NELBO: 5451.69
*****
*****

```



```

*****
Validation loss decreased (inf --> 10903.392578). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.46 .. Rec_loss: 12247.73 .. NELBO:
12256.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5431.34 .. NELBO: 5431.75
*****
*****
Validation loss decreased (10903.392578 --> 10863.512695). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12206.29 .. NELBO:
12206.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.63 .. NELBO: 5407.69
*****
*****
Validation loss decreased (10863.512695 --> 10815.388672). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12133.67 .. NELBO:
12133.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.48 .. NELBO: 5374.5
*****
*****
Validation loss decreased (10815.388672 --> 10748.995117). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12035.92 .. NELBO:
12035.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.11 .. NELBO: 5338.12
*****

```

```

*****
Validation loss decreased (10748.995117 --> 10676.245117). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11928.27 .. NELBO:
11928.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.45 .. NELBO: 5309.46
*****
*****
Validation loss decreased (10676.245117 --> 10618.924805). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11836.47 .. NELBO:
11836.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.51 .. NELBO: 5300.52
*****
*****
Validation loss decreased (10618.924805 --> 10601.046875). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.68 .. NELBO:
11786.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5314.35 .. NELBO: 5314.36
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.55 .. NELBO:
11781.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.53 .. NELBO: 5337.54
*****

```

```

*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.85 .. NELBO:
11793.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.99 .. NELBO: 5352.0
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.33 .. NELBO:
11795.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.96 .. NELBO: 5352.97
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.12 .. NELBO:
11783.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.64 .. NELBO: 5346.65
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06136406371717977, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
  )
)

```

```

    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 71.12 .. Rec_loss: 12264.48 .. NELBO:
12335.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.33 .. Rec_loss: 5444.29 .. NELBO: 5451.62
*****
*****
Validation loss decreased (inf --> 10903.226562). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.01 .. Rec_loss: 12249.04 .. NELBO:
12257.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5432.23 .. NELBO: 5432.58
*****
*****
Validation loss decreased (10903.226562 --> 10865.167969). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12209.58 .. NELBO:
12210.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5409.21 .. NELBO: 5409.27
*****
*****
Validation loss decreased (10865.167969 --> 10818.532227). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12139.16 .. NELBO:
12139.25
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.47 .. NELBO: 5376.49
*****
*****
Validation loss decreased (10818.532227 --> 10752.974609). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12042.17 .. NELBO:
12042.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.97 .. NELBO: 5339.99
*****
*****
Validation loss decreased (10752.974609 --> 10679.962891). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11934.21 .. NELBO:
11934.24
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.53 .. NELBO: 5310.54
*****
*****
Validation loss decreased (10679.962891 --> 10621.094727). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11841.17 .. NELBO:
11841.2
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.43 .. NELBO: 5300.44
*****
*****
Validation loss decreased (10621.094727 --> 10600.892578). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.67 .. NELBO:
11788.7
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.45 .. NELBO: 5313.46
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.86 .. NELBO:
11781.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.74 .. NELBO: 5336.76
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.9 .. NELBO:
11793.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.78 .. NELBO: 5351.8
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.86 .. NELBO:
11795.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.15 .. NELBO: 5353.16
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.76 .. NELBO:
11783.79
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.94 .. NELBO: 5346.95
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06136406371717977, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 82.45 .. Rec_loss: 12264.58 .. NELBO:
12347.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.4 .. Rec_loss: 5444.43 .. NELBO: 5451.83
*****
*****
Validation loss decreased (inf --> 10903.654297). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.02 .. Rec_loss: 12250.11 .. NELBO:
12258.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5433.16 .. NELBO: 5433.58
*****
*****
Validation loss decreased (10903.654297 --> 10867.167969). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12212.99 .. NELBO:
12213.59

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```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.3 .. NELBO: 5411.37
*****
*****
Validation loss decreased (10867.167969 --> 10822.748047). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12145.49 .. NELBO:
12145.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.54 .. NELBO: 5379.57
*****
*****
Validation loss decreased (10822.748047 --> 10759.127930). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12051.49 .. NELBO:
12051.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.17 .. NELBO: 5343.19
*****
*****
Validation loss decreased (10759.127930 --> 10686.383789). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11944.08 .. NELBO:
11944.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.52 .. NELBO: 5312.54
*****
*****
Validation loss decreased (10686.383789 --> 10625.071289). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11848.3 .. NELBO:
11848.34

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.05 .. NELBO: 5300.07
*****
*****
Validation loss decreased (10625.071289 --> 10600.147461). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.31 .. NELBO:
11790.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.12 .. NELBO: 5311.14
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.3 .. NELBO:
11780.34
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.51 .. NELBO: 5334.53
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.25 .. NELBO:
11792.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.21 .. NELBO: 5351.23
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.51 .. NELBO:
11796.55

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.96 .. NELBO: 5353.98
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.72 .. NELBO:
11785.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.17 .. NELBO: 5348.19
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 139
model: ETM(
  (t_drop): Dropout(p=0.04620270673046688, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 81.51 .. Rec_loss: 12263.85 .. NELBO:
12345.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.21 .. Rec_loss: 5444.26 .. NELBO: 5451.47
*****
*****
Validation loss decreased (inf --> 10902.936523). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.76 .. Rec_loss: 12248.91 .. NELBO:
12256.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5432.58 .. NELBO: 5432.95
*****
*****
Validation loss decreased (10902.936523 --> 10865.908203). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12210.29 .. NELBO:
12210.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.43 .. NELBO: 5410.5
*****
*****
Validation loss decreased (10865.908203 --> 10821.001953). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12142.42 .. NELBO:
12142.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.63 .. NELBO: 5378.66
*****
*****
Validation loss decreased (10821.001953 --> 10757.302734). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12047.65 .. NELBO:
12047.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.55 .. NELBO: 5342.57
*****
*****
Validation loss decreased (10757.302734 --> 10685.138672). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11940.31 .. NELBO:
11940.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.43 .. NELBO: 5312.45
*****
*****
Validation loss decreased (10685.138672 --> 10624.901367). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11845.95 .. NELBO:
11845.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.5 .. NELBO: 5300.52
*****
*****
Validation loss decreased (10624.901367 --> 10601.033203). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.71 .. NELBO:
11789.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.71 .. NELBO: 5311.73
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.62 .. NELBO:
11779.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.88 .. NELBO: 5334.9
*****
*****
EarlyStopping counter: 2 out of 5

```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.14 .. NELBO:
11792.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.3 .. NELBO: 5351.32
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.47 .. NELBO:
11796.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.92 .. NELBO: 5353.94
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.87 .. NELBO:
11785.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.06 .. NELBO: 5348.08
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04620270673046688, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
)

```

```

(mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 85.44 .. Rec_loss: 12264.16 .. NELBO:
12349.6
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.97 .. Rec_loss: 5443.83 .. NELBO: 5451.8
*****
*****
Validation loss decreased (inf --> 10903.594727). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.59 .. Rec_loss: 12247.69 .. NELBO:
12256.28
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5431.58 .. NELBO: 5432.02
*****
*****
Validation loss decreased (10903.594727 --> 10864.035156). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12207.95 .. NELBO:
12208.58
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.58 .. NELBO: 5408.66
*****
*****
Validation loss decreased (10864.035156 --> 10817.327148). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12138.0 .. NELBO:
12138.12
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.9 .. NELBO: 5375.93

```

```

*****
*****
Validation loss decreased (10817.327148 --> 10751.861328). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12041.59 .. NELBO:
12041.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.51 .. NELBO: 5339.53
*****
*****
Validation loss decreased (10751.861328 --> 10679.055664). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11932.72 .. NELBO:
11932.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.17 .. NELBO: 5310.19
*****
*****
Validation loss decreased (10679.055664 --> 10620.375000). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11840.64 .. NELBO:
11840.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.08 .. NELBO: 5300.1
*****
*****
Validation loss decreased (10620.375000 --> 10600.193359). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.2 .. NELBO:
11788.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.06 .. NELBO: 5313.08

```

```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.39 .. NELBO:
11781.43
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.45 .. NELBO: 5336.47
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.49 .. NELBO:
11793.53
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.74 .. NELBO: 5351.76
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.0 .. NELBO:
11796.04
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.23 .. NELBO: 5353.25
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.78 .. NELBO:
11783.82
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.06 .. NELBO: 5347.08

```



```

*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04620270673046688, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=73, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=73, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=73, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 90.3 .. Rec_loss: 12264.19 .. NELBO:
12354.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.93 .. Rec_loss: 5444.2 .. NELBO: 5452.13
*****
*****
Validation loss decreased (inf --> 10904.262695). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.51 .. Rec_loss: 12249.02 .. NELBO:
12257.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.91 .. NELBO: 5433.36
*****
*****
Validation loss decreased (10904.262695 --> 10866.724609). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12211.66 .. NELBO:
12212.32
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5411.14 .. NELBO: 5411.22
*****
*****
Validation loss decreased (10866.724609 --> 10822.445312). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12145.26 .. NELBO:
12145.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.78 .. NELBO: 5379.8
*****
*****
Validation loss decreased (10822.445312 --> 10759.611328). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12051.76 .. NELBO:
12051.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.91 .. NELBO: 5343.93
*****
*****
Validation loss decreased (10759.611328 --> 10687.857422). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11945.23 .. NELBO:
11945.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.36 .. NELBO: 5313.37
*****
*****
Validation loss decreased (10687.857422 --> 10626.750977). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11849.77 .. NELBO:
11849.8
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.31 .. NELBO: 5300.32
*****
*****
Validation loss decreased (10626.750977 --> 10600.650391). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.52 .. NELBO:
11791.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.39 .. NELBO: 5310.4
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.29 .. NELBO:
11779.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5333.39 .. NELBO: 5333.4
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.59 .. NELBO:
11791.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5350.52 .. NELBO: 5350.53
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.51 .. NELBO:
11796.54
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.83 .. NELBO: 5353.84
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.13 .. NELBO:
11786.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.37 .. NELBO: 5348.38
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 140
model: ETM(
  (t_drop): Dropout(p=0.04622161566001642, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=59, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=59, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=59, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 71.44 .. Rec_loss: 12264.2 .. NELBO:
12335.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.36 .. Rec_loss: 5443.96 .. NELBO: 5451.32
*****
*****
Validation loss decreased (inf --> 10902.630859). Saving model ...
*****
*****

```

```

Epoch----->2 .. LR: 0.005 .. KL_theta: 7.84 .. Rec_loss: 12248.74 .. NELBO:
12256.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5432.44 .. NELBO: 5432.79
*****
*****
Validation loss decreased (10902.630859 --> 10865.576172). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 12210.91 .. NELBO:
12211.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.43 .. NELBO: 5410.5
*****
*****
Validation loss decreased (10865.576172 --> 10820.983398). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12143.11 .. NELBO:
12143.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.87 .. NELBO: 5378.89
*****
*****
Validation loss decreased (10820.983398 --> 10757.786133). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12049.21 .. NELBO:
12049.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5342.99 .. NELBO: 5343.0
*****
*****
Validation loss decreased (10757.786133 --> 10686.000977). Saving model ...
*****
*****

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```

Epoch----->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11943.63 .. NELBO:
11943.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.69 .. NELBO: 5312.7
*****
*****
Validation loss decreased (10686.000977 --> 10625.414062). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11848.27 .. NELBO:
11848.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.14 .. NELBO: 5300.15
*****
*****
Validation loss decreased (10625.414062 --> 10600.301758). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.51 .. NELBO:
11791.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.68 .. NELBO: 5310.7
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.1 .. NELBO:
11780.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.74 .. NELBO: 5333.76
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

```

```

Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.88 .. NELBO:
11791.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.49 .. NELBO: 5350.51
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.12 .. NELBO:
11796.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.48 .. NELBO: 5353.49
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.06 .. NELBO:
11786.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.88 .. NELBO: 5347.89
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04622161566001642, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=59, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=59, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=59, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 67.73 .. Rec_loss: 12263.78 .. NELBO:
12331.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.89 .. Rec_loss: 5443.32 .. NELBO: 5450.21
*****
*****
Validation loss decreased (inf --> 10900.426758). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.53 .. Rec_loss: 12246.88 .. NELBO:
12254.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5430.84 .. NELBO: 5431.22
*****
*****
Validation loss decreased (10900.426758 --> 10862.428711). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12205.91 .. NELBO:
12206.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.33 .. NELBO: 5407.39
*****
*****
Validation loss decreased (10862.428711 --> 10814.779297). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12134.48 .. NELBO:
12134.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.51 .. NELBO: 5374.53
*****
*****

```



```
Validation loss decreased (10814.779297 --> 10749.057617). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12037.38 .. NELBO:
12037.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.34 .. NELBO: 5338.35
*****
*****
Validation loss decreased (10749.057617 --> 10676.702148). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11930.02 .. NELBO:
11930.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.54 .. NELBO: 5309.55
*****
*****
Validation loss decreased (10676.702148 --> 10619.115234). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.42 .. NELBO:
11838.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.04 .. NELBO: 5300.05
*****
*****
Validation loss decreased (10619.115234 --> 10600.102539). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.82 .. NELBO:
11787.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.23 .. NELBO: 5313.25
*****
*****
```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.6 .. NELBO:
11781.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.33 .. NELBO: 5336.35
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.65 .. NELBO:
11793.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.18 .. NELBO: 5351.2
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.1 .. NELBO:
11795.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.6 .. NELBO: 5352.62
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.03 .. NELBO:
11783.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.58 .. NELBO: 5346.59
*****
*****

```

EarlyStopping counter: 5 out of 5

Early stopping

model: ETM(

(t_drop): Dropout(p=0.04622161566001642, inplace=False)

(theta_act): Sigmoid()

(rho): Linear(in_features=300, out_features=13198, bias=False)

(alphas): Linear(in_features=300, out_features=59, bias=False)

(q_theta): Sequential(

(0): Linear(in_features=13198, out_features=800, bias=True)

(1): Sigmoid()

(2): Linear(in_features=800, out_features=800, bias=True)

(3): Sigmoid()

)

(mu_q_theta): Linear(in_features=800, out_features=59, bias=True)

(logsigma_q_theta): Linear(in_features=800, out_features=59, bias=True)

)

Epoch---->1 .. LR: 0.005 .. KL_theta: 71.63 .. Rec_loss: 12263.83 .. NELBO:
12335.46

VALIDATION .. LR: 0.005 .. KL_theta: 7.06 .. Rec_loss: 5443.77 .. NELBO: 5450.83

Validation loss decreased (inf --> 10901.662109). Saving model ...

Epoch---->2 .. LR: 0.005 .. KL_theta: 7.6 .. Rec_loss: 12247.94 .. NELBO:
12255.54

VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5432.16 .. NELBO: 5432.54

Validation loss decreased (10901.662109 --> 10865.088867). Saving model ...

Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12210.34 .. NELBO:
12210.9


```

VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.09 .. NELBO: 5410.16
*****
*****
Validation loss decreased (10865.088867 --> 10820.333008). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12142.17 .. NELBO:
12142.28
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.32 .. NELBO: 5378.34
*****
*****
Validation loss decreased (10820.333008 --> 10756.693359). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12048.07 .. NELBO:
12048.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5342.21 .. NELBO: 5342.22
*****
*****
Validation loss decreased (10756.693359 --> 10684.454102). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11940.17 .. NELBO:
11940.2
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.02 .. NELBO: 5312.03
*****
*****
Validation loss decreased (10684.454102 --> 10624.074219). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11846.02 .. NELBO:
11846.05
*****
*****
*****

```

```
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.07 .. NELBO: 5300.08
*****
*****
Validation loss decreased (10624.074219 --> 10600.173828). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.52 .. NELBO:
11789.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.47 .. NELBO: 5311.48
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.41 .. NELBO:
11779.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5334.93 .. NELBO: 5334.94
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.53 .. NELBO:
11792.56
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.44 .. NELBO: 5351.45
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.68 .. NELBO:
11796.71
*****
*****
*****
*****
```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5354.02 .. NELBO: 5354.03
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.48 .. NELBO:
11785.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.16 .. NELBO: 5348.17
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 141
model: ETM(
  (t_drop): Dropout(p=0.05604064598697914, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 76.93 .. Rec_loss: 12263.99 .. NELBO:
12340.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.57 .. Rec_loss: 5443.7 .. NELBO: 5451.27
*****
*****
Validation loss decreased (inf --> 10902.537109). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.2 .. Rec_loss: 12246.75 .. NELBO:
12254.95

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5430.55 .. NELBO: 5431.01
*****
*****
Validation loss decreased (10902.537109 --> 10862.006836). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 12204.12 .. NELBO:
12204.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5406.4 .. NELBO: 5406.49
*****
*****
Validation loss decreased (10862.006836 --> 10812.971680). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12130.78 .. NELBO:
12130.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5372.74 .. NELBO: 5372.77
*****
*****
Validation loss decreased (10812.971680 --> 10745.540039). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12031.15 .. NELBO:
12031.2
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.16 .. NELBO: 5336.18
*****
*****
Validation loss decreased (10745.540039 --> 10672.353516). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11922.68 .. NELBO:
11922.71

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5307.99 .. NELBO: 5308.01
*****
*****
Validation loss decreased (10672.353516 --> 10616.005859). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11831.87 .. NELBO:
11831.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.39 .. NELBO: 5300.41
*****
*****
Validation loss decreased (10616.005859 --> 10600.826172). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11784.66 .. NELBO:
11784.71
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5315.72 .. NELBO: 5315.75
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11782.26 .. NELBO:
11782.33
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5339.29 .. NELBO: 5339.32
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11794.81 .. NELBO:
11794.87

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.98 .. NELBO: 5353.0
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.02 .. NELBO:
11795.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.14 .. NELBO: 5353.15
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.23 .. NELBO:
11782.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.5 .. NELBO: 5346.51
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05604064598697914, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****

```

```

*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 82.91 .. Rec_loss: 12263.56 .. NELBO:
12346.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.98 .. Rec_loss: 5443.24 .. NELBO: 5451.22
*****
*****
Validation loss decreased (inf --> 10902.434570). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.64 .. Rec_loss: 12245.79 .. NELBO:
12254.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5430.32 .. NELBO: 5430.82
*****
*****
Validation loss decreased (10902.434570 --> 10861.630859). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 12203.35 .. NELBO:
12204.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5406.4 .. NELBO: 5406.49
*****
*****
Validation loss decreased (10861.630859 --> 10812.981445). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12129.92 .. NELBO:
12130.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5373.15 .. NELBO: 5373.18
*****
*****
Validation loss decreased (10812.981445 --> 10746.340820). Saving model ...
*****

```

```

*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12031.61 .. NELBO:
12031.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.91 .. NELBO: 5336.93
*****
*****
Validation loss decreased (10746.340820 --> 10673.856445). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11923.89 .. NELBO:
11923.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5308.78 .. NELBO: 5308.79
*****
*****
Validation loss decreased (10673.856445 --> 10617.583984). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11833.5 .. NELBO:
11833.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.73 .. NELBO: 5300.74
*****
*****
Validation loss decreased (10617.583984 --> 10601.493164). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.23 .. NELBO:
11785.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5315.37 .. NELBO: 5315.38
*****
*****
EarlyStopping counter: 1 out of 5
*****

```

```

*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.54 .. NELBO:
11781.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.65 .. NELBO: 5338.66
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.11 .. NELBO:
11794.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.6 .. NELBO: 5352.61
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.88 .. NELBO:
11795.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.99 .. NELBO: 5353.0
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.98 .. NELBO:
11783.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.41 .. NELBO: 5346.42
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping

```

```

model: ETM(
  (t_drop): Dropout(p=0.05604064598697914, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 71.27 .. Rec_loss: 12263.86 .. NELBO:
12335.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.97 .. Rec_loss: 5443.77 .. NELBO: 5450.74
*****
*****
Validation loss decreased (inf --> 10901.474609). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.38 .. Rec_loss: 12247.66 .. NELBO:
12255.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5431.47 .. NELBO: 5431.8
*****
*****
Validation loss decreased (10901.474609 --> 10863.584961). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 12207.46 .. NELBO:
12207.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.45 .. NELBO: 5408.52
*****
*****

```

```

*****
Validation loss decreased (10863.584961 --> 10817.040039). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12136.84 .. NELBO:
12136.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.88 .. NELBO: 5375.9
*****
*****
Validation loss decreased (10817.040039 --> 10751.806641). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12040.16 .. NELBO:
12040.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.63 .. NELBO: 5339.65
*****
*****
Validation loss decreased (10751.806641 --> 10679.290039). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11932.47 .. NELBO:
11932.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.38 .. NELBO: 5310.4
*****
*****
Validation loss decreased (10679.290039 --> 10620.788086). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.54 .. NELBO:
11839.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.39 .. NELBO: 5300.41
*****

```

```

*****
Validation loss decreased (10620.788086 --> 10600.810547). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.45 .. NELBO:
11787.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.54 .. NELBO: 5313.56
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.51 .. NELBO:
11780.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.07 .. NELBO: 5337.09
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.37 .. NELBO:
11793.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.37 .. NELBO: 5352.39
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.07 .. NELBO:
11796.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.82 .. NELBO: 5353.84
*****

```

```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.3 .. NELBO:
11784.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.55 .. NELBO: 5347.57
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 142
model: ETM(
  (t_drop): Dropout(p=0.06134726027017264, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=66, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=66, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=66, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 71.51 .. Rec_loss: 12263.87 .. NELBO:
12335.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.15 .. Rec_loss: 5443.46 .. NELBO: 5450.61
*****
*****
Validation loss decreased (inf --> 10901.217773). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.74 .. Rec_loss: 12246.91 .. NELBO:
12254.65
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5431.0 .. NELBO: 5431.38
*****
*****
Validation loss decreased (10901.217773 --> 10862.762695). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 12206.7 .. NELBO:
12207.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5407.77 .. NELBO: 5407.82
*****
*****
Validation loss decreased (10862.762695 --> 10815.639648). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12135.9 .. NELBO:
12135.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.0 .. NELBO: 5375.02
*****
*****
Validation loss decreased (10815.639648 --> 10750.034180). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12039.33 .. NELBO:
12039.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.66 .. NELBO: 5338.67
*****
*****
Validation loss decreased (10750.034180 --> 10677.348633). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11932.08 .. NELBO:
11932.11
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.48 .. NELBO: 5309.49
*****
*****
Validation loss decreased (10677.348633 --> 10618.986328). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.45 .. NELBO:
11839.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.66 .. NELBO: 5299.67
*****
*****
Validation loss decreased (10618.986328 --> 10599.353516). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.34 .. NELBO:
11787.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.0 .. NELBO: 5313.01
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.17 .. NELBO:
11781.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.65 .. NELBO: 5336.66
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.73 .. NELBO:
11793.76
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.99 .. NELBO: 5352.0
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.66 .. NELBO:
11795.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.46 .. NELBO: 5353.47
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.81 .. NELBO:
11783.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.28 .. NELBO: 5347.29
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06134726027017264, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=66, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=66, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=66, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 69.51 .. Rec_loss: 12264.01 .. NELBO:

```

```
12333.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.47 .. Rec_loss: 5443.99 .. NELBO: 5450.46
*****
*****
Validation loss decreased (inf --> 10900.912109). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.03 .. Rec_loss: 12247.93 .. NELBO:
12254.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5431.37 .. NELBO: 5431.73
*****
*****
Validation loss decreased (10900.912109 --> 10863.461914). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12206.57 .. NELBO:
12207.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.73 .. NELBO: 5407.79
*****
*****
Validation loss decreased (10863.461914 --> 10815.584961). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12133.81 .. NELBO:
12133.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.51 .. NELBO: 5374.53
*****
*****
Validation loss decreased (10815.584961 --> 10749.056641). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12035.92 .. NELBO:
```

```
12035.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.04 .. NELBO: 5338.05
*****
*****
Validation loss decreased (10749.056641 --> 10676.114258). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11928.0 .. NELBO:
11928.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.43 .. NELBO: 5309.44
*****
*****
Validation loss decreased (10676.114258 --> 10618.881836). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11835.93 .. NELBO:
11835.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.69 .. NELBO: 5300.7
*****
*****
Validation loss decreased (10618.881836 --> 10601.404297). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.72 .. NELBO:
11786.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5314.71 .. NELBO: 5314.72
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.83 .. NELBO:
```

```
11781.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.92 .. NELBO: 5337.93
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.34 .. NELBO:
11794.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.24 .. NELBO: 5352.25
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.38 .. NELBO:
11795.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.05 .. NELBO: 5353.06
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.2 .. NELBO:
11783.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.65 .. NELBO: 5346.66
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
    (t_drop): Dropout(p=0.06134726027017264, inplace=False)
```

```

(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=66, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=66, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=66, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 67.8 .. Rec_loss: 12264.37 .. NELBO:
12332.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.46 .. Rec_loss: 5443.98 .. NELBO: 5451.44
*****
*****
Validation loss decreased (inf --> 10902.872070). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.09 .. Rec_loss: 12247.97 .. NELBO:
12256.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5431.17 .. NELBO: 5431.51
*****
*****
Validation loss decreased (10902.872070 --> 10863.010742). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 12206.63 .. NELBO:
12207.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.57 .. NELBO: 5407.63
*****
*****
Validation loss decreased (10863.010742 --> 10815.266602). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12134.88 .. NELBO:
12134.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5374.4 .. NELBO: 5374.43
*****
*****
Validation loss decreased (10815.266602 --> 10748.852539). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12037.34 .. NELBO:
12037.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.92 .. NELBO: 5337.94
*****
*****
Validation loss decreased (10748.852539 --> 10675.868164). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11929.3 .. NELBO:
11929.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.16 .. NELBO: 5309.18
*****
*****
Validation loss decreased (10675.868164 --> 10618.356445). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11837.29 .. NELBO:
11837.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.23 .. NELBO: 5300.25
*****
*****
Validation loss decreased (10618.356445 --> 10600.502930). Saving model ...

```



```

*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.66 .. NELBO:
11787.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.14 .. NELBO: 5314.16
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.24 .. NELBO:
11782.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.37 .. NELBO: 5337.39
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.93 .. NELBO:
11793.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.82 .. NELBO: 5351.84
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.35 .. NELBO:
11795.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.77 .. NELBO: 5352.79
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.88 .. NELBO:
11782.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.51 .. NELBO: 5346.53
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 143
model: ETM(
  (t_drop): Dropout(p=0.0604931523076708, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=52, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 67.32 .. Rec_loss: 12263.49 .. NELBO:
12330.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.77 .. Rec_loss: 5442.73 .. NELBO: 5449.5
*****
*****
Validation loss decreased (inf --> 10898.999023). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.2 .. Rec_loss: 12244.2 .. NELBO:
12251.4
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5429.06 .. NELBO: 5429.37
*****
*****
Validation loss decreased (10898.999023 --> 10858.740234). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 12199.66 .. NELBO:
12200.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5404.62 .. NELBO: 5404.68
*****
*****
Validation loss decreased (10858.740234 --> 10809.351562). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12126.06 .. NELBO:
12126.15
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5371.08 .. NELBO: 5371.1
*****
*****
Validation loss decreased (10809.351562 --> 10742.200195). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12026.39 .. NELBO:
12026.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.01 .. NELBO: 5335.02
*****
*****
Validation loss decreased (10742.200195 --> 10670.052734). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11919.1 .. NELBO:
11919.13
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5307.61 .. NELBO: 5307.62
*****
*****
Validation loss decreased (10670.052734 --> 10615.250977). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11830.03 .. NELBO:
11830.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.63 .. NELBO: 5300.64
*****
*****
Validation loss decreased (10615.250977 --> 10601.285156). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11784.64 .. NELBO:
11784.66
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5316.01 .. NELBO: 5316.02
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.12 .. NELBO:
11782.15
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5339.27 .. NELBO: 5339.28
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.75 .. NELBO:
11794.78
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.72 .. NELBO: 5352.73
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.84 .. NELBO:
11795.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.69 .. NELBO: 5352.7
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11782.17 .. NELBO:
11782.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.03 .. NELBO: 5346.04
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0604931523076708, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=52, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 70.92 .. Rec_loss: 12263.68 .. NELBO:
12334.6
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.08 .. Rec_loss: 5443.21 .. NELBO: 5450.29
*****
*****
Validation loss decreased (inf --> 10900.574219). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.69 .. Rec_loss: 12246.55 .. NELBO:
12254.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5431.34 .. NELBO: 5431.75
*****
*****
Validation loss decreased (10900.574219 --> 10863.499023). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12207.18 .. NELBO:
12207.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.58 .. NELBO: 5408.66
*****
*****
Validation loss decreased (10863.499023 --> 10817.305664). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12136.96 .. NELBO:
12137.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.21 .. NELBO: 5376.23
*****
*****
Validation loss decreased (10817.305664 --> 10752.469727). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12040.55 .. NELBO:
12040.59
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5340.02 .. NELBO: 5340.03
*****
*****
Validation loss decreased (10752.469727 --> 10680.058594). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11934.05 .. NELBO:
11934.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.61 .. NELBO: 5310.62
*****
*****
Validation loss decreased (10680.058594 --> 10621.239258). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11840.19 .. NELBO:
11840.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.28 .. NELBO: 5300.29
*****
*****
Validation loss decreased (10621.239258 --> 10600.584961). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11787.4 .. NELBO:
11787.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.13 .. NELBO: 5313.14
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.47 .. NELBO:
11780.5
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.61 .. NELBO: 5336.62
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.98 .. NELBO:
11793.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.06 .. NELBO: 5352.07
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11797.05 .. NELBO:
11797.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.61 .. NELBO: 5353.62
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.58 .. NELBO:
11784.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.37 .. NELBO: 5347.38
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0604931523076708, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)

```



```

(alphas): Linear(in_features=300, out_features=52, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=52, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=52, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 60.35 .. Rec_loss: 12264.15 .. NELBO:
12324.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.56 .. Rec_loss: 5443.6 .. NELBO: 5450.16
*****
*****
Validation loss decreased (inf --> 10900.319336). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.17 .. Rec_loss: 12247.11 .. NELBO:
12254.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5431.25 .. NELBO: 5431.63
*****
*****
Validation loss decreased (10900.319336 --> 10863.243164). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 12206.42 .. NELBO:
12206.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5407.94 .. NELBO: 5408.02
*****
*****
Validation loss decreased (10863.243164 --> 10816.032227). Saving model ...
*****
*****

```

```

Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12135.55 .. NELBO:
12135.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.23 .. NELBO: 5375.26
*****
*****
Validation loss decreased (10816.032227 --> 10750.514648). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12038.57 .. NELBO:
12038.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5339.11 .. NELBO: 5339.14
*****
*****
Validation loss decreased (10750.514648 --> 10678.279297). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11931.38 .. NELBO:
11931.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5310.16 .. NELBO: 5310.19
*****
*****
Validation loss decreased (10678.279297 --> 10620.372070). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11839.35 .. NELBO:
11839.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5300.25 .. NELBO: 5300.28
*****
*****
Validation loss decreased (10620.372070 --> 10600.557617). Saving model ...
*****
*****

```

```
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11788.23 .. NELBO:
11788.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5313.02 .. NELBO: 5313.06
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11781.65 .. NELBO:
11781.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5336.02 .. NELBO: 5336.06
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11793.32 .. NELBO:
11793.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5351.07 .. NELBO: 5351.11
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11794.89 .. NELBO:
11794.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5352.66 .. NELBO: 5352.7
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
```

```

Epoch----->12 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11784.04 .. NELBO:
11784.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.61 .. NELBO: 5346.64
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 144
model: ETM(
  (t_drop): Dropout(p=0.05977310301770208, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 84.41 .. Rec_loss: 12264.6 .. NELBO:
12349.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.76 .. Rec_loss: 5444.5 .. NELBO: 5452.26
*****
*****
Validation loss decreased (inf --> 10904.522461). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.36 .. Rec_loss: 12250.13 .. NELBO:
12258.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5433.0 .. NELBO: 5433.42
*****
*****

```

```

*****
Validation loss decreased (10904.522461 --> 10866.845703). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12212.41 .. NELBO:
12213.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.9 .. NELBO: 5410.97
*****
*****
Validation loss decreased (10866.845703 --> 10821.942383). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12144.36 .. NELBO:
12144.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.99 .. NELBO: 5379.02
*****
*****
Validation loss decreased (10821.942383 --> 10758.025391). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12048.77 .. NELBO:
12048.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.71 .. NELBO: 5342.73
*****
*****
Validation loss decreased (10758.025391 --> 10685.459961). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11941.78 .. NELBO:
11941.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.45 .. NELBO: 5312.47
*****

```

```

*****
Validation loss decreased (10685.459961 --> 10624.930664). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11847.22 .. NELBO:
11847.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.55 .. NELBO: 5300.57
*****
*****
Validation loss decreased (10624.930664 --> 10601.137695). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.24 .. NELBO:
11791.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.89 .. NELBO: 5311.91
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.16 .. NELBO:
11781.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.94 .. NELBO: 5334.96
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.05 .. NELBO:
11793.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.88 .. NELBO: 5350.9
*****

```

```

*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.26 .. NELBO:
11796.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.09 .. NELBO: 5353.11
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.02 .. NELBO:
11785.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.22 .. NELBO: 5347.24
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05977310301770208, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 94.12 .. Rec_loss: 12264.28 .. NELBO:
12358.4
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.19 .. Rec_loss: 5444.25 .. NELBO: 5452.44
*****
*****
Validation loss decreased (inf --> 10904.883789). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.82 .. Rec_loss: 12249.26 .. NELBO:
12258.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5432.81 .. NELBO: 5433.3
*****
*****
Validation loss decreased (10904.883789 --> 10866.585938). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 12211.73 .. NELBO:
12212.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5410.8 .. NELBO: 5410.89
*****
*****
Validation loss decreased (10866.585938 --> 10821.774414). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12143.77 .. NELBO:
12143.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.01 .. NELBO: 5379.04
*****
*****
Validation loss decreased (10821.774414 --> 10758.080078). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12048.86 .. NELBO:
12048.91
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.82 .. NELBO: 5342.84
*****
*****
Validation loss decreased (10758.080078 --> 10685.685547). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11941.86 .. NELBO:
11941.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.52 .. NELBO: 5312.54
*****
*****
Validation loss decreased (10685.685547 --> 10625.070312). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11846.61 .. NELBO:
11846.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.43 .. NELBO: 5300.45
*****
*****
Validation loss decreased (10625.070312 --> 10600.906250). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.65 .. NELBO:
11790.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.62 .. NELBO: 5311.64
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.31 .. NELBO:
11780.35
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.78 .. NELBO: 5334.8
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.53 .. NELBO:
11792.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.13 .. NELBO: 5351.15
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.35 .. NELBO:
11796.39
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.68 .. NELBO: 5353.7
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.68 .. NELBO:
11785.72
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.86 .. NELBO: 5347.88
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05977310301770208, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=81, bias=False)
  (q_theta): Sequential(

```

```

(0): Linear(in_features=13198, out_features=800, bias=True)
(1): Sigmoid()
(2): Linear(in_features=800, out_features=800, bias=True)
(3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=81, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=81, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 84.44 .. Rec_loss: 12264.18 .. NELBO:
12348.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.8 .. Rec_loss: 5443.81 .. NELBO: 5451.61
*****
*****
Validation loss decreased (inf --> 10903.235352). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.47 .. Rec_loss: 12247.82 .. NELBO:
12256.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5431.7 .. NELBO: 5432.1
*****
*****
Validation loss decreased (10903.235352 --> 10864.195312). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12208.22 .. NELBO:
12208.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.71 .. NELBO: 5408.78
*****
*****
Validation loss decreased (10864.195312 --> 10817.566406). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12138.06 .. NELBO:
12138.17

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.16 .. NELBO: 5376.19
*****
*****
Validation loss decreased (10817.566406 --> 10752.383789). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12041.13 .. NELBO:
12041.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.95 .. NELBO: 5339.97
*****
*****
Validation loss decreased (10752.383789 --> 10679.949219). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11934.0 .. NELBO:
11934.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.72 .. NELBO: 5310.74
*****
*****
Validation loss decreased (10679.949219 --> 10621.477539). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.2 .. NELBO:
11841.24
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.58 .. NELBO: 5300.6
*****
*****
Validation loss decreased (10621.477539 --> 10601.189453). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.65 .. NELBO:
11788.69

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.36 .. NELBO: 5313.38
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.47 .. NELBO:
11781.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.49 .. NELBO: 5336.51
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.52 .. NELBO:
11793.56
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.63 .. NELBO: 5351.65
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.65 .. NELBO:
11795.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.16 .. NELBO: 5353.18
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.26 .. NELBO:
11784.3

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.03 .. NELBO: 5347.05
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 145
model: ETM(
  (t_drop): Dropout(p=0.024126146927317998, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 89.46 .. Rec_loss: 12264.54 .. NELBO:
12354.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.47 .. Rec_loss: 5444.87 .. NELBO: 5452.34
*****
*****
Validation loss decreased (inf --> 10904.686523). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.07 .. Rec_loss: 12251.62 .. NELBO:
12259.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 5434.54 .. NELBO: 5435.08
*****
*****
Validation loss decreased (10904.686523 --> 10870.156250). Saving model ...

```

```

*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 12217.26 .. NELBO:
12218.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5413.94 .. NELBO: 5414.04
*****
*****
Validation loss decreased (10870.156250 --> 10828.087891). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 12153.94 .. NELBO:
12154.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5383.29 .. NELBO: 5383.32
*****
*****
Validation loss decreased (10828.087891 --> 10766.637695). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12061.85 .. NELBO:
12061.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.24 .. NELBO: 5347.26
*****
*****
Validation loss decreased (10766.637695 --> 10694.513672). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11955.27 .. NELBO:
11955.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.4 .. NELBO: 5315.42
*****
*****
Validation loss decreased (10694.513672 --> 10630.840820). Saving model ...

```

```

*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11857.35 .. NELBO:
11857.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.32 .. NELBO: 5300.34
*****
*****
Validation loss decreased (10630.840820 --> 10600.671875). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.76 .. NELBO:
11794.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.88 .. NELBO: 5308.9
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.07 .. NELBO:
11779.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5331.93 .. NELBO: 5331.95
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.65 .. NELBO:
11790.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.17 .. NELBO: 5350.19
*****
*****
EarlyStopping counter: 3 out of 5

```



```

*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11797.55 .. NELBO:
11797.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.39 .. NELBO: 5354.41
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.29 .. NELBO:
11787.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5349.15 .. NELBO: 5349.17
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.024126146927317998, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 78.09 .. Rec_loss: 12264.08 .. NELBO:
12342.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.06 .. Rec_loss: 5443.59 .. NELBO: 5450.65

```

```

*****
*****
Validation loss decreased (inf --> 10901.303711). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.61 .. Rec_loss: 12247.24 .. NELBO:
12254.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5431.22 .. NELBO: 5431.66
*****
*****
Validation loss decreased (10901.303711 --> 10863.319336). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12207.08 .. NELBO:
12207.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.12 .. NELBO: 5408.19
*****
*****
Validation loss decreased (10863.319336 --> 10816.377930). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12135.74 .. NELBO:
12135.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.6 .. NELBO: 5375.62
*****
*****
Validation loss decreased (10816.377930 --> 10751.242188). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12040.23 .. NELBO:
12040.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.51 .. NELBO: 5339.53

```

```

*****
*****
Validation loss decreased (10751.242188 --> 10679.044922). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11933.2 .. NELBO:
11933.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.39 .. NELBO: 5310.4
*****
*****
Validation loss decreased (10679.044922 --> 10620.812500). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11840.69 .. NELBO:
11840.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.3 .. NELBO: 5300.31
*****
*****
Validation loss decreased (10620.812500 --> 10600.629883). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.58 .. NELBO:
11788.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.06 .. NELBO: 5313.07
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.41 .. NELBO:
11781.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.18 .. NELBO: 5336.19

```

```

*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.61 .. NELBO:
11793.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.38 .. NELBO: 5351.39
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.88 .. NELBO:
11795.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.96 .. NELBO: 5352.97
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.91 .. NELBO:
11783.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.89 .. NELBO: 5346.9
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.024126146927317998, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()

```

```

        (2): Linear(in_features=800, out_features=800, bias=True)
        (3): Sigmoid()
    )
    (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
    (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 73.2 .. Rec_loss: 12263.4 .. NELBO:
12336.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.22 .. Rec_loss: 5443.45 .. NELBO: 5450.67
*****
*****
Validation loss decreased (inf --> 10901.344727). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.79 .. Rec_loss: 12245.98 .. NELBO:
12253.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5430.43 .. NELBO: 5430.84
*****
*****
Validation loss decreased (10901.344727 --> 10861.669922). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12204.08 .. NELBO:
12204.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5406.61 .. NELBO: 5406.68
*****
*****
Validation loss decreased (10861.669922 --> 10813.367188). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12131.49 .. NELBO:
12131.6
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5373.36 .. NELBO: 5373.38
*****
*****
Validation loss decreased (10813.367188 --> 10746.763672). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12032.6 .. NELBO:
12032.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.0 .. NELBO: 5337.02
*****
*****
Validation loss decreased (10746.763672 --> 10674.027344). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11924.58 .. NELBO:
11924.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5308.61 .. NELBO: 5308.62
*****
*****
Validation loss decreased (10674.027344 --> 10617.253906). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11834.15 .. NELBO:
11834.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.33 .. NELBO: 5300.34
*****
*****
Validation loss decreased (10617.253906 --> 10600.682617). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.86 .. NELBO:
11784.89
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5314.98 .. NELBO: 5314.99
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.05 .. NELBO:
11782.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.52 .. NELBO: 5338.54
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.78 .. NELBO:
11794.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.71 .. NELBO: 5352.73
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.86 .. NELBO:
11795.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.19 .. NELBO: 5353.2
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.26 .. NELBO:
11783.29
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.54 .. NELBO: 5346.55
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 146
model: ETM(
  (t_drop): Dropout(p=0.056500779981751834, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.09 .. Rec_loss: 12264.44 .. NELBO:
12343.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.64 .. Rec_loss: 5444.14 .. NELBO: 5451.78
*****
*****
Validation loss decreased (inf --> 10903.563477). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.3 .. Rec_loss: 12248.93 .. NELBO:
12257.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5432.15 .. NELBO: 5432.54
*****
*****
Validation loss decreased (10903.563477 --> 10865.083008). Saving model ...
*****
*****

```



```

Epoch----->3 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 12209.78 .. NELBO:
12210.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.6 .. NELBO: 5409.67
*****
*****
Validation loss decreased (10865.083008 --> 10819.336914). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12140.67 .. NELBO:
12140.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.42 .. NELBO: 5377.45
*****
*****
Validation loss decreased (10819.336914 --> 10754.895508). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12045.43 .. NELBO:
12045.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.25 .. NELBO: 5341.27
*****
*****
Validation loss decreased (10754.895508 --> 10682.531250). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11938.33 .. NELBO:
11938.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.51 .. NELBO: 5311.53
*****
*****
Validation loss decreased (10682.531250 --> 10623.061523). Saving model ...
*****
*****

```

```

Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11845.06 .. NELBO:
11845.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELBO: 5300.39
*****
*****
Validation loss decreased (10623.061523 --> 10600.768555). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.4 .. NELBO:
11790.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.22 .. NELBO: 5312.24
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.13 .. NELBO:
11781.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.21 .. NELBO: 5335.23
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.04 .. NELBO:
11793.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.78 .. NELBO: 5350.8
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****

```

```

Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.08 .. NELBO:
11796.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.76 .. NELBO: 5352.78
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.45 .. NELBO:
11784.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.89 .. NELBO: 5346.91
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.056500779981751834, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 95.48 .. Rec_loss: 12264.08 .. NELBO:
12359.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.65 .. Rec_loss: 5444.0 .. NELBO: 5451.65
*****
*****

```

```

Validation loss decreased (inf --> 10903.314453). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.24 .. Rec_loss: 12248.59 .. NELBO:
12256.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5432.15 .. NELBO: 5432.65
*****
*****
Validation loss decreased (10903.314453 --> 10865.284180). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 12209.38 .. NELBO:
12210.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.31 .. NELBO: 5409.39
*****
*****
Validation loss decreased (10865.284180 --> 10818.780273). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12138.8 .. NELBO:
12138.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.94 .. NELBO: 5376.97
*****
*****
Validation loss decreased (10818.780273 --> 10753.944336). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12043.36 .. NELBO:
12043.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.75 .. NELBO: 5340.77
*****
*****

```

```
Validation loss decreased (10753.944336 --> 10681.544922). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.44 .. NELBO:
11936.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.12 .. NELBO: 5311.14
*****
*****
Validation loss decreased (10681.544922 --> 10622.286133). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11843.58 .. NELBO:
11843.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.15 .. NELBO: 5300.17
*****
*****
Validation loss decreased (10622.286133 --> 10600.330078). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.11 .. NELBO:
11789.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.23 .. NELBO: 5312.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.68 .. NELBO:
11780.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.48 .. NELBO: 5335.5
*****
*****
```

```

EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.97 .. NELBO:
11793.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.33 .. NELBO: 5351.35
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.22 .. NELBO:
11796.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.43 .. NELBO: 5353.45
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.0 .. NELBO:
11785.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.49 .. NELBO: 5347.51
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.056500779981751834, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=84, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()

```

```

)
(mu_q_theta): Linear(in_features=800, out_features=84, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=84, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 79.73 .. Rec_loss: 12264.54 .. NELBO:
12344.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.63 .. Rec_loss: 5444.44 .. NELBO: 5452.07
*****
*****
Validation loss decreased (inf --> 10904.146484). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.27 .. Rec_loss: 12249.52 .. NELBO:
12257.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5432.62 .. NELBO: 5432.97
*****
*****
Validation loss decreased (10904.146484 --> 10865.953125). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12211.02 .. NELBO:
12211.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5410.06 .. NELBO: 5410.12
*****
*****
Validation loss decreased (10865.953125 --> 10820.239258). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12141.84 .. NELBO:
12141.93
*****
*****
*****
*****

```

```
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.68 .. NELBO: 5377.7
*****
*****
Validation loss decreased (10820.239258 --> 10755.406250). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12045.57 .. NELBO:
12045.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.17 .. NELBO: 5341.19
*****
*****
Validation loss decreased (10755.406250 --> 10682.374023). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11938.35 .. NELBO:
11938.39
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.22 .. NELBO: 5311.24
*****
*****
Validation loss decreased (10682.374023 --> 10622.475586). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11843.1 .. NELBO:
11843.14
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.21 .. NELBO: 5300.23
*****
*****
Validation loss decreased (10622.475586 --> 10600.452148). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.48 .. NELBO:
11789.52
*****
*****
*****
```



```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.51 .. NELBO: 5312.53
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.22 .. NELBO:
11781.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.92 .. NELBO: 5335.94
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.4 .. NELBO:
11793.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.64 .. NELBO: 5351.66
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.08 .. NELBO:
11796.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.55 .. NELBO: 5353.57
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.6 .. NELBO:
11784.64
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.48 .. NELBO: 5347.5
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 147
model: ETM(
  (t_drop): Dropout(p=0.05981806261719003, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 81.79 .. Rec_loss: 12263.68 .. NELBO:
12345.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.26 .. Rec_loss: 5443.75 .. NELBO: 5451.01
*****
*****
Validation loss decreased (inf --> 10902.019531). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.77 .. Rec_loss: 12247.28 .. NELBO:
12255.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5431.28 .. NELBO: 5431.65
*****
*****
Validation loss decreased (10902.019531 --> 10863.296875). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12206.29 .. NELBO:
12206.83

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.79 .. NELBO: 5407.86
*****
*****
Validation loss decreased (10863.296875 --> 10815.724609). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12134.33 .. NELBO:
12134.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5374.81 .. NELBO: 5374.84
*****
*****
Validation loss decreased (10815.724609 --> 10749.667969). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12036.83 .. NELBO:
12036.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.46 .. NELBO: 5338.48
*****
*****
Validation loss decreased (10749.667969 --> 10676.960938). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11928.61 .. NELBO:
11928.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5309.69 .. NELBO: 5309.72
*****
*****
Validation loss decreased (10676.960938 --> 10619.458984). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11837.04 .. NELBO:
11837.12

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5300.69 .. NELBO: 5300.74
*****
*****
Validation loss decreased (10619.458984 --> 10601.476562). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11786.76 .. NELBO:
11786.86
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5314.57 .. NELBO: 5314.62
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11781.79 .. NELBO:
11781.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5337.78 .. NELBO: 5337.83
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11794.36 .. NELBO:
11794.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5352.12 .. NELBO: 5352.17
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11795.73 .. NELBO:
11795.82

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5352.85 .. NELBO: 5352.89
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11783.19 .. NELBO:
11783.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.39 .. NELBO: 5346.42
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05981806261719003, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 89.0 .. Rec_loss: 12264.1 .. NELBO:
12353.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.47 .. Rec_loss: 5443.9 .. NELBO: 5452.37
*****
*****
Validation loss decreased (inf --> 10904.731445). Saving model ...
*****

```

```

*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.11 .. Rec_loss: 12248.27 .. NELBO:
12257.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5431.91 .. NELBO: 5432.37
*****
*****
Validation loss decreased (10904.731445 --> 10864.735352). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12208.73 .. NELBO:
12209.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.92 .. NELBO: 5409.0
*****
*****
Validation loss decreased (10864.735352 --> 10817.992188). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12138.55 .. NELBO:
12138.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.37 .. NELBO: 5376.4
*****
*****
Validation loss decreased (10817.992188 --> 10752.793945). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12042.19 .. NELBO:
12042.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.08 .. NELBO: 5340.1
*****
*****
Validation loss decreased (10752.793945 --> 10680.201172). Saving model ...
*****

```

```

*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11934.47 .. NELBO:
11934.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.7 .. NELBO: 5310.72
*****
*****
Validation loss decreased (10680.201172 --> 10621.438477). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.34 .. NELBO:
11841.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.43 .. NELBO: 5300.45
*****
*****
Validation loss decreased (10621.438477 --> 10600.897461). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.62 .. NELBO:
11788.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.12 .. NELBO: 5313.14
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.32 .. NELBO:
11781.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.31 .. NELBO: 5336.33
*****
*****
EarlyStopping counter: 2 out of 5
*****

```

```

*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.38 .. NELBO:
11793.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.55 .. NELBO: 5351.57
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.27 .. NELBO:
11796.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.08 .. NELBO: 5353.1
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.17 .. NELBO:
11784.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.92 .. NELBO: 5346.94
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05981806261719003, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)

```



```

(logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.64 .. Rec_loss: 12264.18 .. NELBO:
12352.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.35 .. Rec_loss: 5443.95 .. NELBO: 5452.3
*****
*****
Validation loss decreased (inf --> 10904.605469). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.09 .. Rec_loss: 12248.4 .. NELBO:
12257.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5431.84 .. NELBO: 5432.28
*****
*****
Validation loss decreased (10904.605469 --> 10864.554688). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12208.8 .. NELBO:
12209.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.68 .. NELBO: 5408.75
*****
*****
Validation loss decreased (10864.554688 --> 10817.496094). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12137.75 .. NELBO:
12137.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.88 .. NELBO: 5375.91
*****
*****

```

```

*****
Validation loss decreased (10817.496094 --> 10751.805664). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12040.92 .. NELBO:
12040.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.41 .. NELBO: 5339.43
*****
*****
Validation loss decreased (10751.805664 --> 10678.861328). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11933.28 .. NELBO:
11933.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.09 .. NELBO: 5310.11
*****
*****
Validation loss decreased (10678.861328 --> 10620.218750). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11840.6 .. NELBO:
11840.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.12 .. NELBO: 5300.14
*****
*****
Validation loss decreased (10620.218750 --> 10600.280273). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.64 .. NELBO:
11788.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.23 .. NELBO: 5313.25
*****

```

```

*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.48 .. NELBO:
11781.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.65 .. NELBO: 5336.67
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.55 .. NELBO:
11793.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.86 .. NELBO: 5351.88
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.06 .. NELBO:
11796.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.3 .. NELBO: 5353.32
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.79 .. NELBO:
11783.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.11 .. NELBO: 5347.13
*****

```

```

*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 148
model: ETM(
  (t_drop): Dropout(p=0.0626828463980928, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=59, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=59, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=59, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 68.61 .. Rec_loss: 12264.01 .. NELBO:
12332.62
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.49 .. Rec_loss: 5443.62 .. NELBO: 5451.11
*****
*****
Validation loss decreased (inf --> 10902.223633). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.11 .. Rec_loss: 12246.95 .. NELBO:
12255.06
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5430.88 .. NELBO: 5431.24
*****
*****
Validation loss decreased (10902.223633 --> 10862.486328). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12205.56 .. NELBO:
12206.08
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.32 .. NELBO: 5407.39
*****
*****
Validation loss decreased (10862.486328 --> 10814.777344). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12133.42 .. NELBO:
12133.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.28 .. NELBO: 5374.3
*****
*****
Validation loss decreased (10814.777344 --> 10748.611328). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12036.57 .. NELBO:
12036.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.95 .. NELBO: 5337.96
*****
*****
Validation loss decreased (10748.611328 --> 10675.938477). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11928.2 .. NELBO:
11928.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.3 .. NELBO: 5309.31
*****
*****
Validation loss decreased (10675.938477 --> 10618.628906). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11837.42 .. NELBO:
11837.45
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.36 .. NELBO: 5300.37
*****
*****
Validation loss decreased (10618.628906 --> 10600.754883). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.78 .. NELBO:
11786.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5314.29 .. NELBO: 5314.3
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.58 .. NELBO:
11781.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.63 .. NELBO: 5337.64
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.19 .. NELBO:
11794.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.12 .. NELBO: 5352.13
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.39 .. NELBO:
11795.42
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.02 .. NELBO: 5353.03
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.0 .. NELBO:
11783.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.68 .. NELBO: 5346.69
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0626828463980928, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=59, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=59, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=59, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 69.1 .. Rec_loss: 12264.28 .. NELBO:
12333.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.01 .. Rec_loss: 5444.09 .. NELBO: 5451.1
*****
*****
Validation loss decreased (inf --> 10902.207031). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.49 .. Rec_loss: 12248.57 .. NELBO:

```

12256.06

VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.09 .. NELBO: 5432.52

Validation loss decreased (10902.207031 --> 10865.037109). Saving model ...

Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12209.07 .. NELBO:
12209.74

VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5409.45 .. NELBO: 5409.58

Validation loss decreased (10865.037109 --> 10819.150391). Saving model ...

Epoch---->4 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 12138.84 .. NELBO:
12139.05

VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5377.18 .. NELBO: 5377.24

Validation loss decreased (10819.150391 --> 10754.481445). Saving model ...

Epoch---->5 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12043.29 .. NELBO:
12043.4

VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5341.02 .. NELBO: 5341.07

Validation loss decreased (10754.481445 --> 10682.142578). Saving model ...

Epoch---->6 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11936.05 .. NELBO:


```
11936.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5311.42 .. NELB0: 5311.49
*****
*****
Validation loss decreased (10682.142578 --> 10622.966797). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11842.42 .. NELB0:
11842.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5300.51 .. NELB0: 5300.62
*****
*****
Validation loss decreased (10622.966797 --> 10601.228516). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 11788.72 .. NELB0:
11788.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5312.58 .. NELB0: 5312.72
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 11780.34 .. NELB0:
11780.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5335.56 .. NELB0: 5335.67
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 11792.68 .. NELB0:
```

```

11792.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5351.12 .. NELBO: 5351.21
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 11795.72 .. NELBO:
11795.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5353.1 .. NELBO: 5353.17
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11784.65 .. NELBO:
11784.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5347.15 .. NELBO: 5347.2
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0626828463980928, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=59, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=59, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=59, bias=True)
)

```

```

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 65.98 .. Rec_loss: 12263.73 .. NELBO:
12329.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.62 .. Rec_loss: 5443.55 .. NELBO: 5450.17
*****
*****
Validation loss decreased (inf --> 10900.342773). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.2 .. Rec_loss: 12247.27 .. NELBO:
12254.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5431.41 .. NELBO: 5431.74
*****
*****
Validation loss decreased (10900.342773 --> 10863.479492). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 12207.58 .. NELBO:
12208.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5408.36 .. NELBO: 5408.42
*****
*****
Validation loss decreased (10863.479492 --> 10816.832031). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12137.2 .. NELBO:
12137.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.73 .. NELBO: 5375.75
*****
*****
Validation loss decreased (10816.832031 --> 10751.500000). Saving model ...

```

```

*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12039.62 .. NELBO:
12039.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5339.35 .. NELBO: 5339.36
*****
*****
Validation loss decreased (10751.500000 --> 10678.721680). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11931.7 .. NELBO:
11931.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.08 .. NELBO: 5310.09
*****
*****
Validation loss decreased (10678.721680 --> 10620.178711). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.36 .. NELBO:
11839.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.25 .. NELBO: 5300.26
*****
*****
Validation loss decreased (10620.178711 --> 10600.524414). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.1 .. NELBO:
11787.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.65 .. NELBO: 5313.66
*****
*****
EarlyStopping counter: 1 out of 5

```

```
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.33 .. NELBO:
11781.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.22 .. NELBO: 5337.23
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.06 .. NELBO:
11794.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.37 .. NELBO: 5352.38
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.89 .. NELBO:
11795.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.67 .. NELBO: 5353.68
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.49 .. NELBO:
11784.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.33 .. NELBO: 5347.34
*****
*****
EarlyStopping counter: 5 out of 5
```

```

Early stopping
Current call: 149
model: ETM(
  (t_drop): Dropout(p=0.062160474415888935, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=57, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=57, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=57, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 72.71 .. Rec_loss: 12264.26 .. NELBO:
12336.97
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.57 .. Rec_loss: 5443.82 .. NELBO: 5451.39
*****
*****
Validation loss decreased (inf --> 10902.773438). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.14 .. Rec_loss: 12247.71 .. NELBO:
12255.85
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5431.6 .. NELBO: 5432.0
*****
*****
Validation loss decreased (10902.773438 --> 10863.995117). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12208.07 .. NELBO:
12208.66
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.62 .. NELBO: 5408.69
*****
*****
Validation loss decreased (10863.995117 --> 10817.392578). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12137.47 .. NELBO:
12137.58
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.24 .. NELBO: 5376.26
*****
*****
Validation loss decreased (10817.392578 --> 10752.529297). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12041.16 .. NELBO:
12041.2
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.14 .. NELBO: 5340.16
*****
*****
Validation loss decreased (10752.529297 --> 10680.309570). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11934.78 .. NELBO:
11934.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.71 .. NELBO: 5310.72
*****
*****
Validation loss decreased (10680.309570 --> 10621.444336). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.1 .. NELBO:
11842.13
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.05 .. NELBO: 5300.07
*****
*****
Validation loss decreased (10621.444336 --> 10600.132812). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.74 .. NELBO:
11788.77
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.44 .. NELBO: 5312.46
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.58 .. NELBO:
11780.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.8 .. NELBO: 5335.82
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.08 .. NELBO:
11793.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.53 .. NELBO: 5351.55
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.85 .. NELBO:
11795.88
*****
*****
*****

```



```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.5 .. NELBO: 5353.52
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.29 .. NELBO:
11784.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.52 .. NELBO: 5347.53
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.062160474415888935, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=57, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=57, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=57, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 76.35 .. Rec_loss: 12264.17 .. NELBO:
12340.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.46 .. Rec_loss: 5443.83 .. NELBO: 5451.29
*****
*****
Validation loss decreased (inf --> 10902.592773). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 7.99 .. Rec_loss: 12248.37 .. NELBO:
12256.36
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5432.33 .. NELBO: 5432.79
*****
*****
Validation loss decreased (10902.592773 --> 10865.577148). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12210.18 .. NELBO:
12210.85
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.09 .. NELBO: 5410.17
*****
*****
Validation loss decreased (10865.577148 --> 10820.351562). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12141.91 .. NELBO:
12142.03
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.18 .. NELBO: 5378.2
*****
*****
Validation loss decreased (10820.351562 --> 10756.396484). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12047.39 .. NELBO:
12047.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5342.03 .. NELBO: 5342.04
*****
*****
Validation loss decreased (10756.396484 --> 10684.085938). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11939.88 .. NELBO:
11939.91
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.97 .. NELBO: 5311.98
*****
*****
Validation loss decreased (10684.085938 --> 10623.965820). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.5 .. NELBO:
11845.53
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.34 .. NELBO: 5300.36
*****
*****
Validation loss decreased (10623.965820 --> 10600.714844). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.72 .. NELBO:
11789.76
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5312.03 .. NELBO: 5312.06
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11780.49 .. NELBO:
11780.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5335.31 .. NELBO: 5335.34
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.01 .. NELBO:
11793.06
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.29 .. NELBO: 5351.31
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.16 .. NELBO:
11796.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.47 .. NELBO: 5353.48
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11784.82 .. NELBO:
11784.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.6 .. NELBO: 5347.61
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.062160474415888935, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=57, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=57, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=57, bias=True)
)
*****
*****

```

```

Epoch----->1 .. LR: 0.005 .. KL_theta: 69.91 .. Rec_loss: 12264.04 .. NELBO:
12333.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.09 .. Rec_loss: 5443.65 .. NELBO: 5450.74
*****
*****
Validation loss decreased (inf --> 10901.482422). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 7.74 .. Rec_loss: 12247.73 .. NELBO:
12255.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5431.62 .. NELBO: 5431.97
*****
*****
Validation loss decreased (10901.482422 --> 10863.940430). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 12208.05 .. NELBO:
12208.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5408.7 .. NELBO: 5408.75
*****
*****
Validation loss decreased (10863.940430 --> 10817.514648). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12138.22 .. NELBO:
12138.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.25 .. NELBO: 5376.27
*****
*****
Validation loss decreased (10817.514648 --> 10752.538086). Saving model ...
*****
*****

```

```
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12042.42 .. NELBO:
12042.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5339.97 .. NELBO: 5339.98
*****
*****
Validation loss decreased (10752.538086 --> 10679.960938). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11934.94 .. NELBO:
11934.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.43 .. NELBO: 5310.44
*****
*****
Validation loss decreased (10679.960938 --> 10620.880859). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11841.37 .. NELBO:
11841.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.89 .. NELBO: 5299.9
*****
*****
Validation loss decreased (10620.880859 --> 10599.796875). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11788.02 .. NELBO:
11788.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.5 .. NELBO: 5312.51
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
```

```
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11780.65 .. NELBO:
11780.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.95 .. NELBO: 5335.96
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11793.22 .. NELBO:
11793.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.65 .. NELBO: 5351.66
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11796.25 .. NELBO:
11796.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.49 .. NELBO: 5353.5
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11784.82 .. NELBO:
11784.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.42 .. NELBO: 5347.43
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 150
```

```

model: ETM(
  (t_drop): Dropout(p=0.06103440580345521, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=74, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=74, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=74, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 74.1 .. Rec_loss: 12264.07 .. NELBO:
12338.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.82 .. Rec_loss: 5443.81 .. NELBO: 5450.63
*****
*****
Validation loss decreased (inf --> 10901.259766). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.52 .. Rec_loss: 12247.04 .. NELBO:
12254.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5430.93 .. NELBO: 5431.36
*****
*****
Validation loss decreased (10901.259766 --> 10862.723633). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12205.75 .. NELBO:
12206.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.23 .. NELBO: 5407.29
*****
*****

```



```

*****
Validation loss decreased (10862.723633 --> 10814.572266). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12133.24 .. NELBO:
12133.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.17 .. NELBO: 5374.19
*****
*****
Validation loss decreased (10814.572266 --> 10748.375000). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12035.06 .. NELBO:
12035.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.92 .. NELBO: 5337.93
*****
*****
Validation loss decreased (10748.375000 --> 10675.869141). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11927.5 .. NELBO:
11927.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.37 .. NELBO: 5309.38
*****
*****
Validation loss decreased (10675.869141 --> 10618.772461). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11836.9 .. NELBO:
11836.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.51 .. NELBO: 5300.52
*****

```

```

*****
Validation loss decreased (10618.772461 --> 10601.050781). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.93 .. NELBO:
11786.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5314.37 .. NELBO: 5314.38
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.52 .. NELBO:
11781.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.57 .. NELBO: 5337.58
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.49 .. NELBO:
11793.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.03 .. NELBO: 5352.04
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.35 .. NELBO:
11795.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.94 .. NELBO: 5352.95
*****

```

```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.39 .. NELBO:
11783.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.6 .. NELBO: 5346.61
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06103440580345521, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=74, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=74, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=74, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 84.0 .. Rec_loss: 12264.18 .. NELBO:
12348.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.85 .. Rec_loss: 5444.19 .. NELBO: 5452.04
*****
*****
Validation loss decreased (inf --> 10904.074219). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.46 .. Rec_loss: 12249.66 .. NELBO:
12258.12
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5433.13 .. NELBO: 5433.52
*****
*****
Validation loss decreased (10904.074219 --> 10867.032227). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 12212.57 .. NELBO:
12213.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5411.37 .. NELBO: 5411.43
*****
*****
Validation loss decreased (10867.032227 --> 10822.863281). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12146.02 .. NELBO:
12146.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.72 .. NELBO: 5379.74
*****
*****
Validation loss decreased (10822.863281 --> 10759.489258). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12051.86 .. NELBO:
12051.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.4 .. NELBO: 5343.42
*****
*****
Validation loss decreased (10759.489258 --> 10686.839844). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11944.55 .. NELBO:
11944.58
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.68 .. NELBO: 5312.7
*****
*****
Validation loss decreased (10686.839844 --> 10625.381836). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.74 .. NELBO:
11847.77
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.1 .. NELBO: 5300.12
*****
*****
Validation loss decreased (10625.381836 --> 10600.241211). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.75 .. NELBO:
11790.78
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.14 .. NELBO: 5311.16
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.79 .. NELBO:
11779.82
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.67 .. NELBO: 5334.69
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.21 .. NELBO:
11792.24
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.47 .. NELBO: 5351.49
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.57 .. NELBO:
11796.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.23 .. NELBO: 5354.25
*****
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.21 .. NELBO:
11786.24
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.38 .. NELBO: 5348.4
*****
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06103440580345521, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=74, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=74, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=74, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 74.79 .. Rec_loss: 12264.37 .. NELBO:
12339.16

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.46 .. Rec_loss: 5444.2 .. NELBO: 5451.66
*****
*****
Validation loss decreased (inf --> 10903.314453). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.18 .. Rec_loss: 12249.16 .. NELBO:
12257.34
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5432.34 .. NELBO: 5432.75
*****
*****
Validation loss decreased (10903.314453 --> 10865.505859). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12210.67 .. NELBO:
12211.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.1 .. NELBO: 5410.18
*****
*****
Validation loss decreased (10865.505859 --> 10820.344727). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12142.78 .. NELBO:
12142.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.24 .. NELBO: 5378.27
*****
*****
Validation loss decreased (10820.344727 --> 10756.533203). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12047.95 .. NELBO:
12048.0

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.2 .. NELBO: 5342.22
*****
*****
Validation loss decreased (10756.533203 --> 10684.439453). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11941.97 .. NELBO:
11942.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.1 .. NELBO: 5312.12
*****
*****
Validation loss decreased (10684.439453 --> 10624.238281). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11847.54 .. NELBO:
11847.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.01 .. NELBO: 5300.03
*****
*****
Validation loss decreased (10624.238281 --> 10600.058594). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.56 .. NELBO:
11791.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.96 .. NELBO: 5310.98
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.84 .. NELBO:
11780.88

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.93 .. NELBO: 5333.95
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.21 .. NELBO:
11792.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.35 .. NELBO: 5350.37
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.73 .. NELBO:
11795.77
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.17 .. NELBO: 5353.19
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.44 .. NELBO:
11785.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.6 .. NELBO: 5347.62
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 151
model: ETM(
    (t_drop): Dropout(p=0.060503813037589546, inplace=False)

```

```

(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=79, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=79, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=79, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 86.53 .. Rec_loss: 12264.17 .. NELBO:
12350.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.89 .. Rec_loss: 5444.05 .. NELBO: 5451.94
*****
*****
Validation loss decreased (inf --> 10903.871094). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.54 .. Rec_loss: 12248.55 .. NELBO:
12257.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5432.33 .. NELBO: 5432.73
*****
*****
Validation loss decreased (10903.871094 --> 10865.452148). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12210.73 .. NELBO:
12211.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.03 .. NELBO: 5410.1
*****
*****
Validation loss decreased (10865.452148 --> 10820.187500). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12142.04 .. NELBO:
12142.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.07 .. NELBO: 5378.09
*****
*****
Validation loss decreased (10820.187500 --> 10756.184570). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12046.68 .. NELBO:
12046.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.92 .. NELBO: 5341.94
*****
*****
Validation loss decreased (10756.184570 --> 10683.881836). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11939.44 .. NELBO:
11939.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.92 .. NELBO: 5311.94
*****
*****
Validation loss decreased (10683.881836 --> 10623.882812). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.54 .. NELBO:
11845.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.33 .. NELBO: 5300.35
*****
*****
Validation loss decreased (10623.882812 --> 10600.693359). Saving model ...

```

```

*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.64 .. NELBO:
11790.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.87 .. NELBO: 5311.89
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.04 .. NELBO:
11781.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.98 .. NELBO: 5335.0
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.5 .. NELBO:
11792.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.92 .. NELBO: 5350.94
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.82 .. NELBO:
11795.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.16 .. NELBO: 5353.18
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.1 .. NELBO:
11785.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.31 .. NELBO: 5347.33
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.060503813037589546, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=79, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=79, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=79, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 96.69 .. Rec_loss: 12264.08 .. NELBO:
12360.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.96 .. Rec_loss: 5444.04 .. NELBO: 5452.0
*****
*****
Validation loss decreased (inf --> 10903.997070). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.48 .. Rec_loss: 12248.43 .. NELBO:
12256.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.04 .. NELBO: 5432.47

```

```

*****
*****
Validation loss decreased (10903.997070 --> 10864.946289). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12209.25 .. NELBO:
12209.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.23 .. NELBO: 5409.31
*****
*****
Validation loss decreased (10864.946289 --> 10818.631836). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12138.8 .. NELBO:
12138.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.61 .. NELBO: 5376.64
*****
*****
Validation loss decreased (10818.631836 --> 10753.266602). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12042.05 .. NELBO:
12042.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.02 .. NELBO: 5340.04
*****
*****
Validation loss decreased (10753.266602 --> 10680.073242). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11934.4 .. NELBO:
11934.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.34 .. NELBO: 5310.36

```

```

*****
*****
Validation loss decreased (10680.073242 --> 10620.718750). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11840.52 .. NELBO:
11840.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.07 .. NELBO: 5300.09
*****
*****
Validation loss decreased (10620.718750 --> 10600.167969). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.88 .. NELBO:
11787.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.25 .. NELBO: 5313.27
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.99 .. NELBO:
11781.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.01 .. NELBO: 5337.03
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.12 .. NELBO:
11794.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.38 .. NELBO: 5352.4

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.57 .. NELBO:
11796.61
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.68 .. NELBO: 5353.7
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.28 .. NELBO:
11784.32
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.29 .. NELBO: 5347.31
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.060503813037589546, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=79, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=79, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=79, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 87.91 .. Rec_loss: 12264.03 .. NELBO:
12351.94
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.76 .. Rec_loss: 5443.88 .. NELBO: 5451.64
*****
*****
Validation loss decreased (inf --> 10903.281250). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.34 .. Rec_loss: 12248.11 .. NELBO:
12256.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5431.81 .. NELBO: 5432.25
*****
*****
Validation loss decreased (10903.281250 --> 10864.492188). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12208.69 .. NELBO:
12209.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.12 .. NELBO: 5409.2
*****
*****
Validation loss decreased (10864.492188 --> 10818.414062). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12139.15 .. NELBO:
12139.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.99 .. NELBO: 5377.02
*****
*****
Validation loss decreased (10818.414062 --> 10754.034180). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12044.03 .. NELBO:
12044.08
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.96 .. NELBO: 5340.98
*****
*****
Validation loss decreased (10754.034180 --> 10681.956055). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11937.18 .. NELBO:
11937.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.4 .. NELBO: 5311.42
*****
*****
Validation loss decreased (10681.956055 --> 10622.831055). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11844.36 .. NELBO:
11844.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.3 .. NELBO: 5300.32
*****
*****
Validation loss decreased (10622.831055 --> 10600.635742). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.15 .. NELBO:
11790.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.02 .. NELBO: 5312.04
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.67 .. NELBO:
11780.71
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.9 .. NELB0: 5334.92
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.2 .. NELB0:
11792.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.62 .. NELB0: 5350.64
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.7 .. NELB0:
11795.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.82 .. NELB0: 5352.84
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.7 .. NELB0:
11784.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.06 .. NELB0: 5347.08
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 152
model: ETM(
  (t_drop): Dropout(p=0.04573043215006916, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)

```

```

(alphas): Linear(in_features=300, out_features=76, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 89.74 .. Rec_loss: 12264.02 .. NELBO:
12353.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.04 .. Rec_loss: 5443.85 .. NELBO: 5451.89
*****
*****
Validation loss decreased (inf --> 10903.781250). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.65 .. Rec_loss: 12247.75 .. NELBO:
12256.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5431.7 .. NELBO: 5432.12
*****
*****
Validation loss decreased (10903.781250 --> 10864.248047). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12208.39 .. NELBO:
12209.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.82 .. NELBO: 5408.9
*****
*****
Validation loss decreased (10864.248047 --> 10817.789062). Saving model ...
*****
*****

```

```
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12138.45 .. NELBO:
12138.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.36 .. NELBO: 5376.39
*****
*****
Validation loss decreased (10817.789062 --> 10752.769531). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12042.04 .. NELBO:
12042.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.07 .. NELBO: 5340.09
*****
*****
Validation loss decreased (10752.769531 --> 10680.174805). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11934.62 .. NELBO:
11934.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.55 .. NELBO: 5310.57
*****
*****
Validation loss decreased (10680.174805 --> 10621.146484). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.09 .. NELBO:
11841.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.01 .. NELBO: 5300.03
*****
*****
Validation loss decreased (10621.146484 --> 10600.056641). Saving model ...
*****
*****
```

```
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.81 .. NELBO:
11787.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.56 .. NELBO: 5312.58
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.34 .. NELBO:
11780.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.95 .. NELBO: 5335.97
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.81 .. NELBO:
11792.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.63 .. NELBO: 5351.65
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.76 .. NELBO:
11795.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.54 .. NELBO: 5353.56
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
```

```

Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.61 .. NELBO:
11784.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.52 .. NELBO: 5347.54
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04573043215006916, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 84.26 .. Rec_loss: 12263.96 .. NELBO:
12348.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.89 .. Rec_loss: 5444.04 .. NELBO: 5451.93
*****
*****
Validation loss decreased (inf --> 10903.854492). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.44 .. Rec_loss: 12248.37 .. NELBO:
12256.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5431.94 .. NELBO: 5432.36
*****
*****

```

```

Validation loss decreased (10903.854492 --> 10864.702148). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12208.88 .. NELBO:
12209.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.13 .. NELBO: 5409.2
*****
*****
Validation loss decreased (10864.702148 --> 10818.408203). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12138.28 .. NELBO:
12138.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.72 .. NELBO: 5376.74
*****
*****
Validation loss decreased (10818.408203 --> 10753.477539). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12043.07 .. NELBO:
12043.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.41 .. NELBO: 5340.43
*****
*****
Validation loss decreased (10753.477539 --> 10680.849609). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11935.23 .. NELBO:
11935.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.76 .. NELBO: 5310.78
*****
*****

```



```

Validation loss decreased (10680.849609 --> 10621.560547). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11841.78 .. NELBO:
11841.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.08 .. NELBO: 5300.1
*****
*****
Validation loss decreased (10621.560547 --> 10600.187500). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.4 .. NELBO:
11788.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.62 .. NELBO: 5312.64
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.0 .. NELBO:
11781.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.05 .. NELBO: 5336.07
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.15 .. NELBO:
11793.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.64 .. NELBO: 5351.66
*****
*****

```

```

EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.09 .. NELBO:
11796.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.44 .. NELBO: 5353.46
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.44 .. NELBO:
11784.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.38 .. NELBO: 5347.4
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04573043215006916, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 91.28 .. Rec_loss: 12263.72 .. NELBO:
12355.0
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 8.05 .. Rec_loss: 5443.35 .. NELBO: 5451.4
*****
*****
Validation loss decreased (inf --> 10902.801758). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.7 .. Rec_loss: 12246.23 .. NELBO:
12254.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5430.78 .. NELBO: 5431.24
*****
*****
Validation loss decreased (10902.801758 --> 10862.483398). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12204.53 .. NELBO:
12205.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.31 .. NELBO: 5407.38
*****
*****
Validation loss decreased (10862.483398 --> 10814.762695). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12133.65 .. NELBO:
12133.76
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.61 .. NELBO: 5374.63
*****
*****
Validation loss decreased (10814.762695 --> 10749.264648). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12035.77 .. NELBO:
12035.81
*****
*****
*****

```

```
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.67 .. NELBO: 5338.69
*****
*****
Validation loss decreased (10749.264648 --> 10677.370117). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11928.9 .. NELBO:
11928.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.09 .. NELBO: 5310.11
*****
*****
Validation loss decreased (10677.370117 --> 10620.211914). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11837.66 .. NELBO:
11837.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.68 .. NELBO: 5300.7
*****
*****
Validation loss decreased (10620.211914 --> 10601.386719). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.3 .. NELBO:
11787.33
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.77 .. NELBO: 5313.79
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.71 .. NELBO:
11780.74
*****
*****
*****
*****
```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.7 .. NELBO: 5336.72
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.91 .. NELBO:
11792.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.56 .. NELBO: 5351.58
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.31 .. NELBO:
11795.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.0 .. NELBO: 5353.02
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.49 .. NELBO:
11783.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.91 .. NELBO: 5346.93
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 153
model: ETM(
  (t_drop): Dropout(p=0.06110842086560892, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=79, bias=False)
  (q_theta): Sequential(

```

```

(0): Linear(in_features=13198, out_features=800, bias=True)
(1): Sigmoid()
(2): Linear(in_features=800, out_features=800, bias=True)
(3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=79, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=79, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 85.88 .. Rec_loss: 12263.85 .. NELBO:
12349.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.72 .. Rec_loss: 5443.64 .. NELBO: 5451.36
*****
*****
Validation loss decreased (inf --> 10902.728516). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.35 .. Rec_loss: 12247.11 .. NELBO:
12255.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5430.97 .. NELBO: 5431.37
*****
*****
Validation loss decreased (10902.728516 --> 10862.738281). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12206.34 .. NELBO:
12206.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.48 .. NELBO: 5407.54
*****
*****
Validation loss decreased (10862.738281 --> 10815.084961). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12134.2 .. NELBO:
12134.3

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.54 .. NELBO: 5374.56
*****
*****
Validation loss decreased (10815.084961 --> 10749.125977). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12036.95 .. NELBO:
12036.99
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.23 .. NELBO: 5338.25
*****
*****
Validation loss decreased (10749.125977 --> 10676.491211). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11929.06 .. NELBO:
11929.09
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.46 .. NELBO: 5309.48
*****
*****
Validation loss decreased (10676.491211 --> 10618.949219). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11837.16 .. NELBO:
11837.19
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELBO: 5300.39
*****
*****
Validation loss decreased (10618.949219 --> 10600.766602). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.8 .. NELBO:
11786.83

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.18 .. NELBO: 5314.2
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.54 .. NELBO:
11781.58
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.54 .. NELBO: 5337.56
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.52 .. NELBO:
11793.56
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.19 .. NELBO: 5352.21
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.23 .. NELBO:
11795.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.24 .. NELBO: 5353.26
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.28 .. NELBO:
11783.31

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.97 .. NELBO: 5346.99
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06110842086560892, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=79, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=79, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=79, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 93.67 .. Rec_loss: 12264.28 .. NELBO:
12357.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.3 .. Rec_loss: 5444.39 .. NELBO: 5452.69
*****
*****
Validation loss decreased (inf --> 10905.375977). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.01 .. Rec_loss: 12250.03 .. NELBO:
12259.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5433.23 .. NELBO: 5433.73
*****
*****
Validation loss decreased (10905.375977 --> 10867.458984). Saving model ...
*****

```

```

*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 12212.91 .. NELBO:
12213.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5411.36 .. NELBO: 5411.45
*****
*****
Validation loss decreased (10867.458984 --> 10822.902344). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12145.54 .. NELBO:
12145.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.5 .. NELBO: 5379.53
*****
*****
Validation loss decreased (10822.902344 --> 10759.049805). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12051.07 .. NELBO:
12051.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.03 .. NELBO: 5343.05
*****
*****
Validation loss decreased (10759.049805 --> 10686.107422). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11943.3 .. NELBO:
11943.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.38 .. NELBO: 5312.4
*****
*****
Validation loss decreased (10686.107422 --> 10624.793945). Saving model ...
*****

```

```

*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11848.03 .. NELBO:
11848.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.04 .. NELBO: 5300.06
*****
*****
Validation loss decreased (10624.793945 --> 10600.107422). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.51 .. NELBO:
11790.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.22 .. NELBO: 5311.24
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.58 .. NELBO:
11780.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.64 .. NELBO: 5334.66
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.87 .. NELBO:
11792.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.18 .. NELBO: 5351.2
*****
*****
EarlyStopping counter: 3 out of 5
*****

```

```

*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.26 .. NELBO:
11796.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.79 .. NELBO: 5353.81
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.09 .. NELBO:
11785.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.01 .. NELBO: 5348.03
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06110842086560892, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=79, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=79, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=79, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 83.95 .. Rec_loss: 12264.09 .. NELBO:
12348.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.07 .. Rec_loss: 5444.07 .. NELBO: 5452.14
*****

```

```

*****
Validation loss decreased (inf --> 10904.281250). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.69 .. Rec_loss: 12248.13 .. NELBO:
12256.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5431.75 .. NELBO: 5432.16
*****
*****
Validation loss decreased (10904.281250 --> 10864.325195). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12208.21 .. NELBO:
12208.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.63 .. NELBO: 5408.71
*****
*****
Validation loss decreased (10864.325195 --> 10817.431641). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12137.49 .. NELBO:
12137.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.82 .. NELBO: 5375.85
*****
*****
Validation loss decreased (10817.431641 --> 10751.696289). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12040.03 .. NELBO:
12040.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.35 .. NELBO: 5339.37
*****

```

```

*****
Validation loss decreased (10751.696289 --> 10678.750977). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11932.8 .. NELBO:
11932.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.12 .. NELBO: 5310.14
*****
*****
Validation loss decreased (10678.750977 --> 10620.278320). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11839.6 .. NELBO:
11839.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.33 .. NELBO: 5300.35
*****
*****
Validation loss decreased (10620.278320 --> 10600.701172). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.72 .. NELBO:
11787.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.59 .. NELBO: 5313.61
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.23 .. NELBO:
11781.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.96 .. NELBO: 5336.98
*****

```

```

*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.12 .. NELBO:
11794.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.03 .. NELBO: 5352.05
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.7 .. NELBO:
11795.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.42 .. NELBO: 5353.44
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.96 .. NELBO:
11784.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.2 .. NELBO: 5347.22
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 154
model: ETM(
  (t_drop): Dropout(p=0.03058415696148114, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()

```

```

        (2): Linear(in_features=800, out_features=800, bias=True)
        (3): Sigmoid()
    )
    (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
    (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.43 .. Rec_loss: 12263.83 .. NELBO:
12343.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.72 .. Rec_loss: 5444.1 .. NELBO: 5451.82
*****
*****
Validation loss decreased (inf --> 10903.654297). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.35 .. Rec_loss: 12249.57 .. NELBO:
12257.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5433.25 .. NELBO: 5433.76
*****
*****
Validation loss decreased (10903.654297 --> 10867.519531). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 12213.21 .. NELBO:
12213.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5411.8 .. NELBO: 5411.92
*****
*****
Validation loss decreased (10867.519531 --> 10823.840820). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 12147.27 .. NELBO:
12147.46
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.56 .. NELBO: 5380.59
*****
*****
Validation loss decreased (10823.840820 --> 10761.193359). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12053.77 .. NELBO:
12053.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.62 .. NELBO: 5344.64
*****
*****
Validation loss decreased (10761.193359 --> 10689.278320). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11948.04 .. NELBO:
11948.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.81 .. NELBO: 5313.83
*****
*****
Validation loss decreased (10689.278320 --> 10627.660156). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11851.2 .. NELBO:
11851.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.39 .. NELBO: 5300.4
*****
*****
Validation loss decreased (10627.660156 --> 10600.809570). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.31 .. NELBO:
11792.34
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.19 .. NELBO: 5310.21
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.4 .. NELBO:
11779.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.22 .. NELBO: 5333.24
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.51 .. NELBO:
11791.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.58 .. NELBO: 5350.6
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.34 .. NELBO:
11796.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.1 .. NELBO: 5354.12
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.46 .. NELBO:
11786.49
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.64 .. NELBO: 5348.65
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.03058415696148114, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 67.11 .. Rec_loss: 12264.16 .. NELBO:
12331.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.88 .. Rec_loss: 5443.81 .. NELBO: 5450.69
*****
*****
Validation loss decreased (inf --> 10901.386719). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.49 .. Rec_loss: 12248.27 .. NELBO:
12255.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5431.85 .. NELBO: 5432.27
*****
*****
Validation loss decreased (10901.386719 --> 10864.538086). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12209.01 .. NELBO:

```

```
12209.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5408.92 .. NELBO: 5409.01
*****
*****
Validation loss decreased (10864.538086 --> 10818.029297). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 12138.85 .. NELBO:
12139.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5376.4 .. NELBO: 5376.45
*****
*****
Validation loss decreased (10818.029297 --> 10752.898438). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12042.14 .. NELBO:
12042.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5340.05 .. NELBO: 5340.09
*****
*****
Validation loss decreased (10752.898438 --> 10680.166992). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11934.44 .. NELBO:
11934.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5310.52 .. NELBO: 5310.56
*****
*****
Validation loss decreased (10680.166992 --> 10621.117188). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11841.08 .. NELBO:
```

```
11841.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5300.14 .. NELBO: 5300.18
*****
*****
Validation loss decreased (10621.117188 --> 10600.356445). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11788.76 .. NELBO:
11788.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5312.86 .. NELBO: 5312.9
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11780.94 .. NELBO:
11781.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5336.15 .. NELBO: 5336.19
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11793.61 .. NELBO:
11793.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5351.46 .. NELBO: 5351.5
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11795.77 .. NELBO:
```

```

11795.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5353.05 .. NELBO: 5353.09
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11784.03 .. NELBO:
11784.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5346.94 .. NELBO: 5346.98
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.03058415696148114, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.44 .. Rec_loss: 12264.34 .. NELBO:
12343.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.62 .. Rec_loss: 5444.09 .. NELBO: 5451.71
*****
*****
Validation loss decreased (inf --> 10903.413086). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.09 .. Rec_loss: 12249.14 .. NELBO:
12257.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5432.85 .. NELBO: 5433.24
*****
*****
Validation loss decreased (10903.413086 --> 10866.466797). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12211.85 .. NELBO:
12212.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.94 .. NELBO: 5411.01
*****
*****
Validation loss decreased (10866.466797 --> 10822.030273). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12144.35 .. NELBO:
12144.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.33 .. NELBO: 5379.35
*****
*****
Validation loss decreased (10822.030273 --> 10758.701172). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12050.94 .. NELBO:
12050.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.26 .. NELBO: 5343.28
*****
*****
Validation loss decreased (10758.701172 --> 10686.560547). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11943.81 .. NELBO:
11943.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.85 .. NELBO: 5312.86
*****
*****
Validation loss decreased (10686.560547 --> 10625.722656). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11848.68 .. NELBO:
11848.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.39 .. NELBO: 5300.4
*****
*****
Validation loss decreased (10625.722656 --> 10600.807617). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.12 .. NELBO:
11791.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.19 .. NELBO: 5311.21
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.62 .. NELBO:
11780.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.33 .. NELBO: 5334.35
*****
*****
EarlyStopping counter: 2 out of 5

```



```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.01 .. NELBO:
11792.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.96 .. NELBO: 5350.98
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.12 .. NELBO:
11796.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.76 .. NELBO: 5353.78
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.8 .. NELBO:
11785.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.02 .. NELBO: 5348.03
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 155
model: ETM(
  (t_drop): Dropout(p=0.061095697927479986, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()

```

```

)
(mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 12263.51 .. NELBO:
12263.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.91 .. Rec_loss: 5442.68 .. NELBO: 5443.59
*****
*****
Validation loss decreased (inf --> 10887.174805). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 1.54 .. Rec_loss: 12242.22 .. NELBO:
12243.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5426.39 .. NELBO: 5426.41
*****
*****
Validation loss decreased (10887.174805 --> 10852.803711). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 12190.42 .. NELBO:
12190.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5398.4 .. NELBO: 5398.74
*****
*****
Validation loss decreased (10852.803711 --> 10797.476562). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12106.62 .. NELBO:
12107.2
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5362.17 .. NELBO: 5362.57
*****
*****
Validation loss decreased (10797.476562 --> 10725.134766). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 1.22 .. Rec_loss: 12000.13 .. NELBO:
12001.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.07 .. Rec_loss: 5325.92 .. NELBO: 5327.99
*****
*****
Validation loss decreased (10725.134766 --> 10655.996094). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 3.18 .. Rec_loss: 11892.68 .. NELBO:
11895.86
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 5303.48 .. NELBO: 5304.08
*****
*****
Validation loss decreased (10655.996094 --> 10608.153320). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 1.08 .. Rec_loss: 11815.48 .. NELBO:
11816.56
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5302.61 .. NELBO: 5302.72
*****
*****
Validation loss decreased (10608.153320 --> 10605.439453). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 11782.18 .. NELBO:
11782.68
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 5320.39 .. NELBO: 5320.98
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 11784.48 .. NELBO:
11785.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 5341.25 .. NELBO: 5341.4
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 1.55 .. Rec_loss: 11792.52 .. NELBO:
11794.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.21 .. Rec_loss: 5347.51 .. NELBO: 5349.72
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 4.23 .. Rec_loss: 11782.86 .. NELBO:
11787.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.71 .. Rec_loss: 5345.46 .. NELBO: 5347.17
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 3.98 .. Rec_loss: 11769.93 .. NELBO:
11773.91
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 4.03 .. Rec_loss: 5336.16 .. NELBO: 5340.19
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.061095697927479986, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 12263.58 .. NELBO:
12263.86
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.15 .. Rec_loss: 5442.61 .. NELBO: 5443.76
*****
*****
Validation loss decreased (inf --> 10887.503906). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.47 .. Rec_loss: 12241.87 .. NELBO:
12243.34
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5425.99 .. NELBO: 5426.02
*****
*****
Validation loss decreased (10887.503906 --> 10852.038086). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12188.56 .. NELBO:
12189.2
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5397.31 .. NELBO: 5397.8
*****
*****
Validation loss decreased (10852.038086 --> 10795.593750). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.83 .. Rec_loss: 12102.06 .. NELBO:
12102.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 5360.88 .. NELBO: 5361.47
*****
*****
Validation loss decreased (10795.593750 --> 10722.950195). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.7 .. Rec_loss: 11995.79 .. NELBO:
11997.49
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.56 .. Rec_loss: 5325.08 .. NELBO: 5326.64
*****
*****
Validation loss decreased (10722.950195 --> 10653.279297). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.72 .. Rec_loss: 11890.44 .. NELBO:
11892.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5303.31 .. NELBO: 5303.41
*****
*****
Validation loss decreased (10653.279297 --> 10606.836914). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.43 .. Rec_loss: 11813.53 .. NELBO:
11814.96
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5303.64 .. NELBO: 5303.84
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.22 .. Rec_loss: 11782.58 .. NELBO:
11782.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 5322.01 .. NELBO: 5322.71
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 11785.66 .. NELBO:
11786.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5342.17 .. NELBO: 5342.62
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.92 .. Rec_loss: 11793.32 .. NELBO:
11794.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.18 .. Rec_loss: 5347.8 .. NELBO: 5349.98
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 5.59 .. Rec_loss: 11782.9 .. NELBO:
11788.49
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.95 .. Rec_loss: 5340.64 .. NELBO: 5345.59
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.061095697927479986, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=76, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=76, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=76, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 12263.6 .. NELBO:
12263.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 5442.91 .. NELBO: 5443.63
*****
*****
Validation loss decreased (inf --> 10887.256836). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.44 .. Rec_loss: 12242.46 .. NELBO:
12243.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5426.93 .. NELBO: 5426.95
*****
*****
Validation loss decreased (10887.256836 --> 10853.891602). Saving model ...
*****
*****

```



```

Epoch----->3 .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 12191.88 .. NELBO:
12192.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5399.48 .. NELBO: 5399.71
*****
*****
Validation loss decreased (10853.891602 --> 10799.409180). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 12108.94 .. NELBO:
12109.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5363.45 .. NELBO: 5363.96
*****
*****
Validation loss decreased (10799.409180 --> 10727.920898). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 12002.97 .. NELBO:
12004.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.46 .. Rec_loss: 5327.49 .. NELBO: 5328.95
*****
*****
Validation loss decreased (10727.920898 --> 10657.895508). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 2.1 .. Rec_loss: 11896.45 .. NELBO:
11898.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 5304.27 .. NELBO: 5304.92
*****
*****
Validation loss decreased (10657.895508 --> 10609.841797). Saving model ...
*****
*****

```

```
Epoch----->7 .. LR: 0.005 .. KL_theta: 1.2 .. Rec_loss: 11817.46 .. NELBO:
11818.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5302.65 .. NELBO: 5302.85
*****
*****
Validation loss decreased (10609.841797 --> 10605.697266). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 11782.86 .. NELBO:
11783.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5320.52 .. NELBO: 5320.68
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 11784.85 .. NELBO:
11785.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 5340.93 .. NELBO: 5341.55
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 1.2 .. Rec_loss: 11792.79 .. NELBO:
11793.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.01 .. Rec_loss: 5349.13 .. NELBO: 5350.14
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
```

```

Epoch---->11 .. LR: 0.005 .. KL_theta: 2.72 .. Rec_loss: 11786.44 .. NELBO:
11789.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.1 .. Rec_loss: 5345.36 .. NELBO: 5347.46
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 3.85 .. Rec_loss: 11771.21 .. NELBO:
11775.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.13 .. Rec_loss: 5338.61 .. NELBO: 5340.74
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 156
model: ETM(
  (t_drop): Dropout(p=0.06168860103318319, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 73.26 .. Rec_loss: 12263.93 .. NELBO:
12337.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.33 .. Rec_loss: 5443.62 .. NELBO: 5450.95
*****

```

```

*****
Validation loss decreased (inf --> 10901.898438). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.06 .. Rec_loss: 12247.29 .. NELBO:
12255.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5431.57 .. NELBO: 5432.0
*****
*****
Validation loss decreased (10901.898438 --> 10864.002930). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12207.84 .. NELBO:
12208.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5408.46 .. NELBO: 5408.52
*****
*****
Validation loss decreased (10864.002930 --> 10817.053711). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12137.28 .. NELBO:
12137.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.94 .. NELBO: 5375.96
*****
*****
Validation loss decreased (10817.053711 --> 10751.924805). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12041.52 .. NELBO:
12041.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5339.71 .. NELBO: 5339.72
*****

```

```

*****
Validation loss decreased (10751.924805 --> 10679.438477). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11933.44 .. NELBO:
11933.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.36 .. NELBO: 5310.37
*****
*****
Validation loss decreased (10679.438477 --> 10620.746094). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11841.22 .. NELBO:
11841.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.11 .. NELBO: 5300.12
*****
*****
Validation loss decreased (10620.746094 --> 10600.247070). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11788.41 .. NELBO:
11788.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.85 .. NELBO: 5312.86
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11780.95 .. NELBO:
11780.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.05 .. NELBO: 5336.06
*****

```

```

*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.15 .. NELBO:
11793.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.39 .. NELBO: 5351.4
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.77 .. NELBO:
11795.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.1 .. NELBO: 5353.11
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.2 .. NELBO:
11784.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.05 .. NELBO: 5347.06
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06168860103318319, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)

```

```

    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 80.47 .. Rec_loss: 12264.06 .. NELBO:
12344.53
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.66 .. Rec_loss: 5443.97 .. NELBO: 5451.63
*****
*****
Validation loss decreased (inf --> 10903.271484). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.22 .. Rec_loss: 12248.86 .. NELBO:
12257.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.32 .. NELBO: 5432.77
*****
*****
Validation loss decreased (10903.271484 --> 10865.550781). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12210.07 .. NELBO:
12210.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5410.0 .. NELBO: 5410.09
*****
*****
Validation loss decreased (10865.550781 --> 10820.179688). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12140.86 .. NELBO:
12140.99
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.02 .. NELBO: 5378.05
*****
*****
Validation loss decreased (10820.179688 --> 10756.092773). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12047.05 .. NELBO:
12047.09
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.83 .. NELBO: 5341.85
*****
*****
Validation loss decreased (10756.092773 --> 10683.695312). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11939.41 .. NELBO:
11939.44
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.79 .. NELBO: 5311.8
*****
*****
Validation loss decreased (10683.695312 --> 10623.615234). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.13 .. NELBO:
11845.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.22 .. NELBO: 5300.23
*****
*****
Validation loss decreased (10623.615234 --> 10600.461914). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.49 .. NELBO:
11789.52
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.93 .. NELBO: 5311.94
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.3 .. NELBO:
11780.33
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.29 .. NELBO: 5335.3
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.59 .. NELBO:
11792.62
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.45 .. NELBO: 5351.46
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.56 .. NELBO:
11796.59
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.67 .. NELBO: 5353.68
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.35 .. NELBO:
11785.38
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.66 .. NELBO: 5347.67
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06168860103318319, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 82.71 .. Rec_loss: 12263.74 .. NELBO:
12346.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.51 .. Rec_loss: 5443.5 .. NELBO: 5451.01
*****
*****
Validation loss decreased (inf --> 10902.016602). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.15 .. Rec_loss: 12247.14 .. NELBO:
12255.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5431.27 .. NELBO: 5431.72
*****
*****
Validation loss decreased (10902.016602 --> 10863.440430). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12207.15 .. NELBO:
12207.81

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```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5407.97 .. NELBO: 5408.06
*****
*****
Validation loss decreased (10863.440430 --> 10816.120117). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12135.77 .. NELBO:
12135.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.15 .. NELBO: 5375.17
*****
*****
Validation loss decreased (10816.120117 --> 10750.350586). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12038.76 .. NELBO:
12038.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.81 .. NELBO: 5338.83
*****
*****
Validation loss decreased (10750.350586 --> 10677.657227). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11930.88 .. NELBO:
11930.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.76 .. NELBO: 5309.77
*****
*****
Validation loss decreased (10677.657227 --> 10619.552734). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.52 .. NELBO:
11838.55

```

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*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.18 .. NELBO: 5300.19
*****
*****
Validation loss decreased (10619.552734 --> 10600.385742). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.97 .. NELBO:
11787.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.62 .. NELBO: 5313.63
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.97 .. NELBO:
11781.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.05 .. NELBO: 5337.07
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.98 .. NELBO:
11794.01
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.96 .. NELBO: 5351.98
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.43 .. NELBO:
11795.46

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.09 .. NELBO: 5353.1
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.86 .. NELBO:
11783.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.74 .. NELBO: 5346.75
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 157
model: ETM(
  (t_drop): Dropout(p=0.14110007842096517, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=69, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=69, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=69, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 66.15 .. Rec_loss: 12264.16 .. NELBO:
12330.31
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.77 .. Rec_loss: 5444.0 .. NELBO: 5450.77
*****
*****
Validation loss decreased (inf --> 10901.546875). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.49 .. Rec_loss: 12248.54 .. NELBO:
12256.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5432.0 .. NELBO: 5432.31
*****
*****
Validation loss decreased (10901.546875 --> 10864.604492). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 12208.88 .. NELBO:
12209.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5408.98 .. NELBO: 5409.03
*****
*****
Validation loss decreased (10864.604492 --> 10818.067383). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12138.48 .. NELBO:
12138.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.33 .. NELBO: 5376.35
*****
*****
Validation loss decreased (10818.067383 --> 10752.691406). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12042.26 .. NELBO:
12042.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.88 .. NELBO: 5339.9
*****
*****
Validation loss decreased (10752.691406 --> 10679.799805). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11934.31 .. NELBO:
11934.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.39 .. NELBO: 5310.41
*****
*****
Validation loss decreased (10679.799805 --> 10620.812500). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11841.8 .. NELBO:
11841.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.09 .. NELBO: 5300.11
*****
*****
Validation loss decreased (10620.812500 --> 10600.204102). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.08 .. NELBO:
11789.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.86 .. NELBO: 5312.88
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.53 .. NELBO:
11781.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.09 .. NELBO: 5336.11
*****
*****
EarlyStopping counter: 2 out of 5

```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.62 .. NELBO:
11793.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.33 .. NELBO: 5351.35
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.67 .. NELBO:
11795.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.91 .. NELBO: 5352.93
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.52 .. NELBO:
11783.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.85 .. NELBO: 5346.87
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.14110007842096517, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=69, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
)

```



```

(mu_q_theta): Linear(in_features=800, out_features=69, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=69, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 66.71 .. Rec_loss: 12263.94 .. NELBO:
12330.65
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.85 .. Rec_loss: 5443.65 .. NELBO: 5450.5
*****
*****
Validation loss decreased (inf --> 10901.007812). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.6 .. Rec_loss: 12246.99 .. NELBO:
12254.59
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5431.09 .. NELBO: 5431.37
*****
*****
Validation loss decreased (10901.007812 --> 10862.736328). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 12206.27 .. NELBO:
12206.67
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5407.88 .. NELBO: 5407.93
*****
*****
Validation loss decreased (10862.736328 --> 10815.864258). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12135.07 .. NELBO:
12135.15
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.38 .. NELBO: 5375.4

```

```

*****
*****
Validation loss decreased (10815.864258 --> 10750.808594). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12038.78 .. NELBO:
12038.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.48 .. NELBO: 5339.5
*****
*****
Validation loss decreased (10750.808594 --> 10678.995117). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11932.58 .. NELBO:
11932.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.64 .. NELBO: 5310.66
*****
*****
Validation loss decreased (10678.995117 --> 10621.320312). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11840.79 .. NELBO:
11840.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.62 .. NELBO: 5300.64
*****
*****
Validation loss decreased (10621.320312 --> 10601.282227). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.73 .. NELBO:
11788.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.03 .. NELBO: 5313.05

```

```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.23 .. NELBO:
11781.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.71 .. NELBO: 5335.73
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.68 .. NELBO:
11792.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.86 .. NELBO: 5350.88
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.46 .. NELBO:
11795.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.64 .. NELBO: 5352.66
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.03 .. NELBO:
11784.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.7 .. NELBO: 5346.72

```

```

*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.14110007842096517, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=69, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=69, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=69, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 70.26 .. Rec_loss: 12264.39 .. NELBO:
12334.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.1 .. Rec_loss: 5444.27 .. NELBO: 5451.37
*****
*****
Validation loss decreased (inf --> 10902.742188). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.87 .. Rec_loss: 12249.24 .. NELBO:
12257.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5432.48 .. NELBO: 5432.82
*****
*****
Validation loss decreased (10902.742188 --> 10865.650391). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 12211.13 .. NELBO:
12211.61
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5410.23 .. NELBO: 5410.28
*****
*****
Validation loss decreased (10865.650391 --> 10820.572266). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12142.58 .. NELBO:
12142.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.24 .. NELBO: 5378.26
*****
*****
Validation loss decreased (10820.572266 --> 10756.518555). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12047.64 .. NELBO:
12047.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.97 .. NELBO: 5341.99
*****
*****
Validation loss decreased (10756.518555 --> 10683.980469). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11940.09 .. NELBO:
11940.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.81 .. NELBO: 5311.83
*****
*****
Validation loss decreased (10683.980469 --> 10623.649414). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.2 .. NELBO:
11845.23
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.09 .. NELBO: 5300.11
*****
*****
Validation loss decreased (10623.649414 --> 10600.215820). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.08 .. NELBO:
11790.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.69 .. NELBO: 5311.71
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.5 .. NELBO:
11780.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.06 .. NELBO: 5335.08
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.92 .. NELBO:
11792.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.29 .. NELBO: 5351.31
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.39 .. NELBO:
11796.42
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.59 .. NELBO: 5353.61
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.07 .. NELBO:
11785.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.67 .. NELBO: 5347.69
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 158
model: ETM(
  (t_drop): Dropout(p=0.0025081212607170117, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=71, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=71, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=71, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 70.74 .. Rec_loss: 12264.11 .. NELBO:
12334.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.71 .. Rec_loss: 5443.51 .. NELBO: 5450.22
*****
*****
Validation loss decreased (inf --> 10900.443359). Saving model ...
*****
*****

```

```

Epoch----->2 .. LR: 0.005 .. KL_theta: 7.21 .. Rec_loss: 12246.74 .. NELBO:
12253.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5430.63 .. NELBO: 5431.02
*****
*****
Validation loss decreased (10900.443359 --> 10862.032227). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12204.75 .. NELBO:
12205.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5406.74 .. NELBO: 5406.81
*****
*****
Validation loss decreased (10862.032227 --> 10813.631836). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12132.22 .. NELBO:
12132.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5373.48 .. NELBO: 5373.51
*****
*****
Validation loss decreased (10813.631836 --> 10747.014648). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12034.49 .. NELBO:
12034.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.19 .. NELBO: 5337.21
*****
*****
Validation loss decreased (10747.014648 --> 10674.427734). Saving model ...
*****
*****

```



```
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11926.77 .. NELBO:
11926.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.9 .. NELBO: 5308.92
*****
*****
Validation loss decreased (10674.427734 --> 10617.835938). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11836.35 .. NELBO:
11836.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.45 .. NELBO: 5300.47
*****
*****
Validation loss decreased (10617.835938 --> 10600.943359). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.27 .. NELBO:
11787.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.56 .. NELBO: 5314.58
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.5 .. NELBO:
11782.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.51 .. NELBO: 5337.53
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
```

```

Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.89 .. NELBO:
11793.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.57 .. NELBO: 5351.59
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.66 .. NELBO:
11794.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.37 .. NELBO: 5352.39
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.21 .. NELBO:
11783.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.09 .. NELBO: 5346.11
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0025081212607170117, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=71, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=71, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=71, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 85.38 .. Rec_loss: 12264.25 .. NELBO:
12349.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.6 .. Rec_loss: 5443.99 .. NELBO: 5451.59
*****
*****
Validation loss decreased (inf --> 10903.173828). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.1 .. Rec_loss: 12248.4 .. NELBO:
12256.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5432.26 .. NELBO: 5432.72
*****
*****
Validation loss decreased (10903.173828 --> 10865.424805). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12209.47 .. NELBO:
12210.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.8 .. NELBO: 5409.88
*****
*****
Validation loss decreased (10865.424805 --> 10819.754883). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12140.62 .. NELBO:
12140.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.67 .. NELBO: 5377.7
*****
*****

```

```

Validation loss decreased (10819.754883 --> 10755.391602). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12045.42 .. NELBO:
12045.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.48 .. NELBO: 5341.5
*****
*****
Validation loss decreased (10755.391602 --> 10683.000977). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11938.44 .. NELBO:
11938.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.66 .. NELBO: 5311.68
*****
*****
Validation loss decreased (10683.000977 --> 10623.356445). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11844.45 .. NELBO:
11844.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.44 .. NELBO: 5300.46
*****
*****
Validation loss decreased (10623.356445 --> 10600.915039). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.76 .. NELBO:
11789.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.33 .. NELBO: 5312.35
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.9 .. NELBO:
11780.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.44 .. NELBO: 5335.46
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.02 .. NELBO:
11793.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.16 .. NELBO: 5351.18
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.85 .. NELBO:
11795.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.22 .. NELBO: 5353.24
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.65 .. NELBO:
11784.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.31 .. NELBO: 5347.33
*****
*****

```

```

EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0025081212607170117, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=71, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=71, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=71, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 84.48 .. Rec_loss: 12264.32 .. NELBO:
12348.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.71 .. Rec_loss: 5444.24 .. NELBO: 5451.95
*****
*****
Validation loss decreased (inf --> 10903.885742). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.23 .. Rec_loss: 12249.73 .. NELBO:
12257.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5433.46 .. NELBO: 5433.94
*****
*****
Validation loss decreased (10903.885742 --> 10867.899414). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 12214.25 .. NELBO:
12214.95
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5412.11 .. NELBO: 5412.19
*****
*****
Validation loss decreased (10867.899414 --> 10824.389648). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12147.83 .. NELBO:
12147.95
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.98 .. NELBO: 5381.01
*****
*****
Validation loss decreased (10824.389648 --> 10762.007812). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12055.08 .. NELBO:
12055.13
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.04 .. NELBO: 5345.06
*****
*****
Validation loss decreased (10762.007812 --> 10690.120117). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11948.72 .. NELBO:
11948.76
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.12 .. NELBO: 5314.14
*****
*****
Validation loss decreased (10690.120117 --> 10628.263672). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11852.25 .. NELBO:
11852.28
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.51 .. NELBO: 5300.53
*****
*****
Validation loss decreased (10628.263672 --> 10601.047852). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.54 .. NELBO:
11792.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.16 .. NELBO: 5310.18
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.69 .. NELBO:
11779.72
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.06 .. NELBO: 5333.08
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.11 .. NELBO:
11791.15
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.42 .. NELBO: 5350.44
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.85 .. NELBO:
11796.89
*****
*****
*****

```



```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.97 .. NELBO: 5353.99
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.36 .. NELBO:
11786.39
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.55 .. NELBO: 5348.57
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 159
model: ETM(
  (t_drop): Dropout(p=0.06076803014220726, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 79.1 .. Rec_loss: 12263.84 .. NELBO:
12342.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.38 .. Rec_loss: 5443.54 .. NELBO: 5450.92
*****
*****
Validation loss decreased (inf --> 10901.838867). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 7.92 .. Rec_loss: 12246.36 .. NELBO:
12254.28

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5430.39 .. NELBO: 5430.75
*****
*****
Validation loss decreased (10901.838867 --> 10861.504883). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 12203.88 .. NELBO:
12204.41
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5406.26 .. NELBO: 5406.33
*****
*****
Validation loss decreased (10861.504883 --> 10812.660156). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12130.46 .. NELBO:
12130.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5372.71 .. NELBO: 5372.73
*****
*****
Validation loss decreased (10812.660156 --> 10745.470703). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12031.46 .. NELBO:
12031.5
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.21 .. NELBO: 5336.23
*****
*****
Validation loss decreased (10745.470703 --> 10672.447266). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11923.07 .. NELBO:
11923.1

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.06 .. NELBO: 5308.08
*****
*****
Validation loss decreased (10672.447266 --> 10616.155273). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11832.93 .. NELBO:
11832.96
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.38 .. NELBO: 5300.4
*****
*****
Validation loss decreased (10616.155273 --> 10600.793945). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.24 .. NELBO:
11785.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.52 .. NELBO: 5315.54
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.07 .. NELBO:
11782.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.99 .. NELBO: 5339.01
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.33 .. NELBO:
11795.37

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.66 .. NELBO: 5352.68
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.07 .. NELBO:
11795.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.84 .. NELBO: 5352.86
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.11 .. NELBO:
11782.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.23 .. NELBO: 5346.25
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06076803014220726, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****

```

```

*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.28 .. Rec_loss: 12264.07 .. NELBO:
12350.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.77 .. Rec_loss: 5443.97 .. NELBO: 5451.74
*****
*****
Validation loss decreased (inf --> 10903.479492). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.37 .. Rec_loss: 12249.15 .. NELBO:
12257.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 5433.14 .. NELBO: 5433.68
*****
*****
Validation loss decreased (10903.479492 --> 10867.359375). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.81 .. Rec_loss: 12213.19 .. NELBO:
12214.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5411.46 .. NELBO: 5411.57
*****
*****
Validation loss decreased (10867.359375 --> 10823.139648). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 12146.15 .. NELBO:
12146.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.03 .. NELBO: 5380.06
*****
*****
Validation loss decreased (10823.139648 --> 10760.126953). Saving model ...
*****

```

```

*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12053.17 .. NELBO:
12053.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.96 .. NELBO: 5343.98
*****
*****
Validation loss decreased (10760.126953 --> 10687.964844). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11945.41 .. NELBO:
11945.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.22 .. NELBO: 5313.23
*****
*****
Validation loss decreased (10687.964844 --> 10626.473633). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11850.42 .. NELBO:
11850.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.11 .. NELBO: 5300.12
*****
*****
Validation loss decreased (10626.473633 --> 10600.252930). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.84 .. NELBO:
11791.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.35 .. NELBO: 5310.36
*****
*****
EarlyStopping counter: 1 out of 5
*****

```

```
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.08 .. NELBO:
11780.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5333.52 .. NELBO: 5333.53
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.09 .. NELBO:
11792.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5350.58 .. NELBO: 5350.59
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11797.01 .. NELBO:
11797.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.72 .. NELBO: 5353.73
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.16 .. NELBO:
11786.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.13 .. NELBO: 5348.14
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
```

```

model: ETM(
  (t_drop): Dropout(p=0.06076803014220726, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 75.54 .. Rec_loss: 12263.84 .. NELBO:
12339.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.16 .. Rec_loss: 5443.72 .. NELBO: 5450.88
*****
*****
Validation loss decreased (inf --> 10901.768555). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.72 .. Rec_loss: 12247.43 .. NELBO:
12255.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5431.66 .. NELBO: 5432.04
*****
*****
Validation loss decreased (10901.768555 --> 10864.077148). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 12207.71 .. NELBO:
12208.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.54 .. NELBO: 5408.61
*****
*****

```



```

*****
Validation loss decreased (10864.077148 --> 10817.209961). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12137.0 .. NELBO:
12137.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.96 .. NELBO: 5375.98
*****
*****
Validation loss decreased (10817.209961 --> 10751.968750). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12040.39 .. NELBO:
12040.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.76 .. NELBO: 5339.78
*****
*****
Validation loss decreased (10751.968750 --> 10679.556641). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11933.2 .. NELBO:
11933.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.53 .. NELBO: 5310.55
*****
*****
Validation loss decreased (10679.556641 --> 10621.094727). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11840.78 .. NELBO:
11840.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.35 .. NELBO: 5300.37
*****

```

```

*****
Validation loss decreased (10621.094727 --> 10600.729492). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.98 .. NELBO:
11788.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.09 .. NELBO: 5313.11
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.88 .. NELBO:
11780.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.26 .. NELBO: 5336.28
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.19 .. NELBO:
11793.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.58 .. NELBO: 5351.6
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.08 .. NELBO:
11796.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.2 .. NELBO: 5353.22
*****

```

```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.22 .. NELBO:
11784.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.08 .. NELBO: 5347.1
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 160
model: ETM(
  (t_drop): Dropout(p=0.05603364669436245, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=97, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=97, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=97, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 102.09 .. Rec_loss: 12264.37 .. NELBO:
12366.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.67 .. Rec_loss: 5444.49 .. NELBO: 5453.16
*****
*****
Validation loss decreased (inf --> 10906.314453). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.33 .. Rec_loss: 12249.77 .. NELBO:
12259.1
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5432.69 .. NELBO: 5433.18
*****
*****
Validation loss decreased (10906.314453 --> 10866.354492). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 12211.27 .. NELBO:
12211.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5410.1 .. NELBO: 5410.19
*****
*****
Validation loss decreased (10866.354492 --> 10820.372070). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12141.91 .. NELBO:
12142.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.64 .. NELBO: 5377.67
*****
*****
Validation loss decreased (10820.372070 --> 10755.337891). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12045.63 .. NELBO:
12045.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.07 .. NELBO: 5341.09
*****
*****
Validation loss decreased (10755.337891 --> 10682.187500). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11937.69 .. NELBO:
11937.74
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.2 .. NELBO: 5311.22
*****
*****
Validation loss decreased (10682.187500 --> 10622.444336). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11843.64 .. NELBO:
11843.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.43 .. NELBO: 5300.45
*****
*****
Validation loss decreased (10622.444336 --> 10600.899414). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11790.16 .. NELBO:
11790.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.96 .. NELBO: 5312.98
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11781.72 .. NELBO:
11781.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.26 .. NELBO: 5336.28
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.81 .. NELBO:
11793.86
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.65 .. NELBO: 5351.67
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.36 .. NELBO:
11796.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.28 .. NELBO: 5353.3
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.27 .. NELBO:
11784.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.16 .. NELBO: 5347.18
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05603364669436245, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=97, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=97, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=97, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 103.47 .. Rec_loss: 12264.72 .. NELBO:

```

```
12368.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.3 .. Rec_loss: 5444.44 .. NELBO: 5453.74
*****
*****
Validation loss decreased (inf --> 10907.480469). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 10.05 .. Rec_loss: 12249.95 .. NELBO:
12260.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5433.42 .. NELBO: 5433.95
*****
*****
Validation loss decreased (10907.480469 --> 10867.896484). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.75 .. Rec_loss: 12214.12 .. NELBO:
12214.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5412.25 .. NELBO: 5412.34
*****
*****
Validation loss decreased (10867.896484 --> 10824.670898). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12148.84 .. NELBO:
12148.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5381.35 .. NELBO: 5381.38
*****
*****
Validation loss decreased (10824.670898 --> 10762.758789). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12057.24 .. NELBO:
```

```
12057.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5345.58 .. NELBO: 5345.61
*****
*****
Validation loss decreased (10762.758789 --> 10691.206055). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11951.02 .. NELBO:
11951.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.57 .. NELBO: 5314.59
*****
*****
Validation loss decreased (10691.206055 --> 10629.196289). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11854.83 .. NELBO:
11854.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.55 .. NELBO: 5300.57
*****
*****
Validation loss decreased (10629.196289 --> 10601.138672). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11794.41 .. NELBO:
11794.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.65 .. NELBO: 5309.67
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11780.45 .. NELBO:
```



```
11780.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5332.33 .. NELBO: 5332.35
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11791.49 .. NELBO:
11791.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5349.73 .. NELBO: 5349.75
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.5 .. NELBO:
11796.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.46 .. NELBO: 5353.48
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11786.8 .. NELBO:
11786.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.21 .. NELBO: 5348.23
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
    (t_drop): Dropout(p=0.05603364669436245, inplace=False)
```

```

(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=97, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=97, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=97, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 101.25 .. Rec_loss: 12264.59 .. NELBO:
12365.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.76 .. Rec_loss: 5444.26 .. NELBO: 5452.02
*****
*****
Validation loss decreased (inf --> 10904.043945). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.5 .. Rec_loss: 12249.36 .. NELBO:
12257.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 5432.79 .. NELBO: 5433.35
*****
*****
Validation loss decreased (10904.043945 --> 10866.700195). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 12211.75 .. NELBO:
12212.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5411.0 .. NELBO: 5411.09
*****
*****
Validation loss decreased (10866.700195 --> 10822.180664). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12144.57 .. NELBO:
12144.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.69 .. NELBO: 5379.72
*****
*****
Validation loss decreased (10822.180664 --> 10759.436523). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12052.15 .. NELBO:
12052.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.94 .. NELBO: 5343.96
*****
*****
Validation loss decreased (10759.436523 --> 10687.935547). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11946.01 .. NELBO:
11946.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.56 .. NELBO: 5313.58
*****
*****
Validation loss decreased (10687.935547 --> 10627.161133). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11850.89 .. NELBO:
11850.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.55 .. NELBO: 5300.57
*****
*****
Validation loss decreased (10627.161133 --> 10601.143555). Saving model ...

```

```

*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.98 .. NELBO:
11793.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.4 .. NELBO: 5310.42
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11780.11 .. NELBO:
11780.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5332.99 .. NELBO: 5333.01
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11791.08 .. NELBO:
11791.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5349.84 .. NELBO: 5349.86
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.27 .. NELBO:
11796.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.15 .. NELBO: 5353.17
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.77 .. NELBO:
11785.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.79 .. NELBO: 5347.81
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 161
model: ETM(
  (t_drop): Dropout(p=0.06156872538790842, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=69, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=69, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=69, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 12263.5 .. NELBO:
12263.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 5442.53 .. NELBO: 5443.37
*****
*****
Validation loss decreased (inf --> 10886.736328). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.5 .. Rec_loss: 12241.23 .. NELBO:
12242.73
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5425.67 .. NELBO: 5425.71
*****
*****
Validation loss decreased (10886.736328 --> 10851.405273). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 12187.45 .. NELBO:
12187.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.26 .. Rec_loss: 5397.14 .. NELBO: 5397.4
*****
*****
Validation loss decreased (10851.405273 --> 10794.791016). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 12102.06 .. NELBO:
12102.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5360.52 .. NELBO: 5360.92
*****
*****
Validation loss decreased (10794.791016 --> 10721.845703). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 1.13 .. Rec_loss: 11994.09 .. NELBO:
11995.22
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.69 .. Rec_loss: 5324.67 .. NELBO: 5326.36
*****
*****
Validation loss decreased (10721.845703 --> 10652.719727). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 2.23 .. Rec_loss: 11888.29 .. NELBO:
11890.52
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5303.13 .. NELBO: 5303.52
*****
*****
Validation loss decreased (10652.719727 --> 10607.038086). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 11812.1 .. NELBO:
11813.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5303.49 .. NELBO: 5303.66
*****
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 11781.01 .. NELBO:
11781.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5322.53 .. NELBO: 5322.65
*****
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 11785.46 .. NELBO:
11785.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.79 .. Rec_loss: 5342.18 .. NELBO: 5342.97
*****
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 11793.0 .. NELBO:
11794.27
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 1.32 .. Rec_loss: 5349.05 .. NELBO: 5350.37
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 3.85 .. Rec_loss: 11785.08 .. NELBO:
11788.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.59 .. Rec_loss: 5345.39 .. NELBO: 5346.98
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06156872538790842, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=69, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=69, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=69, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 12263.54 .. NELBO:
12263.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 5442.78 .. NELBO: 5443.34
*****
*****
Validation loss decreased (inf --> 10886.684570). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 1.69 .. Rec_loss: 12242.21 .. NELBO:
12243.9
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5426.74 .. NELBO: 5426.77
*****
*****
Validation loss decreased (10886.684570 --> 10853.530273). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12191.62 .. NELBO:
12191.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 5399.45 .. NELBO: 5399.59
*****
*****
Validation loss decreased (10853.530273 --> 10799.180664). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 12108.95 .. NELBO:
12109.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5363.64 .. NELBO: 5363.99
*****
*****
Validation loss decreased (10799.180664 --> 10727.973633). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 1.27 .. Rec_loss: 12003.4 .. NELBO:
12004.67
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.5 .. Rec_loss: 5327.73 .. NELBO: 5329.23
*****
*****
Validation loss decreased (10727.973633 --> 10658.473633). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 2.3 .. Rec_loss: 11897.83 .. NELBO:
11900.13
*****

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```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5304.55 .. NELBO: 5304.92
*****
*****
Validation loss decreased (10658.473633 --> 10609.837891). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 11818.96 .. NELBO:
11819.49
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 5302.61 .. NELBO: 5302.74
*****
*****
Validation loss decreased (10609.837891 --> 10605.491211). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 11783.07 .. NELBO:
11783.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5320.09 .. NELBO: 5320.25
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 11784.55 .. NELBO:
11785.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 5340.54 .. NELBO: 5341.19
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.11 .. Rec_loss: 11793.02 .. NELBO:
11794.13
*****

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*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.86 .. Rec_loss: 5348.35 .. NELBO: 5350.21
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.51 .. Rec_loss: 11784.76 .. NELBO:
11788.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.96 .. Rec_loss: 5344.79 .. NELBO: 5347.75
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 6.73 .. Rec_loss: 11769.33 .. NELBO:
11776.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.54 .. Rec_loss: 5337.9 .. NELBO: 5341.44
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06156872538790842, inplace=False)
  (theta_act): SELU()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=69, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): SELU()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): SELU()
  )
  (mu_q_theta): Linear(in_features=800, out_features=69, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=69, bias=True)
)
*****
*****

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```

Epoch---->1 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 12263.38 .. NELBO:
12263.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 5442.45 .. NELBO: 5443.11
*****
*****
Validation loss decreased (inf --> 10886.232422). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 1.6 .. Rec_loss: 12240.52 .. NELBO:
12242.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5425.54 .. NELBO: 5425.59
*****
*****
Validation loss decreased (10886.232422 --> 10851.163086). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 12187.5 .. NELBO:
12187.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 5397.12 .. NELBO: 5397.3
*****
*****
Validation loss decreased (10851.163086 --> 10794.618164). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 12102.09 .. NELBO:
12102.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.23 .. Rec_loss: 5360.57 .. NELBO: 5360.8
*****
*****
Validation loss decreased (10794.618164 --> 10721.598633). Saving model ...
*****
*****

```

```
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 11994.56 .. NELBO:
11995.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.07 .. Rec_loss: 5324.82 .. NELBO: 5325.89
*****
*****
Validation loss decreased (10721.598633 --> 10651.770508). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 1.89 .. Rec_loss: 11887.43 .. NELBO:
11889.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.91 .. Rec_loss: 5303.18 .. NELBO: 5304.09
*****
*****
Validation loss decreased (10651.770508 --> 10608.193359). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 1.31 .. Rec_loss: 11811.84 .. NELBO:
11813.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 5304.0 .. NELBO: 5304.16
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 11782.22 .. NELBO:
11782.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5323.14 .. NELBO: 5323.26
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
```

```

Epoch---->9 .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 11785.97 .. NELBO:
11786.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 5342.84 .. NELBO: 5343.48
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.18 .. Rec_loss: 11793.25 .. NELBO:
11794.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.0 .. Rec_loss: 5348.99 .. NELBO: 5350.99
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 3.84 .. Rec_loss: 11784.48 .. NELBO:
11788.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.05 .. Rec_loss: 5345.41 .. NELBO: 5347.46
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 162
model: ETM(
  (t_drop): Dropout(p=0.06738856822622681, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=64, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=64, bias=True)

```

```

(logsigma_q_theta): Linear(in_features=800, out_features=64, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 77.37 .. Rec_loss: 12263.86 .. NELBO:
12341.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.92 .. Rec_loss: 5443.83 .. NELBO: 5450.75
*****
*****
Validation loss decreased (inf --> 10901.496094). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.48 .. Rec_loss: 12248.18 .. NELBO:
12255.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5431.92 .. NELBO: 5432.32
*****
*****
Validation loss decreased (10901.496094 --> 10864.646484). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12209.22 .. NELBO:
12209.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.24 .. NELBO: 5409.31
*****
*****
Validation loss decreased (10864.646484 --> 10818.611328). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12139.26 .. NELBO:
12139.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.93 .. NELBO: 5376.95
*****
*****

```

```

*****
Validation loss decreased (10818.611328 --> 10753.909180). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12043.57 .. NELBO:
12043.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5340.65 .. NELBO: 5340.66
*****
*****
Validation loss decreased (10753.909180 --> 10681.331055). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11935.71 .. NELBO:
11935.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.95 .. NELBO: 5310.96
*****
*****
Validation loss decreased (10681.331055 --> 10621.916992). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.4 .. NELBO:
11842.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.09 .. NELBO: 5300.1
*****
*****
Validation loss decreased (10621.916992 --> 10600.208984). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.51 .. NELBO:
11788.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.49 .. NELBO: 5312.5
*****

```



```

*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.45 .. NELBO:
11780.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.01 .. NELBO: 5336.02
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.23 .. NELBO:
11793.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.83 .. NELBO: 5351.85
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.24 .. NELBO:
11796.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.71 .. NELBO: 5353.72
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.51 .. NELBO:
11784.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.55 .. NELBO: 5347.56
*****

```

```

*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06738856822622681, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=64, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=64, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=64, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 84.76 .. Rec_loss: 12264.2 .. NELBO:
12348.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.78 .. Rec_loss: 5443.95 .. NELBO: 5451.73
*****
*****
Validation loss decreased (inf --> 10903.458008). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.46 .. Rec_loss: 12248.79 .. NELBO:
12257.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.47 .. NELBO: 5432.92
*****
*****
Validation loss decreased (10903.458008 --> 10865.835938). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12210.41 .. NELBO:
12211.06
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.97 .. NELBO: 5410.04
*****
*****
Validation loss decreased (10865.835938 --> 10820.083008). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12142.1 .. NELBO:
12142.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.65 .. NELBO: 5377.67
*****
*****
Validation loss decreased (10820.083008 --> 10755.347656). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12045.32 .. NELBO:
12045.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.17 .. NELBO: 5341.19
*****
*****
Validation loss decreased (10755.347656 --> 10682.379883). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11937.9 .. NELBO:
11937.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.07 .. NELBO: 5311.08
*****
*****
Validation loss decreased (10682.379883 --> 10622.175781). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.72 .. NELBO:
11842.75
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.81 .. NELBO: 5299.82
*****
*****
Validation loss decreased (10622.175781 --> 10599.659180). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.51 .. NELBO:
11788.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.09 .. NELBO: 5312.11
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.98 .. NELBO:
11780.01
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.86 .. NELBO: 5335.88
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.42 .. NELBO:
11793.45
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.02 .. NELBO: 5352.04
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11797.52 .. NELBO:
11797.55
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.99 .. NELBO: 5354.01
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.11 .. NELBO:
11785.14
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.76 .. NELBO: 5347.78
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06738856822622681, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=64, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=64, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=64, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.24 .. Rec_loss: 12264.05 .. NELBO:
12350.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.03 .. Rec_loss: 5443.95 .. NELBO: 5451.98
*****
*****
Validation loss decreased (inf --> 10903.960938). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.6 .. Rec_loss: 12247.97 .. NELBO:
12256.57

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5431.95 .. NELBO: 5432.44
*****
*****
Validation loss decreased (10903.960938 --> 10864.880859). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 12209.07 .. NELBO:
12209.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.37 .. NELBO: 5409.46
*****
*****
Validation loss decreased (10864.880859 --> 10818.933594). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12139.75 .. NELBO:
12139.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.17 .. NELBO: 5377.2
*****
*****
Validation loss decreased (10818.933594 --> 10754.403320). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12044.27 .. NELBO:
12044.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.0 .. NELBO: 5341.02
*****
*****
Validation loss decreased (10754.403320 --> 10682.036133). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.75 .. NELBO:
11936.79

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.33 .. NELBO: 5311.35
*****
*****
Validation loss decreased (10682.036133 --> 10622.703125). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11843.65 .. NELBO:
11843.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.39 .. NELBO: 5300.41
*****
*****
Validation loss decreased (10622.703125 --> 10600.820312). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.24 .. NELBO:
11789.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.54 .. NELBO: 5312.56
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.85 .. NELBO:
11780.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.78 .. NELBO: 5335.8
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.49 .. NELBO:
11793.53

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.52 .. NELBO: 5351.54
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.36 .. NELBO:
11796.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.5 .. NELBO: 5353.52
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.45 .. NELBO:
11784.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.47 .. NELBO: 5347.49
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 163
model: ETM(
  (t_drop): Dropout(p=0.056608229907071435, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)

```



```

*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 76.39 .. Rec_loss: 12264.18 .. NELBO:
12340.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.71 .. Rec_loss: 5443.93 .. NELBO: 5451.64
*****
*****
Validation loss decreased (inf --> 10903.276367). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.41 .. Rec_loss: 12248.22 .. NELBO:
12256.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5431.95 .. NELBO: 5432.37
*****
*****
Validation loss decreased (10903.276367 --> 10864.729492). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12209.02 .. NELBO:
12209.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.87 .. NELBO: 5408.94
*****
*****
Validation loss decreased (10864.729492 --> 10817.890625). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12137.82 .. NELBO:
12137.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.01 .. NELBO: 5376.04
*****
*****
Validation loss decreased (10817.890625 --> 10752.077148). Saving model ...

```

```

*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12040.57 .. NELBO:
12040.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.41 .. NELBO: 5339.43
*****
*****
Validation loss decreased (10752.077148 --> 10678.855469). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11931.68 .. NELBO:
11931.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.07 .. NELBO: 5310.09
*****
*****
Validation loss decreased (10678.855469 --> 10620.170898). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.72 .. NELBO:
11838.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.46 .. NELBO: 5300.48
*****
*****
Validation loss decreased (10620.170898 --> 10600.958008). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.38 .. NELBO:
11787.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.13 .. NELBO: 5314.15
*****
*****
EarlyStopping counter: 1 out of 5

```

```

*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.68 .. NELBO:
11781.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.62 .. NELBO: 5337.64
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.43 .. NELBO:
11794.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.37 .. NELBO: 5352.39
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.21 .. NELBO:
11796.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.3 .. NELBO: 5353.32
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.91 .. NELBO:
11783.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.81 .. NELBO: 5346.83
*****
*****
EarlyStopping counter: 5 out of 5

```

Early stopping

```
model: ETM(
  (t_drop): Dropout(p=0.056608229907071435, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 77.26 .. Rec_loss: 12264.22 .. NELBO:
12341.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.23 .. Rec_loss: 5443.7 .. NELBO: 5450.93
*****
*****
Validation loss decreased (inf --> 10901.853516). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.92 .. Rec_loss: 12247.0 .. NELBO:
12254.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5430.89 .. NELBO: 5431.33
*****
*****
Validation loss decreased (10901.853516 --> 10862.652344). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12205.3 .. NELBO:
12205.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.19 .. NELBO: 5407.26
```

```

*****
*****
Validation loss decreased (10862.652344 --> 10814.518555). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12132.81 .. NELBO:
12132.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.16 .. NELBO: 5374.18
*****
*****
Validation loss decreased (10814.518555 --> 10748.367188). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12035.1 .. NELBO:
12035.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.94 .. NELBO: 5337.96
*****
*****
Validation loss decreased (10748.367188 --> 10675.925781). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11927.63 .. NELBO:
11927.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.48 .. NELBO: 5309.5
*****
*****
Validation loss decreased (10675.925781 --> 10619.001953). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11836.64 .. NELBO:
11836.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.71 .. NELBO: 5300.73

```

```

*****
*****
Validation loss decreased (10619.001953 --> 10601.445312). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.92 .. NELBO:
11786.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.61 .. NELBO: 5314.63
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.93 .. NELBO:
11781.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.71 .. NELBO: 5337.73
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.05 .. NELBO:
11794.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.98 .. NELBO: 5352.0
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.28 .. NELBO:
11795.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.76 .. NELBO: 5352.78

```

```

*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.95 .. NELBO:
11782.99
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.37 .. NELBO: 5346.39
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.056608229907071435, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=72, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=72, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=72, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 90.9 .. Rec_loss: 12263.93 .. NELBO:
12354.83
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.04 .. Rec_loss: 5443.52 .. NELBO: 5451.56
*****
*****
Validation loss decreased (inf --> 10903.114258). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.68 .. Rec_loss: 12246.78 .. NELBO:
12255.46
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5430.91 .. NELBO: 5431.37
*****
*****
Validation loss decreased (10903.114258 --> 10862.735352). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12206.01 .. NELBO:
12206.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.36 .. NELBO: 5407.43
*****
*****
Validation loss decreased (10862.735352 --> 10814.860352). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12134.04 .. NELBO:
12134.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.31 .. NELBO: 5374.33
*****
*****
Validation loss decreased (10814.860352 --> 10748.672852). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12035.92 .. NELBO:
12035.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.92 .. NELBO: 5337.94
*****
*****
Validation loss decreased (10748.672852 --> 10675.879883). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11928.0 .. NELBO:
11928.03
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.17 .. NELBO: 5309.19
*****
*****
Validation loss decreased (10675.879883 --> 10618.369141). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11836.39 .. NELBO:
11836.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.23 .. NELBO: 5300.25
*****
*****
Validation loss decreased (10618.369141 --> 10600.498047). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.53 .. NELBO:
11786.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.32 .. NELBO: 5314.34
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.73 .. NELBO:
11781.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.79 .. NELBO: 5337.81
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.96 .. NELBO:
11794.0
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.25 .. NELBO: 5352.27
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.78 .. NELBO:
11795.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.04 .. NELBO: 5353.06
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.3 .. NELBO:
11783.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.6 .. NELBO: 5346.62
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 164
model: ETM(
  (t_drop): Dropout(p=0.16716637556501193, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=68, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=68, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=68, bias=True)
)
*****
*****

```

```

Epoch---->1 .. LR: 0.005 .. KL_theta: 69.37 .. Rec_loss: 12264.37 .. NELBO:
12333.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.88 .. Rec_loss: 5444.27 .. NELBO: 5451.15
*****
*****
Validation loss decreased (inf --> 10902.306641). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.61 .. Rec_loss: 12249.48 .. NELBO:
12257.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.32 .. Rec_loss: 5432.54 .. NELBO: 5432.86
*****
*****
Validation loss decreased (10902.306641 --> 10865.713867). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 12211.19 .. NELBO:
12211.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5410.54 .. NELBO: 5410.6
*****
*****
Validation loss decreased (10865.713867 --> 10821.188477). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12143.54 .. NELBO:
12143.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.93 .. NELBO: 5378.95
*****
*****
Validation loss decreased (10821.188477 --> 10757.910156). Saving model ...
*****
*****

```

```
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12049.84 .. NELBO:
12049.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.95 .. NELBO: 5342.97
*****
*****
Validation loss decreased (10757.910156 --> 10685.935547). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11943.39 .. NELBO:
11943.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.66 .. NELBO: 5312.68
*****
*****
Validation loss decreased (10685.935547 --> 10625.347656). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11848.56 .. NELBO:
11848.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.25 .. NELBO: 5300.27
*****
*****
Validation loss decreased (10625.347656 --> 10600.531250). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.67 .. NELBO:
11791.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.01 .. NELBO: 5311.03
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
```

```
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.58 .. NELB0:
11780.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.05 .. NELB0: 5334.07
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.22 .. NELB0:
11792.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.6 .. NELB0: 5350.62
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.06 .. NELB0:
11796.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.38 .. NELB0: 5353.4
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.95 .. NELB0:
11785.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.72 .. NELB0: 5347.74
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
```

```

(t_drop): Dropout(p=0.16716637556501193, inplace=False)
(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=68, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=68, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=68, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 66.4 .. Rec_loss: 12263.84 .. NELBO:
12330.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.67 .. Rec_loss: 5443.23 .. NELBO: 5449.9
*****
*****
Validation loss decreased (inf --> 10899.800781). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.47 .. Rec_loss: 12245.75 .. NELBO:
12253.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5429.82 .. NELBO: 5430.13
*****
*****
Validation loss decreased (10899.800781 --> 10860.272461). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 12202.21 .. NELBO:
12202.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5405.45 .. NELBO: 5405.5
*****
*****

```

```

Validation loss decreased (10860.272461 --> 10811.003906). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12127.88 .. NELBO:
12127.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5371.87 .. NELBO: 5371.89
*****
*****
Validation loss decreased (10811.003906 --> 10743.790039). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12029.78 .. NELBO:
12029.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.67 .. NELBO: 5335.69
*****
*****
Validation loss decreased (10743.790039 --> 10671.373047). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11920.92 .. NELBO:
11920.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.07 .. NELBO: 5308.09
*****
*****
Validation loss decreased (10671.373047 --> 10616.178711). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11831.9 .. NELBO:
11831.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.84 .. NELBO: 5300.86
*****
*****

```

```
Validation loss decreased (10616.178711 --> 10601.718750). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.26 .. NELBO:
11785.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.91 .. NELBO: 5315.93
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.21 .. NELBO:
11782.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.95 .. NELBO: 5338.97
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.21 .. NELBO:
11794.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.43 .. NELBO: 5352.45
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.54 .. NELBO:
11794.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.61 .. NELBO: 5352.63
*****
*****
```



```

EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.17 .. NELBO:
11782.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.03 .. NELBO: 5346.04
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.16716637556501193, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=68, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=68, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=68, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 67.63 .. Rec_loss: 12264.04 .. NELBO:
12331.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.97 .. Rec_loss: 5443.84 .. NELBO: 5450.81
*****
*****
Validation loss decreased (inf --> 10901.615234). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.71 .. Rec_loss: 12247.91 .. NELBO:
12255.62
*****
*****
*****
*****

```

```
VALIDATION .. LR: 0.005 .. KL_theta: 0.28 .. Rec_loss: 5431.72 .. NELBO: 5432.0
*****
*****
Validation loss decreased (10901.615234 --> 10863.995117). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 12208.55 .. NELBO:
12208.97
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5408.84 .. NELBO: 5408.89
*****
*****
Validation loss decreased (10863.995117 --> 10817.786133). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12138.09 .. NELBO:
12138.17
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.26 .. NELBO: 5376.28
*****
*****
Validation loss decreased (10817.786133 --> 10752.559570). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12041.44 .. NELBO:
12041.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.86 .. NELBO: 5339.88
*****
*****
Validation loss decreased (10752.559570 --> 10679.750000). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11933.73 .. NELBO:
11933.76
*****
*****
*****
*****
```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.45 .. NELBO: 5310.47
*****
*****
Validation loss decreased (10679.750000 --> 10620.936523). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11840.61 .. NELBO:
11840.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.38 .. NELBO: 5300.4
*****
*****
Validation loss decreased (10620.936523 --> 10600.790039). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.09 .. NELBO:
11788.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.5 .. NELBO: 5313.52
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.37 .. NELBO:
11781.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.99 .. NELBO: 5337.01
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.73 .. NELBO:
11793.76
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.14 .. NELBO: 5352.16
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.21 .. NELBO:
11796.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.48 .. NELBO: 5353.49
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.69 .. NELBO:
11783.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.17 .. NELBO: 5347.18
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 165
model: ETM(
  (t_drop): Dropout(p=0.05664471324438325, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=69, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=69, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=69, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 78.39 .. Rec_loss: 12264.38 .. NELBO:
12342.77

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.27 .. Rec_loss: 5444.14 .. NELBO: 5451.41
*****
*****
Validation loss decreased (inf --> 10902.830078). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.77 .. Rec_loss: 12248.58 .. NELBO:
12256.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5432.08 .. NELBO: 5432.47
*****
*****
Validation loss decreased (10902.830078 --> 10864.945312). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12209.4 .. NELBO:
12209.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.27 .. NELBO: 5409.34
*****
*****
Validation loss decreased (10864.945312 --> 10818.698242). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12139.26 .. NELBO:
12139.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.79 .. NELBO: 5376.81
*****
*****
Validation loss decreased (10818.698242 --> 10753.629883). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12043.21 .. NELBO:
12043.25

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.45 .. NELBO: 5340.47
*****
*****
Validation loss decreased (10753.629883 --> 10680.941406). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11934.97 .. NELBO:
11935.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.85 .. NELBO: 5310.87
*****
*****
Validation loss decreased (10680.941406 --> 10621.727539). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.17 .. NELBO:
11842.2
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.21 .. NELBO: 5300.23
*****
*****
Validation loss decreased (10621.727539 --> 10600.445312). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.49 .. NELBO:
11788.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.71 .. NELBO: 5312.73
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.06 .. NELBO:
11781.09

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.07 .. NELBO: 5336.09
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.91 .. NELBO:
11792.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.69 .. NELBO: 5351.71
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.18 .. NELBO:
11796.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.49 .. NELBO: 5353.51
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.22 .. NELBO:
11784.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.38 .. NELBO: 5347.4
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05664471324438325, inplace=False)
  (theta_act): Sigmoid()

```

```

(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=69, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=69, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=69, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 75.71 .. Rec_loss: 12264.72 .. NELBO:
12340.43
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.14 .. Rec_loss: 5444.54 .. NELBO: 5451.68
*****
*****
Validation loss decreased (inf --> 10903.350586). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.68 .. Rec_loss: 12250.33 .. NELBO:
12258.01
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5433.52 .. NELBO: 5433.89
*****
*****
Validation loss decreased (10903.350586 --> 10867.787109). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12214.33 .. NELBO:
12214.87
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5412.12 .. NELBO: 5412.19
*****
*****
Validation loss decreased (10867.787109 --> 10824.367188). Saving model ...
*****

```



```

*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12147.84 .. NELBO:
12147.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5380.83 .. NELBO: 5380.85
*****
*****
Validation loss decreased (10824.367188 --> 10761.716797). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12055.02 .. NELBO:
12055.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.72 .. NELBO: 5344.74
*****
*****
Validation loss decreased (10761.716797 --> 10689.476562). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11948.37 .. NELBO:
11948.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.73 .. NELBO: 5313.75
*****
*****
Validation loss decreased (10689.476562 --> 10627.485352). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11851.54 .. NELBO:
11851.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.29 .. NELBO: 5300.31
*****
*****
Validation loss decreased (10627.485352 --> 10600.616211). Saving model ...
*****

```

```

*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.48 .. NELBO:
11792.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.33 .. NELBO: 5310.35
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.78 .. NELBO:
11779.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.53 .. NELBO: 5333.55
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.64 .. NELBO:
11791.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.78 .. NELBO: 5350.8
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.29 .. NELBO:
11796.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.07 .. NELBO: 5354.09
*****
*****
EarlyStopping counter: 4 out of 5
*****

```

```

*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.41 .. NELBO:
11786.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.52 .. NELBO: 5348.54
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05664471324438325, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=69, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=69, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=69, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.23 .. Rec_loss: 12264.41 .. NELBO:
12350.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.78 .. Rec_loss: 5444.11 .. NELBO: 5451.89
*****
*****
Validation loss decreased (inf --> 10903.783203). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.48 .. Rec_loss: 12248.52 .. NELBO:
12257.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5431.97 .. NELBO: 5432.49
*****

```

```

*****
Validation loss decreased (10903.783203 --> 10864.984375). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.74 .. Rec_loss: 12209.14 .. NELBO:
12209.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.09 .. NELBO: 5409.18
*****
*****
Validation loss decreased (10864.984375 --> 10818.347656). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12139.4 .. NELBO:
12139.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.57 .. NELBO: 5376.6
*****
*****
Validation loss decreased (10818.347656 --> 10753.185547). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12043.15 .. NELBO:
12043.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.21 .. NELBO: 5340.23
*****
*****
Validation loss decreased (10753.185547 --> 10680.465820). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11935.68 .. NELBO:
11935.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.61 .. NELBO: 5310.63
*****

```

```

*****
Validation loss decreased (10680.465820 --> 10621.258789). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.21 .. NELBO:
11842.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.99 .. NELBO: 5300.01
*****
*****
Validation loss decreased (10621.258789 --> 10600.014648). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.83 .. NELBO:
11788.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.55 .. NELBO: 5312.57
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.08 .. NELBO:
11781.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.9 .. NELBO: 5335.92
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.33 .. NELBO:
11793.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.56 .. NELBO: 5351.58
*****

```

```

*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.32 .. NELBO:
11796.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.46 .. NELBO: 5353.47
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.55 .. NELBO:
11784.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.45 .. NELBO: 5347.46
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 166
model: ETM(
  (t_drop): Dropout(p=0.05702928378411852, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.57 .. Rec_loss: 12263.89 .. NELBO:
12352.46
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.83 .. Rec_loss: 5443.83 .. NELBO: 5451.66
*****
*****
Validation loss decreased (inf --> 10903.317383). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.38 .. Rec_loss: 12247.93 .. NELBO:
12256.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5431.9 .. NELBO: 5432.36
*****
*****
Validation loss decreased (10903.317383 --> 10864.724609). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12209.29 .. NELBO:
12209.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.52 .. NELBO: 5409.61
*****
*****
Validation loss decreased (10864.724609 --> 10819.208984). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12141.05 .. NELBO:
12141.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.69 .. NELBO: 5377.72
*****
*****
Validation loss decreased (10819.208984 --> 10755.429688). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12046.45 .. NELBO:
12046.5
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.73 .. NELBO: 5341.75
*****
*****
Validation loss decreased (10755.429688 --> 10683.498047). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11940.53 .. NELBO:
11940.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.74 .. NELBO: 5311.76
*****
*****
Validation loss decreased (10683.498047 --> 10623.520508). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11845.94 .. NELBO:
11845.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.85 .. NELBO: 5299.87
*****
*****
Validation loss decreased (10623.520508 --> 10599.736328). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.42 .. NELBO:
11790.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.06 .. NELBO: 5311.08
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.82 .. NELBO:
11779.86
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.28 .. NELBO: 5334.3
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.44 .. NELBO:
11792.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.71 .. NELBO: 5350.73
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.49 .. NELBO:
11796.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.35 .. NELBO: 5353.37
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.46 .. NELBO:
11785.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.63 .. NELBO: 5347.65
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05702928378411852, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)

```

```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.15 .. Rec_loss: 12264.36 .. NELBO:
12343.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.71 .. Rec_loss: 5444.19 .. NELBO: 5451.9
*****
*****
Validation loss decreased (inf --> 10903.801758). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.31 .. Rec_loss: 12248.87 .. NELBO:
12257.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5432.24 .. NELBO: 5432.63
*****
*****
Validation loss decreased (10903.801758 --> 10865.265625). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12209.57 .. NELBO:
12210.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5409.46 .. NELBO: 5409.52
*****
*****
Validation loss decreased (10865.265625 --> 10819.039062). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12139.49 .. NELBO:

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```
12139.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.03 .. NELBO: 5377.05
*****
*****
Validation loss decreased (10819.039062 --> 10754.097656). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12043.11 .. NELBO:
12043.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.7 .. NELBO: 5340.72
*****
*****
Validation loss decreased (10754.097656 --> 10681.430664). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11935.94 .. NELBO:
11935.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.1 .. NELBO: 5311.11
*****
*****
Validation loss decreased (10681.430664 --> 10622.232422). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11841.98 .. NELBO:
11842.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.54 .. NELBO: 5300.55
*****
*****
Validation loss decreased (10622.232422 --> 10601.113281). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.82 .. NELBO:
```

11788.85

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.19 .. NELBO: 5313.21

EarlyStopping counter: 1 out of 5

Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.37 .. NELBO:
11781.4

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.53 .. NELBO: 5336.55

EarlyStopping counter: 2 out of 5

Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.53 .. NELBO:
11793.56

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.79 .. NELBO: 5351.81

EarlyStopping counter: 3 out of 5

Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.55 .. NELBO:
11795.58

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.25 .. NELBO: 5353.27

EarlyStopping counter: 4 out of 5

Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.04 .. NELBO:

```

11784.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.04 .. NELBO: 5347.05
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05702928378411852, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 73.57 .. Rec_loss: 12264.0 .. NELBO:
12337.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.05 .. Rec_loss: 5444.08 .. NELBO: 5451.13
*****
*****
Validation loss decreased (inf --> 10902.256836). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.63 .. Rec_loss: 12248.8 .. NELBO:
12256.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5432.5 .. NELBO: 5432.89
*****
*****
Validation loss decreased (10902.256836 --> 10865.778320). Saving model ...

```

```

*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12210.67 .. NELBO:
12211.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.9 .. NELBO: 5409.97
*****
*****
Validation loss decreased (10865.778320 --> 10819.926758). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12141.01 .. NELBO:
12141.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.71 .. NELBO: 5377.73
*****
*****
Validation loss decreased (10819.926758 --> 10755.453125). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12045.73 .. NELBO:
12045.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.46 .. NELBO: 5341.48
*****
*****
Validation loss decreased (10755.453125 --> 10682.955078). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11939.09 .. NELBO:
11939.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.59 .. NELBO: 5311.6
*****
*****
Validation loss decreased (10682.955078 --> 10623.208008). Saving model ...

```

```

*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11844.48 .. NELBO:
11844.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.3 .. NELBO: 5300.31
*****
*****
Validation loss decreased (10623.208008 --> 10600.625000). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.01 .. NELBO:
11790.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.11 .. NELBO: 5312.13
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.05 .. NELBO:
11781.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.25 .. NELBO: 5335.27
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.12 .. NELBO:
11793.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.09 .. NELBO: 5351.11
*****
*****
EarlyStopping counter: 3 out of 5

```

```

*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.78 .. NELBO:
11795.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.28 .. NELBO: 5353.3
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.83 .. NELBO:
11784.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.44 .. NELBO: 5347.45
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 167
model: ETM(
  (t_drop): Dropout(p=0.039960557438673425, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=56, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=56, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=56, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 74.43 .. Rec_loss: 12264.33 .. NELBO:
12338.76
*****
*****
*****
*****

```



```

VALIDATION .. LR: 0.005 .. KL_theta: 7.32 .. Rec_loss: 5443.78 .. NELBO: 5451.1
*****
*****
Validation loss decreased (inf --> 10902.200195). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 7.93 .. Rec_loss: 12248.36 .. NELBO:
12256.29
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5432.67 .. NELBO: 5433.14
*****
*****
Validation loss decreased (10902.200195 --> 10866.266602). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 12211.77 .. NELBO:
12212.45
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5411.14 .. NELBO: 5411.23
*****
*****
Validation loss decreased (10866.266602 --> 10822.459961). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12145.8 .. NELBO:
12145.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.05 .. NELBO: 5380.08
*****
*****
Validation loss decreased (10822.459961 --> 10760.153320). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12053.22 .. NELBO:
12053.27
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.31 .. NELBO: 5344.33
*****
*****
Validation loss decreased (10760.153320 --> 10688.663086). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11947.89 .. NELBO:
11947.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.61 .. NELBO: 5313.63
*****
*****
Validation loss decreased (10688.663086 --> 10627.249023). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11852.17 .. NELBO:
11852.2
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.0 .. NELBO: 5300.02
*****
*****
Validation loss decreased (10627.249023 --> 10600.033203). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.09 .. NELBO:
11793.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.45 .. NELBO: 5309.47
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.19 .. NELBO:
11779.22
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5332.3 .. NELBO: 5332.32
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.72 .. NELBO:
11791.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5349.7 .. NELBO: 5349.72
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.92 .. NELBO:
11795.95
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.39 .. NELBO: 5353.41
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.81 .. NELBO:
11786.84
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.1 .. NELBO: 5348.11
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.039960557438673425, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=56, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)

```

```

    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=56, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=56, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 77.86 .. Rec_loss: 12263.9 .. NELBO:
12341.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.04 .. Rec_loss: 5443.86 .. NELBO: 5450.9
*****
*****
Validation loss decreased (inf --> 10901.787109). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.53 .. Rec_loss: 12247.96 .. NELBO:
12255.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5431.85 .. NELBO: 5432.27
*****
*****
Validation loss decreased (10901.787109 --> 10864.540039). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12208.25 .. NELBO:
12208.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.78 .. NELBO: 5408.86
*****
*****
Validation loss decreased (10864.540039 --> 10817.719727). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12137.21 .. NELBO:
12137.33
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.04 .. NELBO: 5376.06
*****
*****
Validation loss decreased (10817.719727 --> 10752.123047). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12039.83 .. NELBO:
12039.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.59 .. NELBO: 5339.61
*****
*****
Validation loss decreased (10752.123047 --> 10679.212891). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11933.06 .. NELBO:
11933.09
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.22 .. NELBO: 5310.24
*****
*****
Validation loss decreased (10679.212891 --> 10620.480469). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11839.4 .. NELBO:
11839.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5300.25 .. NELBO: 5300.3
*****
*****
Validation loss decreased (10620.480469 --> 10600.606445). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11787.17 .. NELBO:
11787.29
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5313.52 .. NELBO: 5313.6
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11780.97 .. NELBO:
11781.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5336.97 .. NELBO: 5337.05
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11793.82 .. NELBO:
11793.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5351.99 .. NELBO: 5352.06
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11796.08 .. NELBO:
11796.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5353.23 .. NELBO: 5353.28
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11784.1 .. NELBO:
11784.18
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.94 .. NELBO: 5346.97
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.039960557438673425, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=56, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=56, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=56, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 72.88 .. Rec_loss: 12264.26 .. NELBO:
12337.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.21 .. Rec_loss: 5443.76 .. NELBO: 5450.97
*****
*****
Validation loss decreased (inf --> 10901.934570). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.83 .. Rec_loss: 12247.84 .. NELBO:
12255.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5431.53 .. NELBO: 5431.95
*****
*****
Validation loss decreased (10901.934570 --> 10863.906250). Saving model ...
*****
*****

```

```

Epoch----->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12208.07 .. NELBO:
12208.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.68 .. NELBO: 5408.75
*****
*****
Validation loss decreased (10863.906250 --> 10817.499023). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12137.83 .. NELBO:
12137.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.25 .. NELBO: 5376.27
*****
*****
Validation loss decreased (10817.499023 --> 10752.528320). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12042.15 .. NELBO:
12042.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5339.98 .. NELBO: 5339.99
*****
*****
Validation loss decreased (10752.528320 --> 10679.975586). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11934.56 .. NELBO:
11934.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.46 .. NELBO: 5310.47
*****
*****
Validation loss decreased (10679.975586 --> 10620.938477). Saving model ...
*****
*****

```



```

Epoch----->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11841.69 .. NELBO:
11841.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.98 .. NELBO: 5299.99
*****
*****
Validation loss decreased (10620.938477 --> 10599.992188). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11788.36 .. NELBO:
11788.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.76 .. NELBO: 5312.77
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11780.66 .. NELBO:
11780.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.28 .. NELBO: 5336.29
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.77 .. NELBO:
11793.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.82 .. NELBO: 5351.83
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****

```

```

Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.29 .. NELBO:
11796.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.47 .. NELBO: 5353.48
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11784.6 .. NELBO:
11784.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.29 .. NELBO: 5347.3
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 168
model: ETM(
  (t_drop): Dropout(p=0.06126678513813031, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=53, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=53, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=53, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 66.99 .. Rec_loss: 12263.98 .. NELBO:
12330.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.64 .. Rec_loss: 5443.54 .. NELBO: 5451.18
*****
*****

```

```

*****
Validation loss decreased (inf --> 10902.359375). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.21 .. Rec_loss: 12246.92 .. NELBO:
12255.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5431.04 .. NELBO: 5431.42
*****
*****
Validation loss decreased (10902.359375 --> 10862.841797). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12206.12 .. NELBO:
12206.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5407.92 .. NELBO: 5408.0
*****
*****
Validation loss decreased (10862.841797 --> 10815.986328). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12136.0 .. NELBO:
12136.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.28 .. NELBO: 5375.3
*****
*****
Validation loss decreased (10815.986328 --> 10750.600586). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12039.02 .. NELBO:
12039.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.03 .. NELBO: 5339.05
*****

```

```

*****
Validation loss decreased (10750.600586 --> 10678.100586). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11930.92 .. NELBO:
11930.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.91 .. NELBO: 5309.92
*****
*****
Validation loss decreased (10678.100586 --> 10619.847656). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.99 .. NELBO:
11839.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.1 .. NELBO: 5300.12
*****
*****
Validation loss decreased (10619.847656 --> 10600.222656). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.94 .. NELBO:
11786.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.36 .. NELBO: 5313.38
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.7 .. NELBO:
11780.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.85 .. NELBO: 5336.87
*****

```

```

*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.58 .. NELBO:
11793.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.01 .. NELBO: 5352.03
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.49 .. NELBO:
11796.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.26 .. NELBO: 5353.28
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.35 .. NELBO:
11784.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.89 .. NELBO: 5346.91
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06126678513813031, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=53, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)

```

```

    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=53, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=53, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 77.38 .. Rec_loss: 12263.55 .. NELBO:
12340.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.85 .. Rec_loss: 5443.0 .. NELBO: 5449.85
*****
*****
Validation loss decreased (inf --> 10899.694336). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.48 .. Rec_loss: 12245.71 .. NELBO:
12253.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5430.58 .. NELBO: 5431.03
*****
*****
Validation loss decreased (10899.694336 --> 10862.067383). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12205.04 .. NELBO:
12205.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.22 .. NELBO: 5407.29
*****
*****
Validation loss decreased (10862.067383 --> 10814.578125). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12133.67 .. NELBO:
12133.77
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.53 .. NELBO: 5374.55
*****
*****
Validation loss decreased (10814.578125 --> 10749.092773). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12036.04 .. NELBO:
12036.07
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.48 .. NELBO: 5338.49
*****
*****
Validation loss decreased (10749.092773 --> 10676.986328). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11929.47 .. NELBO:
11929.49
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.7 .. NELBO: 5309.71
*****
*****
Validation loss decreased (10676.986328 --> 10619.414062). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11837.36 .. NELBO:
11837.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.2 .. NELBO: 5300.21
*****
*****
Validation loss decreased (10619.414062 --> 10600.424805). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11786.72 .. NELBO:
11786.74
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.59 .. NELBO: 5313.6
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11781.2 .. NELBO:
11781.22
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.0 .. NELBO: 5337.01
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11793.62 .. NELBO:
11793.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.02 .. NELBO: 5352.03
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11795.92 .. NELBO:
11795.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.21 .. NELBO: 5353.22
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11784.01 .. NELBO:
11784.03
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.88 .. NELBO: 5346.89
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06126678513813031, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=53, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=53, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=53, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 69.87 .. Rec_loss: 12263.81 .. NELBO:
12333.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.47 .. Rec_loss: 5443.51 .. NELBO: 5450.98
*****
*****
Validation loss decreased (inf --> 10901.957031). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.08 .. Rec_loss: 12246.98 .. NELBO:
12255.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5431.28 .. NELBO: 5431.65
*****
*****
Validation loss decreased (10901.957031 --> 10863.306641). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12207.31 .. NELBO:
12207.85

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.62 .. NELBO: 5408.69
*****
*****
Validation loss decreased (10863.306641 --> 10817.372070). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12138.16 .. NELBO:
12138.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.64 .. NELBO: 5376.66
*****
*****
Validation loss decreased (10817.372070 --> 10753.314453). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12042.84 .. NELBO:
12042.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5340.8 .. NELBO: 5340.81
*****
*****
Validation loss decreased (10753.314453 --> 10681.619141). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11936.87 .. NELBO:
11936.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.23 .. NELBO: 5311.24
*****
*****
Validation loss decreased (10681.619141 --> 10622.481445). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11844.03 .. NELBO:
11844.05

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.9 .. NELBO: 5299.91
*****
*****
Validation loss decreased (10622.481445 --> 10599.817383). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.55 .. NELBO:
11789.58
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.51 .. NELBO: 5311.52
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.2 .. NELBO:
11780.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.71 .. NELBO: 5334.73
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.22 .. NELBO:
11792.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.91 .. NELBO: 5350.93
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.81 .. NELBO:
11795.84

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.37 .. NELBO: 5353.38
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.66 .. NELBO:
11785.69
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.6 .. NELBO: 5347.61
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 169
model: ETM(
  (t_drop): Dropout(p=0.061793017006512053, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=61, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=61, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=61, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 75.57 .. Rec_loss: 12263.81 .. NELBO:
12339.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.05 .. Rec_loss: 5443.42 .. NELBO: 5451.47
*****
*****
Validation loss decreased (inf --> 10902.940430). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.59 .. Rec_loss: 12246.94 .. NELBO:
12255.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5431.17 .. NELBO: 5431.51
*****
*****
Validation loss decreased (10902.940430 --> 10863.027344). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 12206.48 .. NELBO:
12206.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.72 .. NELBO: 5407.78
*****
*****
Validation loss decreased (10863.027344 --> 10815.555664). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12135.14 .. NELBO:
12135.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.79 .. NELBO: 5374.81
*****
*****
Validation loss decreased (10815.555664 --> 10749.621094). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12037.64 .. NELBO:
12037.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.51 .. NELBO: 5338.52
*****
*****
Validation loss decreased (10749.621094 --> 10677.047852). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11930.03 .. NELBO:
11930.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.68 .. NELBO: 5309.69
*****
*****
Validation loss decreased (10677.047852 --> 10619.378906). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11838.86 .. NELBO:
11838.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.3 .. NELBO: 5300.31
*****
*****
Validation loss decreased (10619.378906 --> 10600.616211). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11787.59 .. NELBO:
11787.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.7 .. NELBO: 5313.71
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.41 .. NELBO:
11781.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.89 .. NELBO: 5336.9
*****
*****
EarlyStopping counter: 2 out of 5

```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.67 .. NELBO:
11793.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.72 .. NELBO: 5351.73
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.67 .. NELBO:
11795.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.97 .. NELBO: 5352.98
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.73 .. NELBO:
11783.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.74 .. NELBO: 5346.75
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.061793017006512053, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=61, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
)

```

```

(mu_q_theta): Linear(in_features=800, out_features=61, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=61, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 78.49 .. Rec_loss: 12263.8 .. NELBO:
12342.29
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.22 .. Rec_loss: 5443.53 .. NELBO: 5450.75
*****
*****
Validation loss decreased (inf --> 10901.509766). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.89 .. Rec_loss: 12246.61 .. NELBO:
12254.5
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5430.88 .. NELBO: 5431.34
*****
*****
Validation loss decreased (10901.509766 --> 10862.681641). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12205.34 .. NELBO:
12206.01
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5407.31 .. NELBO: 5407.39
*****
*****
Validation loss decreased (10862.681641 --> 10814.789062). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12133.32 .. NELBO:
12133.45
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5374.38 .. NELBO: 5374.41

```



```

*****
*****
Validation loss decreased (10814.789062 --> 10748.816406). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12035.99 .. NELBO:
12036.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.16 .. NELBO: 5338.18
*****
*****
Validation loss decreased (10748.816406 --> 10676.351562). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11928.31 .. NELBO:
11928.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.42 .. NELBO: 5309.44
*****
*****
Validation loss decreased (10676.351562 --> 10618.876953). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11836.99 .. NELBO:
11837.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.27 .. NELBO: 5300.29
*****
*****
Validation loss decreased (10618.876953 --> 10600.561523). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.73 .. NELBO:
11786.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.02 .. NELBO: 5314.04

```

```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.4 .. NELBO:
11781.43
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.42 .. NELBO: 5337.44
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.02 .. NELBO:
11794.05
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.14 .. NELBO: 5352.16
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.69 .. NELBO:
11795.72
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.21 .. NELBO: 5353.23
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.35 .. NELBO:
11783.38
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.91 .. NELBO: 5346.93

```

```

*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.061793017006512053, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=61, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=61, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=61, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 74.36 .. Rec_loss: 12264.51 .. NELBO:
12338.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.89 .. Rec_loss: 5444.19 .. NELBO: 5451.08
*****
*****
Validation loss decreased (inf --> 10902.150391). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.38 .. Rec_loss: 12249.42 .. NELBO:
12256.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5432.79 .. NELBO: 5433.13
*****
*****
Validation loss decreased (10902.150391 --> 10866.259766). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12211.65 .. NELBO:
12212.15
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5410.99 .. NELBO: 5411.05
*****
*****
Validation loss decreased (10866.259766 --> 10822.101562). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12144.72 .. NELBO:
12144.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.4 .. NELBO: 5379.42
*****
*****
Validation loss decreased (10822.101562 --> 10758.851562). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12051.29 .. NELBO:
12051.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5343.28 .. NELBO: 5343.29
*****
*****
Validation loss decreased (10758.851562 --> 10686.582031). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11944.84 .. NELBO:
11944.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.67 .. NELBO: 5312.68
*****
*****
Validation loss decreased (10686.582031 --> 10625.356445). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11848.75 .. NELBO:
11848.78
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.89 .. NELBO: 5299.9
*****
*****
Validation loss decreased (10625.356445 --> 10599.798828). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.62 .. NELBO:
11790.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.43 .. NELBO: 5310.44
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.83 .. NELBO:
11779.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5333.64 .. NELBO: 5333.65
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.68 .. NELBO:
11791.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5350.62 .. NELBO: 5350.63
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.7 .. NELBO:
11796.73
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.7 .. NELBO: 5353.71
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.62 .. NELBO:
11785.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.11 .. NELBO: 5348.12
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 170
model: ETM(
  (t_drop): Dropout(p=0.07705080889773858, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 76.53 .. Rec_loss: 12264.59 .. NELBO:
12341.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.43 .. Rec_loss: 5444.27 .. NELBO: 5451.7
*****
*****
Validation loss decreased (inf --> 10903.394531). Saving model ...
*****
*****

```

```

Epoch----->2 .. LR: 0.005 .. KL_theta: 7.98 .. Rec_loss: 12249.4 .. NELBO:
12257.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5432.82 .. NELBO: 5433.19
*****
*****
Validation loss decreased (10903.394531 --> 10866.368164). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12211.87 .. NELBO:
12212.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.6 .. NELBO: 5410.67
*****
*****
Validation loss decreased (10866.368164 --> 10821.335938). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12143.46 .. NELBO:
12143.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.45 .. NELBO: 5378.47
*****
*****
Validation loss decreased (10821.335938 --> 10756.956055). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12048.08 .. NELBO:
12048.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.97 .. NELBO: 5341.99
*****
*****
Validation loss decreased (10756.956055 --> 10683.979492). Saving model ...
*****
*****

```

```

Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11940.48 .. NELBO:
11940.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.69 .. NELBO: 5311.71
*****
*****
Validation loss decreased (10683.979492 --> 10623.417969). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11844.56 .. NELBO:
11844.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.09 .. NELBO: 5300.11
*****
*****
Validation loss decreased (10623.417969 --> 10600.206055). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.26 .. NELBO:
11789.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.98 .. NELBO: 5312.0
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.82 .. NELBO:
11779.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.5 .. NELBO: 5335.52
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

```



```

Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.72 .. NELBO:
11792.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.63 .. NELBO: 5351.65
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.24 .. NELBO:
11796.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.84 .. NELBO: 5353.86
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.96 .. NELBO:
11784.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.88 .. NELBO: 5347.9
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.07705080889773858, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=63, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=63, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)

```

```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 71.17 .. Rec_loss: 12263.63 .. NELBO:
12334.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.58 .. Rec_loss: 5443.11 .. NELBO: 5449.69
*****
*****
Validation loss decreased (inf --> 10899.383789). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.11 .. Rec_loss: 12245.27 .. NELBO:
12252.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5429.57 .. NELBO: 5429.95
*****
*****
Validation loss decreased (10899.383789 --> 10859.913086). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12201.68 .. NELBO:
12202.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5405.21 .. NELBO: 5405.28
*****
*****
Validation loss decreased (10859.913086 --> 10810.571289). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12127.78 .. NELBO:
12127.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5371.68 .. NELBO: 5371.71
*****
*****

```

```

Validation loss decreased (10810.571289 --> 10743.416016). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12028.65 .. NELBO:
12028.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.5 .. NELBO: 5335.52
*****
*****
Validation loss decreased (10743.416016 --> 10671.035156). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11921.21 .. NELBO:
11921.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5307.83 .. NELBO: 5307.85
*****
*****
Validation loss decreased (10671.035156 --> 10615.695312). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11831.06 .. NELBO:
11831.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.52 .. NELBO: 5300.54
*****
*****
Validation loss decreased (10615.695312 --> 10601.075195). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.18 .. NELBO:
11785.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.67 .. NELBO: 5315.69
*****
*****

```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.59 .. NELBO:
11782.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.82 .. NELBO: 5338.84
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.43 .. NELBO:
11794.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.28 .. NELBO: 5352.3
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.92 .. NELBO:
11794.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.43 .. NELBO: 5352.45
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.3 .. NELBO:
11782.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.89 .. NELBO: 5345.91
*****
*****

```

EarlyStopping counter: 5 out of 5

Early stopping

model: ETM(

(t_drop): Dropout(p=0.07705080889773858, inplace=False)

(theta_act): Sigmoid()

(rho): Linear(in_features=300, out_features=13198, bias=False)

(alphas): Linear(in_features=300, out_features=63, bias=False)

(q_theta): Sequential(

(0): Linear(in_features=13198, out_features=800, bias=True)

(1): Sigmoid()

(2): Linear(in_features=800, out_features=800, bias=True)

(3): Sigmoid()

)

(mu_q_theta): Linear(in_features=800, out_features=63, bias=True)

(logsigma_q_theta): Linear(in_features=800, out_features=63, bias=True)

)

Epoch---->1 .. LR: 0.005 .. KL_theta: 82.29 .. Rec_loss: 12264.17 .. NELBO:
12346.46

VALIDATION .. LR: 0.005 .. KL_theta: 7.63 .. Rec_loss: 5443.56 .. NELBO: 5451.19

Validation loss decreased (inf --> 10902.387695). Saving model ...

Epoch---->2 .. LR: 0.005 .. KL_theta: 8.27 .. Rec_loss: 12246.77 .. NELBO:
12255.04

VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5430.69 .. NELBO: 5431.18

Validation loss decreased (10902.387695 --> 10862.347656). Saving model ...

Epoch---->3 .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 12205.03 .. NELBO:
12205.76


```

VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5407.08 .. NELBO: 5407.19
*****
*****
Validation loss decreased (10862.347656 --> 10814.393555). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 12133.16 .. NELBO:
12133.34
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5374.12 .. NELBO: 5374.16
*****
*****
Validation loss decreased (10814.393555 --> 10748.338867). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12035.92 .. NELBO:
12036.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5337.93 .. NELBO: 5337.96
*****
*****
Validation loss decreased (10748.338867 --> 10675.919922). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11928.84 .. NELBO:
11928.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5309.33 .. NELBO: 5309.36
*****
*****
Validation loss decreased (10675.919922 --> 10618.729492). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11837.02 .. NELBO:
11837.09
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5300.34 .. NELBO: 5300.38
*****
*****
Validation loss decreased (10618.729492 --> 10600.756836). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11787.0 .. NELBO:
11787.09
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5314.09 .. NELBO: 5314.14
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11781.57 .. NELBO:
11781.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5337.24 .. NELBO: 5337.29
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11794.17 .. NELBO:
11794.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5351.68 .. NELBO: 5351.72
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11795.34 .. NELBO:
11795.42
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5352.64 .. NELBO: 5352.67
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11782.75 .. NELBO:
11782.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.44 .. NELBO: 5346.46
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 171
model: ETM(
  (t_drop): Dropout(p=0.036727146283123416, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 92.9 .. Rec_loss: 12264.27 .. NELBO:
12357.17
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.94 .. Rec_loss: 5443.96 .. NELBO: 5451.9
*****
*****
Validation loss decreased (inf --> 10903.799805). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.54 .. Rec_loss: 12247.88 .. NELBO:
12256.42

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5431.56 .. NELBO: 5432.01
*****
*****
Validation loss decreased (10903.799805 --> 10864.014648). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12207.83 .. NELBO:
12208.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.4 .. NELBO: 5408.48
*****
*****
Validation loss decreased (10864.014648 --> 10816.946289). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12136.98 .. NELBO:
12137.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.63 .. NELBO: 5375.66
*****
*****
Validation loss decreased (10816.946289 --> 10751.308594). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12040.11 .. NELBO:
12040.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.26 .. NELBO: 5339.28
*****
*****
Validation loss decreased (10751.308594 --> 10678.559570). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11932.25 .. NELBO:
11932.29

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.09 .. NELBO: 5310.11
*****
*****
Validation loss decreased (10678.559570 --> 10620.224609). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11839.92 .. NELBO:
11839.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.29 .. NELBO: 5300.31
*****
*****
Validation loss decreased (10620.224609 --> 10600.614258). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.47 .. NELBO:
11788.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.48 .. NELBO: 5313.5
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.68 .. NELBO:
11781.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.77 .. NELBO: 5336.79
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.55 .. NELBO:
11793.59

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.74 .. NELBO: 5351.76
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.88 .. NELBO:
11795.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.04 .. NELBO: 5353.06
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.74 .. NELBO:
11783.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.86 .. NELBO: 5346.88
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.036727146283123416, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
*****

```

```

*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 93.11 .. Rec_loss: 12264.08 .. NELBO:
12357.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.9 .. Rec_loss: 5444.13 .. NELBO: 5452.03
*****
*****
Validation loss decreased (inf --> 10904.065430). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.4 .. Rec_loss: 12248.76 .. NELBO:
12257.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5432.03 .. NELBO: 5432.5
*****
*****
Validation loss decreased (10904.065430 --> 10864.997070). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 12208.71 .. NELBO:
12209.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5408.99 .. NELBO: 5409.08
*****
*****
Validation loss decreased (10864.997070 --> 10818.162109). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12137.78 .. NELBO:
12137.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.31 .. NELBO: 5376.34
*****
*****
Validation loss decreased (10818.162109 --> 10752.678711). Saving model ...
*****

```

```

*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12041.37 .. NELBO:
12041.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.89 .. NELBO: 5339.91
*****
*****
Validation loss decreased (10752.678711 --> 10679.815430). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11933.13 .. NELBO:
11933.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.47 .. NELBO: 5310.49
*****
*****
Validation loss decreased (10679.815430 --> 10620.968750). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11840.17 .. NELBO:
11840.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.33 .. NELBO: 5300.35
*****
*****
Validation loss decreased (10620.968750 --> 10600.696289). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.77 .. NELBO:
11787.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.35 .. NELBO: 5313.37
*****
*****
EarlyStopping counter: 1 out of 5
*****

```

```

*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.81 .. NELBO:
11780.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.82 .. NELBO: 5336.84
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.63 .. NELBO:
11793.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.14 .. NELBO: 5352.16
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.16 .. NELBO:
11796.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.63 .. NELBO: 5353.65
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.44 .. NELBO:
11784.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.34 .. NELBO: 5347.36
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping

```

```

model: ETM(
  (t_drop): Dropout(p=0.036727146283123416, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=82, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=82, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=82, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 82.03 .. Rec_loss: 12264.35 .. NELBO:
12346.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.68 .. Rec_loss: 5444.47 .. NELBO: 5452.15
*****
*****
Validation loss decreased (inf --> 10904.285156). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.16 .. Rec_loss: 12249.8 .. NELBO:
12257.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5432.57 .. NELBO: 5432.95
*****
*****
Validation loss decreased (10904.285156 --> 10865.901367). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12210.35 .. NELBO:
12210.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.37 .. NELBO: 5409.44
*****
*****

```

```

*****
Validation loss decreased (10865.901367 --> 10818.880859). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12138.51 .. NELBO:
12138.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.31 .. NELBO: 5376.34
*****
*****
Validation loss decreased (10818.880859 --> 10752.674805). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12040.96 .. NELBO:
12041.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.56 .. NELBO: 5339.58
*****
*****
Validation loss decreased (10752.674805 --> 10679.161133). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11931.76 .. NELBO:
11931.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.2 .. NELBO: 5310.22
*****
*****
Validation loss decreased (10679.161133 --> 10620.432617). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11838.77 .. NELBO:
11838.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.66 .. NELBO: 5300.68
*****

```



```

*****
Validation loss decreased (10620.432617 --> 10601.370117). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.14 .. NELBO:
11787.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.39 .. NELBO: 5314.41
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.67 .. NELBO:
11781.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.85 .. NELBO: 5337.87
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.21 .. NELBO:
11794.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.58 .. NELBO: 5352.6
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.39 .. NELBO:
11796.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.52 .. NELBO: 5353.54
*****

```

```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.7 .. NELBO:
11783.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.04 .. NELBO: 5347.06
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 172
model: ETM(
  (t_drop): Dropout(p=0.05528036167476958, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 97.34 .. Rec_loss: 12264.01 .. NELBO:
12361.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.55 .. Rec_loss: 5443.97 .. NELBO: 5452.52
*****
*****
Validation loss decreased (inf --> 10905.053711). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.36 .. Rec_loss: 12248.47 .. NELBO:
12257.83
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5431.93 .. NELBO: 5432.44
*****
*****
Validation loss decreased (10905.053711 --> 10864.872070). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 12208.62 .. NELBO:
12209.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.67 .. NELBO: 5408.75
*****
*****
Validation loss decreased (10864.872070 --> 10817.500977). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12137.42 .. NELBO:
12137.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.68 .. NELBO: 5375.71
*****
*****
Validation loss decreased (10817.500977 --> 10751.417969). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12039.65 .. NELBO:
12039.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.05 .. NELBO: 5339.07
*****
*****
Validation loss decreased (10751.417969 --> 10678.140625). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11930.95 .. NELBO:
11931.0
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.79 .. NELBO: 5309.81
*****
*****
Validation loss decreased (10678.140625 --> 10619.614258). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11838.36 .. NELBO:
11838.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.23 .. NELBO: 5300.25
*****
*****
Validation loss decreased (10619.614258 --> 10600.497070). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.21 .. NELBO:
11787.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.87 .. NELBO: 5313.89
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.29 .. NELBO:
11781.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.42 .. NELBO: 5337.44
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.21 .. NELBO:
11794.25
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.35 .. NELBO: 5352.37
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.76 .. NELBO:
11795.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.49 .. NELBO: 5353.51
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.68 .. NELBO:
11783.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.13 .. NELBO: 5347.15
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05528036167476958, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.82 .. Rec_loss: 12264.45 .. NELBO:

```

```

12351.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.74 .. Rec_loss: 5444.63 .. NELBO: 5452.37
*****
*****
Validation loss decreased (inf --> 10904.737305). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.35 .. Rec_loss: 12250.6 .. NELBO:
12258.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5433.55 .. NELBO: 5433.95
*****
*****
Validation loss decreased (10904.737305 --> 10867.911133). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12213.99 .. NELBO:
12214.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.63 .. NELBO: 5411.7
*****
*****
Validation loss decreased (10867.911133 --> 10823.387695). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12146.5 .. NELBO:
12146.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.62 .. NELBO: 5379.65
*****
*****
Validation loss decreased (10823.387695 --> 10759.286133). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12051.36 .. NELBO:

```

```

12051.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.0 .. NELBO: 5343.02
*****
*****
Validation loss decreased (10759.286133 --> 10686.033203). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11943.03 .. NELBO:
11943.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.25 .. NELBO: 5312.27
*****
*****
Validation loss decreased (10686.033203 --> 10624.529297). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11846.83 .. NELBO:
11846.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.01 .. NELBO: 5300.03
*****
*****
Validation loss decreased (10624.529297 --> 10600.065430). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.96 .. NELBO:
11790.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.52 .. NELBO: 5311.54
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.17 .. NELBO:

```

```
11780.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.15 .. NELBO: 5335.17
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.99 .. NELBO:
11793.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.69 .. NELBO: 5351.71
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11797.02 .. NELBO:
11797.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.14 .. NELBO: 5354.16
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.73 .. NELBO:
11785.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.18 .. NELBO: 5348.2
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
    (t_drop): Dropout(p=0.05528036167476958, inplace=False)
```



```

(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=92, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 94.09 .. Rec_loss: 12264.21 .. NELBO:
12358.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.19 .. Rec_loss: 5444.25 .. NELBO: 5452.44
*****
*****
Validation loss decreased (inf --> 10904.883789). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 9.03 .. Rec_loss: 12249.32 .. NELBO:
12258.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5432.58 .. NELBO: 5433.07
*****
*****
Validation loss decreased (10904.883789 --> 10866.149414). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 12210.85 .. NELBO:
12211.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.27 .. NELBO: 5410.34
*****
*****
Validation loss decreased (10866.149414 --> 10820.696289). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12142.15 .. NELBO:
12142.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.22 .. NELBO: 5378.25
*****
*****
Validation loss decreased (10820.696289 --> 10756.489258). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12046.97 .. NELBO:
12047.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.9 .. NELBO: 5341.92
*****
*****
Validation loss decreased (10756.489258 --> 10683.844727). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11939.23 .. NELBO:
11939.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.8 .. NELBO: 5311.82
*****
*****
Validation loss decreased (10683.844727 --> 10623.639648). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11844.9 .. NELBO:
11844.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.3 .. NELBO: 5300.32
*****
*****
Validation loss decreased (10623.639648 --> 10600.645508). Saving model ...

```

```

*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.68 .. NELBO:
11789.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.14 .. NELBO: 5312.16
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.55 .. NELBO:
11780.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.5 .. NELBO: 5335.52
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.92 .. NELBO:
11792.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.56 .. NELBO: 5351.58
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.04 .. NELBO:
11796.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.74 .. NELBO: 5353.76
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.2 .. NELBO:
11785.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.73 .. NELBO: 5347.75
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 173
model: ETM(
  (t_drop): Dropout(p=0.037581333062839214, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=68, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=68, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=68, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 82.74 .. Rec_loss: 12264.25 .. NELBO:
12346.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.83 .. Rec_loss: 5444.13 .. NELBO: 5451.96
*****
*****
Validation loss decreased (inf --> 10903.926758). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.46 .. Rec_loss: 12249.19 .. NELBO:
12257.65
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5432.59 .. NELBO: 5433.01
*****
*****
Validation loss decreased (10903.926758 --> 10866.027344). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12211.13 .. NELBO:
12211.73
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.2 .. NELBO: 5410.27
*****
*****
Validation loss decreased (10866.027344 --> 10820.542969). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12142.66 .. NELBO:
12142.77
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.1 .. NELBO: 5378.12
*****
*****
Validation loss decreased (10820.542969 --> 10756.259766). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12047.42 .. NELBO:
12047.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.82 .. NELBO: 5341.84
*****
*****
Validation loss decreased (10756.259766 --> 10683.682617). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11940.13 .. NELBO:
11940.17
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.72 .. NELBO: 5311.74
*****
*****
Validation loss decreased (10683.682617 --> 10623.470703). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11846.11 .. NELBO:
11846.15
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.04 .. NELBO: 5300.06
*****
*****
Validation loss decreased (10623.470703 --> 10600.113281). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.47 .. NELBO:
11790.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.51 .. NELBO: 5311.53
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.05 .. NELBO:
11781.09
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.58 .. NELBO: 5334.6
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.36 .. NELBO:
11793.4
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.64 .. NELBO: 5350.66
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.68 .. NELBO:
11795.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.06 .. NELBO: 5353.08
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.04 .. NELBO:
11785.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.35 .. NELBO: 5347.37
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.037581333062839214, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=68, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=68, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=68, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 77.37 .. Rec_loss: 12263.73 .. NELBO:
12341.1
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.03 .. Rec_loss: 5443.64 .. NELBO: 5450.67
*****
*****
Validation loss decreased (inf --> 10901.353516). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.57 .. Rec_loss: 12246.88 .. NELBO:
12254.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5431.13 .. NELBO: 5431.5
*****
*****
Validation loss decreased (10901.353516 --> 10862.995117). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12205.73 .. NELBO:
12206.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.62 .. NELBO: 5407.68
*****
*****
Validation loss decreased (10862.995117 --> 10815.363281). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12134.07 .. NELBO:
12134.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.68 .. NELBO: 5374.7
*****
*****
Validation loss decreased (10815.363281 --> 10749.401367). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12036.14 .. NELBO:
12036.18
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.42 .. NELBO: 5338.44
*****
*****
Validation loss decreased (10749.401367 --> 10676.883789). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11927.92 .. NELBO:
11927.95
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.74 .. NELBO: 5309.76
*****
*****
Validation loss decreased (10676.883789 --> 10619.507812). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11836.14 .. NELBO:
11836.17
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.71 .. NELBO: 5300.73
*****
*****
Validation loss decreased (10619.507812 --> 10601.448242). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.62 .. NELBO:
11786.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.52 .. NELBO: 5314.54
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.01 .. NELBO:
11781.04
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.86 .. NELBO: 5337.88
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.22 .. NELBO:
11793.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.47 .. NELBO: 5352.49
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.77 .. NELBO:
11795.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.35 .. NELBO: 5353.37
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.67 .. NELBO:
11783.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.86 .. NELBO: 5346.88
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.037581333062839214, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)

```

```

(alphas): Linear(in_features=300, out_features=68, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=68, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=68, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 74.0 .. Rec_loss: 12264.58 .. NELBO:
12338.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.02 .. Rec_loss: 5444.11 .. NELBO: 5451.13
*****
*****
Validation loss decreased (inf --> 10902.266602). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.64 .. Rec_loss: 12249.03 .. NELBO:
12256.67
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5432.43 .. NELBO: 5432.84
*****
*****
Validation loss decreased (10902.266602 --> 10865.688477). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12210.86 .. NELBO:
12211.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.15 .. NELBO: 5410.22
*****
*****
Validation loss decreased (10865.688477 --> 10820.428711). Saving model ...
*****
*****

```

```

Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12142.33 .. NELBO:
12142.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.13 .. NELBO: 5378.15
*****
*****
Validation loss decreased (10820.428711 --> 10756.312500). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12047.49 .. NELBO:
12047.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.89 .. NELBO: 5341.91
*****
*****
Validation loss decreased (10756.312500 --> 10683.822266). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11940.06 .. NELBO:
11940.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.79 .. NELBO: 5311.81
*****
*****
Validation loss decreased (10683.822266 --> 10623.607422). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.75 .. NELBO:
11845.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.99 .. NELBO: 5300.0
*****
*****
Validation loss decreased (10623.607422 --> 10600.001953). Saving model ...
*****
*****

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```

Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.07 .. NELBO:
11790.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.34 .. NELBO: 5311.36
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.2 .. NELBO:
11780.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.55 .. NELBO: 5334.57
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.82 .. NELBO:
11792.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.9 .. NELBO: 5350.92
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.24 .. NELBO:
11796.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.5 .. NELBO: 5353.52
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****

```

```

Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.01 .. NELBO:
11785.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.84 .. NELBO: 5347.85
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 174
model: ETM(
  (t_drop): Dropout(p=0.06168525071395514, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.98 .. Rec_loss: 12264.09 .. NELBO:
12344.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.96 .. Rec_loss: 5443.55 .. NELBO: 5451.51
*****
*****
Validation loss decreased (inf --> 10903.015625). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.63 .. Rec_loss: 12247.19 .. NELBO:
12255.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5431.34 .. NELBO: 5431.79
*****
*****

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```

*****
Validation loss decreased (10903.015625 --> 10863.572266). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12206.72 .. NELBO:
12207.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.06 .. NELBO: 5408.13
*****
*****
Validation loss decreased (10863.572266 --> 10816.268555). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12136.2 .. NELBO:
12136.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.45 .. NELBO: 5375.47
*****
*****
Validation loss decreased (10816.268555 --> 10750.937500). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12039.89 .. NELBO:
12039.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.37 .. NELBO: 5339.39
*****
*****
Validation loss decreased (10750.937500 --> 10678.769531). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11933.63 .. NELBO:
11933.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.3 .. NELBO: 5310.31
*****

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```

*****
Validation loss decreased (10678.769531 --> 10620.626953). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11840.95 .. NELBO:
11840.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.14 .. NELBO: 5300.15
*****
*****
Validation loss decreased (10620.626953 --> 10600.305664). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.01 .. NELBO:
11789.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.7 .. NELBO: 5312.71
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.38 .. NELBO:
11781.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.75 .. NELBO: 5335.76
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.23 .. NELBO:
11793.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.1 .. NELBO: 5351.11
*****

```



```

*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.76 .. NELBO:
11795.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.93 .. NELBO: 5352.94
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.4 .. NELBO:
11784.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.99 .. NELBO: 5347.0
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06168525071395514, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 68.45 .. Rec_loss: 12263.82 .. NELBO:
12332.27
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.46 .. Rec_loss: 5443.45 .. NELBO: 5449.91
*****
*****
Validation loss decreased (inf --> 10899.816406). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.0 .. Rec_loss: 12246.54 .. NELBO:
12253.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5430.71 .. NELBO: 5431.12
*****
*****
Validation loss decreased (10899.816406 --> 10862.251953). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12205.2 .. NELBO:
12205.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5407.09 .. NELBO: 5407.18
*****
*****
Validation loss decreased (10862.251953 --> 10814.352539). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12132.87 .. NELBO:
12133.01
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5374.09 .. NELBO: 5374.12
*****
*****
Validation loss decreased (10814.352539 --> 10748.247070). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12035.05 .. NELBO:
12035.11
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5337.82 .. NELBO: 5337.85
*****
*****
Validation loss decreased (10748.247070 --> 10675.708008). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11927.62 .. NELBO:
11927.68
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5309.27 .. NELBO: 5309.31
*****
*****
Validation loss decreased (10675.708008 --> 10618.619141). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11836.35 .. NELBO:
11836.45
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5300.51 .. NELBO: 5300.58
*****
*****
Validation loss decreased (10618.619141 --> 10601.163086). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11786.99 .. NELBO:
11787.15
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5314.57 .. NELBO: 5314.66
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 11782.15 .. NELBO:
11782.32
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5337.74 .. NELBO: 5337.81
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11794.25 .. NELBO:
11794.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5351.97 .. NELBO: 5352.02
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11795.52 .. NELBO:
11795.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5352.73 .. NELBO: 5352.77
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11783.22 .. NELBO:
11783.3
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5346.35 .. NELBO: 5346.38
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06168525071395514, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=62, bias=False)
  (q_theta): Sequential(

```

```

(0): Linear(in_features=13198, out_features=800, bias=True)
(1): Sigmoid()
(2): Linear(in_features=800, out_features=800, bias=True)
(3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=62, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=62, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 69.96 .. Rec_loss: 12264.32 .. NELBO:
12334.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.98 .. Rec_loss: 5443.73 .. NELBO: 5450.71
*****
*****
Validation loss decreased (inf --> 10901.426758). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.56 .. Rec_loss: 12247.46 .. NELBO:
12255.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5430.96 .. NELBO: 5431.32
*****
*****
Validation loss decreased (10901.426758 --> 10862.640625). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 12206.4 .. NELBO:
12206.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.23 .. NELBO: 5407.29
*****
*****
Validation loss decreased (10862.640625 --> 10814.576172). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12133.94 .. NELBO:
12134.03

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5373.9 .. NELBO: 5373.92
*****
*****
Validation loss decreased (10814.576172 --> 10747.829102). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12035.07 .. NELBO:
12035.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.3 .. NELBO: 5337.31
*****
*****
Validation loss decreased (10747.829102 --> 10674.626953). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11926.58 .. NELBO:
11926.6
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5308.6 .. NELBO: 5308.61
*****
*****
Validation loss decreased (10674.626953 --> 10617.223633). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11834.98 .. NELBO:
11835.0
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.09 .. NELBO: 5300.1
*****
*****
Validation loss decreased (10617.223633 --> 10600.207031). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11785.58 .. NELBO:
11785.6

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5314.75 .. NELBO: 5314.76
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11781.56 .. NELBO:
11781.58
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.4 .. NELBO: 5338.41
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11794.68 .. NELBO:
11794.7
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.61 .. NELBO: 5352.62
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11795.1 .. NELBO:
11795.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.1 .. NELBO: 5353.11
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11782.8 .. NELBO:
11782.82

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.57 .. NELBO: 5346.58
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 175
model: ETM(
  (t_drop): Dropout(p=0.0563365655123734, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=90, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=90, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=90, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.04 .. Rec_loss: 12264.62 .. NELBO:
12350.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.93 .. Rec_loss: 5444.42 .. NELBO: 5452.35
*****
*****
Validation loss decreased (inf --> 10904.699219). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.53 .. Rec_loss: 12250.55 .. NELBO:
12259.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5433.74 .. NELBO: 5434.17
*****
*****
Validation loss decreased (10904.699219 --> 10868.336914). Saving model ...

```



```

*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12214.79 .. NELBO:
12215.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5412.77 .. NELBO: 5412.85
*****
*****
Validation loss decreased (10868.336914 --> 10825.690430). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12150.22 .. NELBO:
12150.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5382.11 .. NELBO: 5382.14
*****
*****
Validation loss decreased (10825.690430 --> 10764.279297). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12059.1 .. NELBO:
12059.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.51 .. NELBO: 5346.53
*****
*****
Validation loss decreased (10764.279297 --> 10693.060547). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11953.65 .. NELBO:
11953.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.36 .. NELBO: 5315.38
*****
*****
Validation loss decreased (10693.060547 --> 10630.766602). Saving model ...

```

```

*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11856.76 .. NELBO:
11856.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.73 .. NELBO: 5300.75
*****
*****
Validation loss decreased (10630.766602 --> 10601.502930). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.6 .. NELBO:
11795.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.02 .. NELBO: 5309.04
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.12 .. NELBO:
11780.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5331.38 .. NELBO: 5331.4
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.39 .. NELBO:
11790.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5349.17 .. NELBO: 5349.19
*****
*****
EarlyStopping counter: 3 out of 5

```

```

*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.21 .. NELBO:
11796.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.38 .. NELBO: 5353.4
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.82 .. NELBO:
11786.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.34 .. NELBO: 5348.36
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0563365655123734, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=90, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=90, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=90, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 80.97 .. Rec_loss: 12264.29 .. NELBO:
12345.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.1 .. Rec_loss: 5444.28 .. NELBO: 5452.38

```

```

*****
*****
Validation loss decreased (inf --> 10904.755859). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.78 .. Rec_loss: 12249.17 .. NELBO:
12257.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5432.64 .. NELBO: 5433.02
*****
*****
Validation loss decreased (10904.755859 --> 10866.052734). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 12210.83 .. NELBO:
12211.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.32 .. NELBO: 5410.39
*****
*****
Validation loss decreased (10866.052734 --> 10820.763672). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12142.31 .. NELBO:
12142.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.27 .. NELBO: 5378.3
*****
*****
Validation loss decreased (10820.763672 --> 10756.598633). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12047.06 .. NELBO:
12047.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.02 .. NELBO: 5342.04

```

```

*****
*****
Validation loss decreased (10756.598633 --> 10684.093750). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11939.92 .. NELBO:
11939.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.97 .. NELBO: 5311.99
*****
*****
Validation loss decreased (10684.093750 --> 10623.972656). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11845.39 .. NELBO:
11845.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.32 .. NELBO: 5300.34
*****
*****
Validation loss decreased (10623.972656 --> 10600.684570). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.04 .. NELBO:
11790.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.8 .. NELBO: 5311.82
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.54 .. NELBO:
11780.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.94 .. NELBO: 5334.96

```

```

*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.67 .. NELBO:
11792.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.09 .. NELBO: 5351.11
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.04 .. NELBO:
11796.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.52 .. NELBO: 5353.54
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.94 .. NELBO:
11784.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.7 .. NELBO: 5347.72
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0563365655123734, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=90, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()

```

```

        (2): Linear(in_features=800, out_features=800, bias=True)
        (3): Sigmoid()
    )
    (mu_q_theta): Linear(in_features=800, out_features=90, bias=True)
    (logsigma_q_theta): Linear(in_features=800, out_features=90, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 80.72 .. Rec_loss: 12264.03 .. NELBO:
12344.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.84 .. Rec_loss: 5443.86 .. NELBO: 5450.7
*****
*****
Validation loss decreased (inf --> 10901.407227). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.37 .. Rec_loss: 12247.62 .. NELBO:
12254.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5431.08 .. NELBO: 5431.46
*****
*****
Validation loss decreased (10901.407227 --> 10862.924805). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 12206.01 .. NELBO:
12206.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.32 .. NELBO: 5407.38
*****
*****
Validation loss decreased (10862.924805 --> 10814.763672). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12133.14 .. NELBO:
12133.24
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.04 .. NELBO: 5374.06
*****
*****
Validation loss decreased (10814.763672 --> 10748.126953). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12034.95 .. NELBO:
12034.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.59 .. NELBO: 5337.61
*****
*****
Validation loss decreased (10748.126953 --> 10675.210938). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11927.08 .. NELBO:
11927.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.05 .. NELBO: 5309.07
*****
*****
Validation loss decreased (10675.210938 --> 10618.133789). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11835.68 .. NELBO:
11835.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.46 .. NELBO: 5300.48
*****
*****
Validation loss decreased (10618.133789 --> 10600.950195). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.68 .. NELBO:
11786.72
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.62 .. NELBO: 5314.64
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.81 .. NELBO:
11781.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.88 .. NELBO: 5337.9
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.94 .. NELBO:
11793.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.24 .. NELBO: 5352.26
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.25 .. NELBO:
11795.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.12 .. NELBO: 5353.14
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.34 .. NELBO:
11783.38
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.78 .. NELBO: 5346.8
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 176
model: ETM(
  (t_drop): Dropout(p=0.06256592164481088, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=67, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=67, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=67, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.01 .. Rec_loss: 12264.1 .. NELBO:
12343.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.93 .. Rec_loss: 5443.77 .. NELBO: 5450.7
*****
*****
Validation loss decreased (inf --> 10901.418945). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.48 .. Rec_loss: 12247.86 .. NELBO:
12255.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5431.49 .. NELBO: 5431.89
*****
*****
Validation loss decreased (10901.418945 --> 10863.773438). Saving model ...
*****
*****

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```

Epoch----->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12207.33 .. NELBO:
12207.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.35 .. NELBO: 5408.42
*****
*****
Validation loss decreased (10863.773438 --> 10816.843750). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12136.59 .. NELBO:
12136.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.68 .. NELBO: 5375.7
*****
*****
Validation loss decreased (10816.843750 --> 10751.405273). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12039.3 .. NELBO:
12039.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.45 .. NELBO: 5339.47
*****
*****
Validation loss decreased (10751.405273 --> 10678.935547). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11931.67 .. NELBO:
11931.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.41 .. NELBO: 5310.42
*****
*****
Validation loss decreased (10678.935547 --> 10620.852539). Saving model ...
*****
*****

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```

Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.81 .. NELBO:
11839.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.59 .. NELBO: 5300.6
*****
*****
Validation loss decreased (10620.852539 --> 10601.211914). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.54 .. NELBO:
11787.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.59 .. NELBO: 5313.6
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.77 .. NELBO:
11780.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.76 .. NELBO: 5336.77
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.38 .. NELBO:
11793.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.83 .. NELBO: 5351.84
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****

```

```

Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.79 .. NELBO:
11795.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.29 .. NELBO: 5353.3
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.99 .. NELBO:
11784.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.1 .. NELBO: 5347.11
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06256592164481088, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=67, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=67, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=67, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 85.22 .. Rec_loss: 12264.28 .. NELBO:
12349.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.73 .. Rec_loss: 5444.76 .. NELBO: 5452.49
*****
*****

```

```

Validation loss decreased (inf --> 10904.966797). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.39 .. Rec_loss: 12250.7 .. NELBO:
12259.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5433.91 .. NELBO: 5434.36
*****
*****
Validation loss decreased (10904.966797 --> 10868.722656). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12215.09 .. NELBO:
12215.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5412.75 .. NELBO: 5412.84
*****
*****
Validation loss decreased (10868.722656 --> 10825.664062). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12149.79 .. NELBO:
12149.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5381.56 .. NELBO: 5381.59
*****
*****
Validation loss decreased (10825.664062 --> 10763.168945). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12056.81 .. NELBO:
12056.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.3 .. NELBO: 5345.32
*****
*****

```

```

Validation loss decreased (10763.168945 --> 10690.632812). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11949.45 .. NELBO:
11949.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.9 .. NELBO: 5313.92
*****
*****
Validation loss decreased (10690.632812 --> 10627.836914). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11851.95 .. NELBO:
11852.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5300.03 .. NELBO: 5300.06
*****
*****
Validation loss decreased (10627.836914 --> 10600.125977). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11791.57 .. NELBO:
11791.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5310.09 .. NELBO: 5310.13
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11779.23 .. NELBO:
11779.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5333.72 .. NELBO: 5333.76
*****
*****

```

```

EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11791.9 .. NELBO:
11791.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5351.31 .. NELBO: 5351.35
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11797.07 .. NELBO:
11797.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5354.66 .. NELBO: 5354.69
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11786.76 .. NELBO:
11786.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5348.98 .. NELBO: 5349.01
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06256592164481088, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=67, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()

```



```

)
(mu_q_theta): Linear(in_features=800, out_features=67, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=67, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 80.76 .. Rec_loss: 12263.81 .. NELBO:
12344.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.49 .. Rec_loss: 5443.55 .. NELBO: 5451.04
*****
*****
Validation loss decreased (inf --> 10902.087891). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.03 .. Rec_loss: 12247.52 .. NELBO:
12255.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5431.48 .. NELBO: 5431.88
*****
*****
Validation loss decreased (10902.087891 --> 10863.769531). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12208.07 .. NELBO:
12208.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.79 .. NELBO: 5408.86
*****
*****
Validation loss decreased (10863.769531 --> 10817.717773). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12139.12 .. NELBO:
12139.22
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.49 .. NELBO: 5376.51
*****
*****
Validation loss decreased (10817.717773 --> 10753.029297). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12042.87 .. NELBO:
12042.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.29 .. NELBO: 5340.31
*****
*****
Validation loss decreased (10753.029297 --> 10680.619141). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11936.14 .. NELBO:
11936.17
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.72 .. NELBO: 5310.74
*****
*****
Validation loss decreased (10680.619141 --> 10621.473633). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.5 .. NELBO:
11842.53
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.02 .. NELBO: 5300.04
*****
*****
Validation loss decreased (10621.473633 --> 10600.063477). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.99 .. NELBO:
11789.02
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.48 .. NELBO: 5312.5
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.71 .. NELBO:
11780.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.8 .. NELBO: 5335.82
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.33 .. NELBO:
11793.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.3 .. NELBO: 5351.32
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.09 .. NELBO:
11796.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.1 .. NELBO: 5353.12
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.54 .. NELBO:
11784.57
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.15 .. NELBO: 5347.17
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 177
model: ETM(
  (t_drop): Dropout(p=0.05002316199583163, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.6 .. Rec_loss: 12264.48 .. NELBO:
12353.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.75 .. Rec_loss: 5444.53 .. NELBO: 5452.28
*****
*****
Validation loss decreased (inf --> 10904.549805). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.23 .. Rec_loss: 12250.33 .. NELBO:
12258.56
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5433.39 .. NELBO: 5433.77
*****
*****
Validation loss decreased (10904.549805 --> 10867.541992). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12213.52 .. NELBO:
12214.08

```

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*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5412.0 .. NELBO: 5412.08
*****
*****
Validation loss decreased (10867.541992 --> 10824.156250). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12147.51 .. NELBO:
12147.63
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.85 .. NELBO: 5380.88
*****
*****
Validation loss decreased (10824.156250 --> 10761.750977). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12054.86 .. NELBO:
12054.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.91 .. NELBO: 5344.93
*****
*****
Validation loss decreased (10761.750977 --> 10689.857422). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11948.2 .. NELBO:
11948.24
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.02 .. NELBO: 5314.04
*****
*****
Validation loss decreased (10689.857422 --> 10628.077148). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11852.0 .. NELBO:
11852.04

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.46 .. NELBO: 5300.48
*****
*****
Validation loss decreased (10628.077148 --> 10600.962891). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.82 .. NELBO:
11792.86
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.1 .. NELBO: 5310.12
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.89 .. NELBO:
11779.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5332.9 .. NELBO: 5332.92
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.34 .. NELBO:
11791.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.04 .. NELBO: 5350.06
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.43 .. NELBO:
11796.47

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.46 .. NELBO: 5353.48
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.69 .. NELBO:
11785.73
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.15 .. NELBO: 5348.17
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05002316199583163, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 89.47 .. Rec_loss: 12263.9 .. NELBO:
12353.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.37 .. Rec_loss: 5443.59 .. NELBO: 5451.96
*****
*****
Validation loss decreased (inf --> 10903.921875). Saving model ...
*****

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```

*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.03 .. Rec_loss: 12246.94 .. NELBO:
12255.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5430.82 .. NELBO: 5431.23
*****
*****
Validation loss decreased (10903.921875 --> 10862.448242). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12205.25 .. NELBO:
12205.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5407.0 .. NELBO: 5407.06
*****
*****
Validation loss decreased (10862.448242 --> 10814.115234). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12132.65 .. NELBO:
12132.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5373.68 .. NELBO: 5373.7
*****
*****
Validation loss decreased (10814.115234 --> 10747.396484). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12034.13 .. NELBO:
12034.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.2 .. NELBO: 5337.22
*****
*****
Validation loss decreased (10747.396484 --> 10674.441406). Saving model ...
*****

```



```

*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11926.3 .. NELBO:
11926.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5308.77 .. NELBO: 5308.79
*****
*****
Validation loss decreased (10674.441406 --> 10617.577148). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11835.06 .. NELBO:
11835.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.52 .. NELBO: 5300.53
*****
*****
Validation loss decreased (10617.577148 --> 10601.070312). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.11 .. NELBO:
11786.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5315.12 .. NELBO: 5315.14
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.41 .. NELBO:
11782.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.46 .. NELBO: 5338.48
*****
*****
EarlyStopping counter: 2 out of 5
*****

```

```

*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.78 .. NELBO:
11794.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.47 .. NELBO: 5352.49
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.7 .. NELBO:
11795.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.86 .. NELBO: 5352.88
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.97 .. NELBO:
11783.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.32 .. NELBO: 5346.33
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05002316199583163, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)

```

```

(logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 85.35 .. Rec_loss: 12264.1 .. NELBO:
12349.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.19 .. Rec_loss: 5443.86 .. NELBO: 5452.05
*****
*****
Validation loss decreased (inf --> 10904.101562). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.82 .. Rec_loss: 12247.91 .. NELBO:
12256.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5431.78 .. NELBO: 5432.23
*****
*****
Validation loss decreased (10904.101562 --> 10864.463867). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12208.57 .. NELBO:
12209.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.08 .. NELBO: 5409.17
*****
*****
Validation loss decreased (10864.463867 --> 10818.337891). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12138.76 .. NELBO:
12138.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.78 .. NELBO: 5376.81
*****
*****

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```

*****
Validation loss decreased (10818.337891 --> 10753.611328). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12043.49 .. NELBO:
12043.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.54 .. NELBO: 5340.56
*****
*****
Validation loss decreased (10753.611328 --> 10681.117188). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.57 .. NELBO:
11936.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.84 .. NELBO: 5310.86
*****
*****
Validation loss decreased (10681.117188 --> 10621.718750). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.89 .. NELBO:
11842.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.95 .. NELBO: 5299.97
*****
*****
Validation loss decreased (10621.718750 --> 10599.934570). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.24 .. NELBO:
11789.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.26 .. NELBO: 5312.28
*****

```

```

*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.68 .. NELBO:
11780.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.66 .. NELBO: 5335.68
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.11 .. NELBO:
11793.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.44 .. NELBO: 5351.46
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.93 .. NELBO:
11795.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.41 .. NELBO: 5353.43
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.58 .. NELBO:
11784.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.39 .. NELBO: 5347.41
*****
*****

```

```

*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 178
model: ETM(
  (t_drop): Dropout(p=0.060825794560593525, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=55, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=55, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=55, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 72.77 .. Rec_loss: 12263.74 .. NELBO:
12336.51
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.48 .. Rec_loss: 5443.53 .. NELBO: 5451.01
*****
*****
Validation loss decreased (inf --> 10902.032227). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.02 .. Rec_loss: 12247.49 .. NELBO:
12255.51
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5431.79 .. NELBO: 5432.18
*****
*****
Validation loss decreased (10902.032227 --> 10864.355469). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12208.67 .. NELBO:
12209.23
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5409.0 .. NELBO: 5409.06
*****
*****
Validation loss decreased (10864.355469 --> 10818.116211). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12138.46 .. NELBO:
12138.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.5 .. NELBO: 5376.52
*****
*****
Validation loss decreased (10818.116211 --> 10753.038086). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12042.05 .. NELBO:
12042.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5340.09 .. NELBO: 5340.1
*****
*****
Validation loss decreased (10753.038086 --> 10680.210938). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11933.4 .. NELBO:
11933.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.5 .. NELBO: 5310.51
*****
*****
Validation loss decreased (10680.210938 --> 10621.028320). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11840.61 .. NELBO:
11840.63
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.11 .. NELBO: 5300.12
*****
*****
Validation loss decreased (10621.028320 --> 10600.231445). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11788.18 .. NELBO:
11788.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.01 .. NELBO: 5313.02
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11780.36 .. NELBO:
11780.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.6 .. NELBO: 5336.61
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11792.57 .. NELBO:
11792.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.02 .. NELBO: 5352.03
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11796.39 .. NELBO:
11796.41
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.56 .. NELBO: 5353.57
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11784.14 .. NELBO:
11784.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.29 .. NELBO: 5347.3
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.060825794560593525, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=55, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=55, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=55, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 73.44 .. Rec_loss: 12264.07 .. NELBO:
12337.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.9 .. Rec_loss: 5443.5 .. NELBO: 5450.4
*****
*****
Validation loss decreased (inf --> 10900.794922). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.39 .. Rec_loss: 12247.22 .. NELBO:

```

```

12254.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5431.33 .. NELBO: 5431.78
*****
*****
Validation loss decreased (10900.794922 --> 10863.563477). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.68 .. Rec_loss: 12206.61 .. NELBO:
12207.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5408.23 .. NELBO: 5408.32
*****
*****
Validation loss decreased (10863.563477 --> 10816.651367). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12136.32 .. NELBO:
12136.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.59 .. NELBO: 5375.61
*****
*****
Validation loss decreased (10816.651367 --> 10751.226562). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12039.08 .. NELBO:
12039.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.33 .. NELBO: 5339.35
*****
*****
Validation loss decreased (10751.226562 --> 10678.684570). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11932.19 .. NELBO:

```

```
11932.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.1 .. NELB0: 5310.12
*****
*****
Validation loss decreased (10678.684570 --> 10620.242188). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11839.64 .. NELB0:
11839.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5300.11 .. NELB0: 5300.14
*****
*****
Validation loss decreased (10620.242188 --> 10600.273438). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11786.88 .. NELB0:
11786.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5313.28 .. NELB0: 5313.32
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11780.05 .. NELB0:
11780.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5336.87 .. NELB0: 5336.91
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11794.26 .. NELB0:
```

```

11794.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5352.17 .. NELBO: 5352.21
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11795.91 .. NELBO:
11795.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.58 .. NELBO: 5353.61
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11784.24 .. NELBO:
11784.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5347.29 .. NELBO: 5347.32
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.060825794560593525, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=55, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=55, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=55, bias=True)
)

```

```

*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 68.87 .. Rec_loss: 12264.19 .. NELBO:
12333.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.56 .. Rec_loss: 5443.9 .. NELBO: 5451.46
*****
*****
Validation loss decreased (inf --> 10902.935547). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.13 .. Rec_loss: 12248.37 .. NELBO:
12256.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5432.18 .. NELBO: 5432.51
*****
*****
Validation loss decreased (10902.935547 --> 10865.013672). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 12209.72 .. NELBO:
12210.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.47 .. NELBO: 5409.54
*****
*****
Validation loss decreased (10865.013672 --> 10819.074219). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12139.52 .. NELBO:
12139.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.0 .. NELBO: 5377.02
*****
*****
Validation loss decreased (10819.074219 --> 10754.041016). Saving model ...

```

```
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12043.11 .. NELBO:
12043.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.5 .. NELBO: 5340.52
*****
*****
Validation loss decreased (10754.041016 --> 10681.029297). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11935.18 .. NELBO:
11935.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.7 .. NELBO: 5310.71
*****
*****
Validation loss decreased (10681.029297 --> 10621.422852). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11841.01 .. NELBO:
11841.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.12 .. NELBO: 5300.14
*****
*****
Validation loss decreased (10621.422852 --> 10600.269531). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.71 .. NELBO:
11787.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.07 .. NELBO: 5313.09
*****
*****
EarlyStopping counter: 1 out of 5
```

```

*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.72 .. NELBO:
11780.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.76 .. NELBO: 5336.78
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.32 .. NELBO:
11793.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.26 .. NELBO: 5352.28
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.65 .. NELBO:
11796.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.76 .. NELBO: 5353.78
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.34 .. NELBO:
11784.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.46 .. NELBO: 5347.47
*****
*****
EarlyStopping counter: 5 out of 5

```

```

Early stopping
Current call: 179
model: ETM(
  (t_drop): Dropout(p=0.06489564028344115, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 96.29 .. Rec_loss: 12264.22 .. NELBO:
12360.51
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.72 .. Rec_loss: 5444.06 .. NELBO: 5452.78
*****
*****
Validation loss decreased (inf --> 10905.562500). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.52 .. Rec_loss: 12248.35 .. NELBO:
12257.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5431.71 .. NELBO: 5432.22
*****
*****
Validation loss decreased (10905.562500 --> 10864.428711). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 12207.84 .. NELBO:
12208.56
*****
*****
*****
*****

```



```

VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.25 .. NELBO: 5408.33
*****
*****
Validation loss decreased (10864.428711 --> 10816.663086). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12136.5 .. NELBO:
12136.62
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.14 .. NELBO: 5375.17
*****
*****
Validation loss decreased (10816.663086 --> 10750.331055). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12038.72 .. NELBO:
12038.77
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.56 .. NELBO: 5338.58
*****
*****
Validation loss decreased (10750.331055 --> 10677.175781). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11930.16 .. NELBO:
11930.2
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.58 .. NELBO: 5309.6
*****
*****
Validation loss decreased (10677.175781 --> 10619.207031). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11838.58 .. NELBO:
11838.62
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.33 .. NELBO: 5300.35
*****
*****
Validation loss decreased (10619.207031 --> 10600.703125). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.04 .. NELBO:
11788.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.96 .. NELBO: 5313.98
*****
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.29 .. NELBO:
11782.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.12 .. NELBO: 5337.14
*****
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.17 .. NELBO:
11794.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.69 .. NELBO: 5351.71
*****
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.3 .. NELBO:
11795.34
*****
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.77 .. NELBO: 5352.79
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.28 .. NELBO:
11783.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.58 .. NELBO: 5346.6
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06489564028344115, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 91.19 .. Rec_loss: 12264.06 .. NELBO:
12355.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.98 .. Rec_loss: 5444.36 .. NELBO: 5452.34
*****
*****
Validation loss decreased (inf --> 10904.678711). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.61 .. Rec_loss: 12249.83 .. NELBO:
12258.44
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.95 .. NELBO: 5433.38
*****
*****
Validation loss decreased (10904.678711 --> 10866.758789). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12211.7 .. NELBO:
12212.31
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.48 .. NELBO: 5410.55
*****
*****
Validation loss decreased (10866.758789 --> 10821.109375). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12142.35 .. NELBO:
12142.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.18 .. NELBO: 5378.21
*****
*****
Validation loss decreased (10821.109375 --> 10756.413086). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12046.7 .. NELBO:
12046.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.67 .. NELBO: 5341.69
*****
*****
Validation loss decreased (10756.413086 --> 10683.371094). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11938.72 .. NELBO:
11938.76
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.56 .. NELBO: 5311.58
*****
*****
Validation loss decreased (10683.371094 --> 10623.162109). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11844.33 .. NELBO:
11844.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.32 .. NELBO: 5300.34
*****
*****
Validation loss decreased (10623.162109 --> 10600.667969). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.39 .. NELBO:
11789.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.46 .. NELBO: 5312.48
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.72 .. NELBO:
11780.76
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.84 .. NELBO: 5335.86
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.16 .. NELBO:
11793.2
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.59 .. NELBO: 5351.61
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.39 .. NELBO:
11796.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.52 .. NELBO: 5353.54
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.96 .. NELBO:
11785.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.47 .. NELBO: 5347.49
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06489564028344115, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****

```

```

Epoch---->1 .. LR: 0.005 .. KL_theta: 84.43 .. Rec_loss: 12263.99 .. NELBO:
12348.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.94 .. Rec_loss: 5444.22 .. NELBO: 5452.16
*****
*****
Validation loss decreased (inf --> 10904.322266). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.63 .. Rec_loss: 12248.84 .. NELBO:
12257.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.4 .. Rec_loss: 5432.42 .. NELBO: 5432.82
*****
*****
Validation loss decreased (10904.322266 --> 10865.640625). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12209.92 .. NELBO:
12210.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.57 .. NELBO: 5409.64
*****
*****
Validation loss decreased (10865.640625 --> 10819.282227). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12139.73 .. NELBO:
12139.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.0 .. NELBO: 5377.03
*****
*****
Validation loss decreased (10819.282227 --> 10754.043945). Saving model ...
*****
*****

```

```

Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12042.61 .. NELBO:
12042.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.51 .. NELBO: 5340.53
*****
*****
Validation loss decreased (10754.043945 --> 10681.060547). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11934.66 .. NELBO:
11934.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.92 .. NELBO: 5310.94
*****
*****
Validation loss decreased (10681.060547 --> 10621.875977). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.55 .. NELBO:
11841.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.6 .. NELBO: 5300.62
*****
*****
Validation loss decreased (10621.875977 --> 10601.230469). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.61 .. NELBO:
11788.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.55 .. NELBO: 5313.57
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****

```



```
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.44 .. NELBO:
11781.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.95 .. NELBO: 5336.97
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.81 .. NELBO:
11793.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.11 .. NELBO: 5352.13
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.62 .. NELBO:
11796.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.44 .. NELBO: 5353.46
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.13 .. NELBO:
11784.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.1 .. NELBO: 5347.12
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 180
```

```

model: ETM(
  (t_drop): Dropout(p=0.033658286375473016, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 94.76 .. Rec_loss: 12264.35 .. NELBO:
12359.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.7 .. Rec_loss: 5444.43 .. NELBO: 5453.13
*****
*****
Validation loss decreased (inf --> 10906.264648). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.51 .. Rec_loss: 12250.09 .. NELBO:
12259.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5433.5 .. NELBO: 5434.01
*****
*****
Validation loss decreased (10906.264648 --> 10868.013672). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.72 .. Rec_loss: 12213.11 .. NELBO:
12213.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5411.68 .. NELBO: 5411.77
*****
*****

```

```

*****
Validation loss decreased (10868.013672 --> 10823.536133). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12145.83 .. NELBO:
12145.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.06 .. NELBO: 5380.09
*****
*****
Validation loss decreased (10823.536133 --> 10760.179688). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12051.24 .. NELBO:
12051.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.94 .. NELBO: 5343.96
*****
*****
Validation loss decreased (10760.179688 --> 10687.918945). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11944.75 .. NELBO:
11944.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.4 .. NELBO: 5313.42
*****
*****
Validation loss decreased (10687.918945 --> 10626.842773). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11848.84 .. NELBO:
11848.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.67 .. NELBO: 5300.69
*****

```

```

*****
Validation loss decreased (10626.842773 --> 10601.383789). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.36 .. NELBO:
11791.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.08 .. NELBO: 5311.1
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.05 .. NELBO:
11780.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.04 .. NELBO: 5334.06
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.3 .. NELBO:
11792.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.8 .. NELBO: 5350.82
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.66 .. NELBO:
11796.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.78 .. NELBO: 5353.8
*****

```

```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.19 .. NELBO:
11786.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.1 .. NELBO: 5348.12
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.033658286375473016, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 83.26 .. Rec_loss: 12264.37 .. NELBO:
12347.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.4 .. Rec_loss: 5443.83 .. NELBO: 5451.23
*****
*****
Validation loss decreased (inf --> 10902.478516). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.94 .. Rec_loss: 12247.9 .. NELBO:
12255.84
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5431.3 .. NELB0: 5431.72
*****
*****
Validation loss decreased (10902.478516 --> 10863.458008). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12207.23 .. NELB0:
12207.85
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5407.74 .. NELB0: 5407.82
*****
*****
Validation loss decreased (10863.458008 --> 10815.644531). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12135.28 .. NELB0:
12135.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5374.53 .. NELB0: 5374.56
*****
*****
Validation loss decreased (10815.644531 --> 10749.114258). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12037.11 .. NELB0:
12037.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.99 .. NELB0: 5338.01
*****
*****
Validation loss decreased (10749.114258 --> 10676.011719). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11929.36 .. NELB0:
11929.4
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.21 .. NELB0: 5309.23
*****
*****
Validation loss decreased (10676.011719 --> 10618.454102). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11838.07 .. NELB0:
11838.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.33 .. NELB0: 5300.35
*****
*****
Validation loss decreased (10618.454102 --> 10600.698242). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.78 .. NELB0:
11787.82
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.3 .. NELB0: 5314.32
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.58 .. NELB0:
11782.62
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.44 .. NELB0: 5337.46
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.07 .. NELB0:
11794.11
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.66 .. NELBO: 5351.68
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.53 .. NELBO:
11795.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.44 .. NELBO: 5352.46
*****
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.94 .. NELBO:
11782.98
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.13 .. NELBO: 5346.15
*****
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.033658286375473016, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 76.35 .. Rec_loss: 12264.18 .. NELBO:
12340.53

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.4 .. Rec_loss: 5444.04 .. NELBO: 5451.44
*****
*****
Validation loss decreased (inf --> 10902.875977). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.97 .. Rec_loss: 12248.11 .. NELBO:
12256.08
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.36 .. Rec_loss: 5431.52 .. NELBO: 5431.88
*****
*****
Validation loss decreased (10902.875977 --> 10863.753906). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 12207.75 .. NELBO:
12208.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5408.29 .. NELBO: 5408.35
*****
*****
Validation loss decreased (10863.753906 --> 10816.689453). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12136.71 .. NELBO:
12136.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.61 .. NELBO: 5375.63
*****
*****
Validation loss decreased (10816.689453 --> 10751.273438). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12040.0 .. NELBO:
12040.04

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.51 .. NELBO: 5339.53
*****
*****
Validation loss decreased (10751.273438 --> 10679.059570). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11933.33 .. NELBO:
11933.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.58 .. NELBO: 5310.6
*****
*****
Validation loss decreased (10679.059570 --> 10621.198242). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11841.64 .. NELBO:
11841.67
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.62 .. NELBO: 5300.64
*****
*****
Validation loss decreased (10621.198242 --> 10601.274414). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.72 .. NELBO:
11789.75
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.16 .. NELBO: 5313.18
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.02 .. NELBO:
11782.06

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.81 .. NELBO: 5335.83
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.17 .. NELBO:
11793.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.75 .. NELBO: 5350.77
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.12 .. NELBO:
11795.16
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.44 .. NELBO: 5352.46
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.78 .. NELBO:
11783.81
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.58 .. NELBO: 5346.6
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 181
model: ETM(
    (t_drop): Dropout(p=0.04998046010424031, inplace=False)

```

```

(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=67, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=67, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=67, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 96.88 .. Rec_loss: 12263.86 .. NELBO:
12360.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.0 .. Rec_loss: 5443.98 .. NELBO: 5452.98
*****
*****
Validation loss decreased (inf --> 10905.950195). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 9.61 .. Rec_loss: 12248.88 .. NELBO:
12258.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5432.6 .. NELBO: 5433.13
*****
*****
Validation loss decreased (10905.950195 --> 10866.252930). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.78 .. Rec_loss: 12211.46 .. NELBO:
12212.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5410.66 .. NELBO: 5410.76
*****
*****
Validation loss decreased (10866.252930 --> 10821.523438). Saving model ...

```

```

*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 12144.29 .. NELBO:
12144.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.91 .. NELBO: 5378.94
*****
*****
Validation loss decreased (10821.523438 --> 10757.877930). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12049.48 .. NELBO:
12049.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.64 .. NELBO: 5342.66
*****
*****
Validation loss decreased (10757.877930 --> 10685.319336). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11942.56 .. NELBO:
11942.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.12 .. NELBO: 5312.14
*****
*****
Validation loss decreased (10685.319336 --> 10624.275391). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11847.37 .. NELBO:
11847.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5299.83 .. NELBO: 5299.86
*****
*****
Validation loss decreased (10624.275391 --> 10599.708008). Saving model ...

```

```

*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11790.45 .. NELBO:
11790.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5311.09 .. NELBO: 5311.13
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11780.21 .. NELBO:
11780.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5334.64 .. NELBO: 5334.68
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11792.88 .. NELBO:
11792.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5351.29 .. NELBO: 5351.33
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11796.65 .. NELBO:
11796.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.86 .. NELBO: 5353.89
*****
*****
EarlyStopping counter: 4 out of 5

```

```

*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.86 .. NELBO:
11785.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.99 .. NELBO: 5348.01
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04998046010424031, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=67, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=67, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=67, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 75.32 .. Rec_loss: 12264.05 .. NELBO:
12339.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.0 .. Rec_loss: 5444.1 .. NELBO: 5451.1
*****
*****
Validation loss decreased (inf --> 10902.202148). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.54 .. Rec_loss: 12248.78 .. NELBO:
12256.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5432.24 .. NELBO: 5432.59

```

```

*****
*****
Validation loss decreased (10902.202148 --> 10865.188477). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12209.79 .. NELBO:
12210.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5409.65 .. NELBO: 5409.71
*****
*****
Validation loss decreased (10865.188477 --> 10819.423828). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12140.42 .. NELBO:
12140.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.25 .. NELBO: 5377.27
*****
*****
Validation loss decreased (10819.423828 --> 10754.540039). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12044.06 .. NELBO:
12044.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5340.71 .. NELBO: 5340.72
*****
*****
Validation loss decreased (10754.540039 --> 10681.453125). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11935.65 .. NELBO:
11935.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.88 .. NELBO: 5310.89

```



```

*****
*****
Validation loss decreased (10681.453125 --> 10621.785156). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11840.96 .. NELBO:
11840.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.36 .. NELBO: 5300.37
*****
*****
Validation loss decreased (10621.785156 --> 10600.741211). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.29 .. NELBO:
11787.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5313.36 .. NELBO: 5313.37
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.47 .. NELBO:
11780.5
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.12 .. NELBO: 5337.13
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.78 .. NELBO:
11793.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.6 .. NELBO: 5352.61

```

```

*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.57 .. NELBO:
11796.6
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5354.0 .. NELBO: 5354.01
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.25 .. NELBO:
11784.28
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.6 .. NELBO: 5347.61
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04998046010424031, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=67, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=67, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=67, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 70.54 .. Rec_loss: 12264.27 .. NELBO:
12334.81
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.45 .. Rec_loss: 5444.42 .. NELBO: 5451.87
*****
*****
Validation loss decreased (inf --> 10903.738281). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.97 .. Rec_loss: 12249.71 .. NELBO:
12257.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.34 .. Rec_loss: 5433.18 .. NELBO: 5433.52
*****
*****
Validation loss decreased (10903.738281 --> 10867.032227). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12212.57 .. NELBO:
12213.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5411.1 .. NELBO: 5411.17
*****
*****
Validation loss decreased (10867.032227 --> 10822.325195). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12144.53 .. NELBO:
12144.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.15 .. NELBO: 5379.17
*****
*****
Validation loss decreased (10822.325195 --> 10758.347656). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12049.28 .. NELBO:
12049.32
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.79 .. NELBO: 5342.81
*****
*****
Validation loss decreased (10758.347656 --> 10685.604492). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11942.28 .. NELBO:
11942.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.39 .. NELBO: 5312.41
*****
*****
Validation loss decreased (10685.604492 --> 10624.805664). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11847.14 .. NELBO:
11847.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELBO: 5300.39
*****
*****
Validation loss decreased (10624.805664 --> 10600.763672). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.35 .. NELBO:
11791.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.69 .. NELBO: 5311.71
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.0 .. NELBO:
11781.03
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.85 .. NELBO: 5334.87
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.21 .. NELBO:
11793.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.99 .. NELBO: 5351.01
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.32 .. NELBO:
11796.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.32 .. NELBO: 5353.34
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.14 .. NELBO:
11785.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.44 .. NELBO: 5347.45
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 182
model: ETM(
  (t_drop): Dropout(p=0.049875457089077195, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)

```

```

(alphas): Linear(in_features=300, out_features=98, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=98, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=98, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 90.84 .. Rec_loss: 12264.38 .. NELBO:
12355.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.06 .. Rec_loss: 5444.17 .. NELBO: 5452.23
*****
*****
Validation loss decreased (inf --> 10904.443359). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.71 .. Rec_loss: 12248.8 .. NELBO:
12257.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5432.24 .. NELBO: 5432.65
*****
*****
Validation loss decreased (10904.443359 --> 10865.318359). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 12209.57 .. NELBO:
12210.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.69 .. NELBO: 5409.76
*****
*****
Validation loss decreased (10865.318359 --> 10819.514648). Saving model ...
*****
*****

```

```
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12140.42 .. NELBO:
12140.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.56 .. NELBO: 5377.59
*****
*****
Validation loss decreased (10819.514648 --> 10755.166992). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12045.16 .. NELBO:
12045.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.42 .. NELBO: 5341.44
*****
*****
Validation loss decreased (10755.166992 --> 10682.876953). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11938.43 .. NELBO:
11938.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.69 .. NELBO: 5311.71
*****
*****
Validation loss decreased (10682.876953 --> 10623.419922). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11844.57 .. NELBO:
11844.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.54 .. NELBO: 5300.56
*****
*****
Validation loss decreased (10623.419922 --> 10601.119141). Saving model ...
*****
*****
```

```

Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.98 .. NELBO:
11790.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.35 .. NELBO: 5312.37
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.18 .. NELBO:
11781.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.35 .. NELBO: 5335.37
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.93 .. NELBO:
11792.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.08 .. NELBO: 5351.1
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.86 .. NELBO:
11795.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.17 .. NELBO: 5353.19
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****

```



```

Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.38 .. NELBO:
11784.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.29 .. NELBO: 5347.31
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.049875457089077195, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=98, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=98, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=98, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 102.32 .. Rec_loss: 12264.01 .. NELBO:
12366.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.11 .. Rec_loss: 5444.21 .. NELBO: 5452.32
*****
*****
Validation loss decreased (inf --> 10904.626953). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.69 .. Rec_loss: 12248.99 .. NELBO:
12257.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 5432.49 .. NELBO: 5432.99
*****
*****

```

```

Validation loss decreased (10904.626953 --> 10865.980469). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 12209.96 .. NELBO:
12210.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.83 .. NELBO: 5409.92
*****
*****
Validation loss decreased (10865.980469 --> 10819.845703). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12140.21 .. NELBO:
12140.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.38 .. NELBO: 5377.41
*****
*****
Validation loss decreased (10819.845703 --> 10754.830078). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12044.1 .. NELBO:
12044.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.9 .. NELBO: 5340.92
*****
*****
Validation loss decreased (10754.830078 --> 10681.841797). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11935.65 .. NELBO:
11935.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.08 .. NELBO: 5311.1
*****
*****

```

```

Validation loss decreased (10681.841797 --> 10622.202148). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11842.09 .. NELBO:
11842.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.4 .. NELBO: 5300.42
*****
*****
Validation loss decreased (10622.202148 --> 10600.847656). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.38 .. NELBO:
11788.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.11 .. NELBO: 5313.13
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.77 .. NELBO:
11780.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.65 .. NELBO: 5336.67
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.71 .. NELBO:
11793.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.19 .. NELBO: 5352.21
*****
*****

```

```

EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.47 .. NELBO:
11796.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.82 .. NELBO: 5353.84
*****
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.67 .. NELBO:
11784.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.58 .. NELBO: 5347.6
*****
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.049875457089077195, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=98, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=98, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=98, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 104.31 .. Rec_loss: 12264.13 .. NELBO:
12368.44
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 8.75 .. Rec_loss: 5444.02 .. NELBO: 5452.77
*****
*****
Validation loss decreased (inf --> 10905.554688). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 9.36 .. Rec_loss: 12248.57 .. NELBO:
12257.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5432.12 .. NELBO: 5432.63
*****
*****
Validation loss decreased (10905.554688 --> 10865.249023). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 12209.14 .. NELBO:
12209.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.23 .. NELBO: 5409.32
*****
*****
Validation loss decreased (10865.249023 --> 10818.647461). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12138.78 .. NELBO:
12138.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.57 .. NELBO: 5376.6
*****
*****
Validation loss decreased (10818.647461 --> 10753.209961). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12041.74 .. NELBO:
12041.8
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.03 .. NELBO: 5340.05
*****
*****
Validation loss decreased (10753.209961 --> 10680.108398). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11934.0 .. NELBO:
11934.05
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.49 .. NELBO: 5310.51
*****
*****
Validation loss decreased (10680.108398 --> 10621.016602). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11840.44 .. NELBO:
11840.49
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELBO: 5300.39
*****
*****
Validation loss decreased (10621.016602 --> 10600.788086). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11787.84 .. NELBO:
11787.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.57 .. NELBO: 5313.59
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11781.03 .. NELBO:
11781.08
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.06 .. NELBO: 5337.08
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.75 .. NELBO:
11793.8
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.16 .. NELBO: 5352.18
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.15 .. NELBO:
11796.2
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.43 .. NELBO: 5353.45
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11783.87 .. NELBO:
11783.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.12 .. NELBO: 5347.14
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 183
model: ETM(
  (t_dropout): Dropout(p=0.021950933171219014, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=93, bias=False)
  (q_theta): Sequential(

```

```

(0): Linear(in_features=13198, out_features=800, bias=True)
(1): Sigmoid()
(2): Linear(in_features=800, out_features=800, bias=True)
(3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=93, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=93, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 89.19 .. Rec_loss: 12264.22 .. NELBO:
12353.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.27 .. Rec_loss: 5444.11 .. NELBO: 5452.38
*****
*****
Validation loss decreased (inf --> 10904.775391). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.98 .. Rec_loss: 12248.75 .. NELBO:
12257.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.23 .. NELBO: 5432.68
*****
*****
Validation loss decreased (10904.775391 --> 10865.365234). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12209.58 .. NELBO:
12210.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.6 .. NELBO: 5409.67
*****
*****
Validation loss decreased (10865.365234 --> 10819.333984). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12140.38 .. NELBO:
12140.48

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.29 .. NELBO: 5377.31
*****
*****
Validation loss decreased (10819.333984 --> 10754.630859). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12044.37 .. NELBO:
12044.41
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.99 .. NELBO: 5341.01
*****
*****
Validation loss decreased (10754.630859 --> 10682.017578). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.75 .. NELBO:
11936.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.27 .. NELBO: 5311.29
*****
*****
Validation loss decreased (10682.017578 --> 10622.574219). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11842.75 .. NELBO:
11842.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.4 .. NELBO: 5300.42
*****
*****
Validation loss decreased (10622.574219 --> 10600.833008). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.06 .. NELBO:
11789.1

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.69 .. NELBO: 5312.71
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.7 .. NELBO:
11780.74
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.99 .. NELBO: 5336.01
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.82 .. NELBO:
11792.86
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.64 .. NELBO: 5351.66
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.19 .. NELBO:
11796.23
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.53 .. NELBO: 5353.55
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.75 .. NELBO:
11784.78

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.47 .. NELBO: 5347.49
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.021950933171219014, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=93, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=93, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=93, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 90.28 .. Rec_loss: 12264.33 .. NELBO:
12354.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.33 .. Rec_loss: 5444.29 .. NELBO: 5452.62
*****
*****
Validation loss decreased (inf --> 10905.251953). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.01 .. Rec_loss: 12249.2 .. NELBO:
12258.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5432.18 .. NELBO: 5432.67
*****
*****
Validation loss decreased (10905.251953 --> 10865.350586). Saving model ...
*****

```

```

*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.7 .. Rec_loss: 12209.1 .. NELBO:
12209.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.89 .. NELBO: 5408.97
*****
*****
Validation loss decreased (10865.350586 --> 10817.949219). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12137.81 .. NELBO:
12137.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.87 .. NELBO: 5375.9
*****
*****
Validation loss decreased (10817.949219 --> 10751.803711). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12040.55 .. NELBO:
12040.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.19 .. NELBO: 5339.21
*****
*****
Validation loss decreased (10751.803711 --> 10678.431641). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11931.71 .. NELBO:
11931.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.88 .. NELBO: 5309.9
*****
*****
Validation loss decreased (10678.431641 --> 10619.812500). Saving model ...
*****

```

```

*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11839.34 .. NELBO:
11839.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.31 .. NELBO: 5300.33
*****
*****
Validation loss decreased (10619.812500 --> 10600.671875). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.0 .. NELBO:
11788.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.95 .. NELBO: 5313.97
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.96 .. NELBO:
11782.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.39 .. NELBO: 5337.41
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.36 .. NELBO:
11794.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.12 .. NELBO: 5352.14
*****
*****
EarlyStopping counter: 3 out of 5
*****

```

```

*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.17 .. NELBO:
11796.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.14 .. NELBO: 5353.16
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.28 .. NELBO:
11783.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.8 .. NELBO: 5346.82
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.021950933171219014, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=93, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=93, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=93, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 97.48 .. Rec_loss: 12264.41 .. NELBO:
12361.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.7 .. Rec_loss: 5444.52 .. NELBO: 5453.22
*****

```

```

*****
Validation loss decreased (inf --> 10906.437500). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.36 .. Rec_loss: 12250.17 .. NELBO:
12259.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5433.47 .. NELBO: 5433.94
*****
*****
Validation loss decreased (10906.437500 --> 10867.882812). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12213.83 .. NELBO:
12214.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5412.07 .. NELBO: 5412.14
*****
*****
Validation loss decreased (10867.882812 --> 10824.274414). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12148.04 .. NELBO:
12148.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5380.83 .. NELBO: 5380.85
*****
*****
Validation loss decreased (10824.274414 --> 10761.714844). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12054.69 .. NELBO:
12054.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.83 .. NELBO: 5344.85
*****

```

```

*****
Validation loss decreased (10761.714844 --> 10689.697266). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11948.0 .. NELBO:
11948.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.94 .. NELBO: 5313.96
*****
*****
Validation loss decreased (10689.697266 --> 10627.923828). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11851.89 .. NELBO:
11851.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.51 .. NELBO: 5300.53
*****
*****
Validation loss decreased (10627.923828 --> 10601.047852). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.7 .. NELBO:
11792.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.37 .. NELBO: 5310.39
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.05 .. NELBO:
11780.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.3 .. NELBO: 5333.32
*****

```



```

*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.88 .. NELBO:
11791.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.38 .. NELBO: 5350.4
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.46 .. NELBO:
11796.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.67 .. NELBO: 5353.69
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11786.32 .. NELBO:
11786.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.19 .. NELBO: 5348.21
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 184
model: ETM(
  (t_drop): Dropout(p=0.041536794283641695, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=96, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()

```

```

        (2): Linear(in_features=800, out_features=800, bias=True)
        (3): Sigmoid()
    )
    (mu_q_theta): Linear(in_features=800, out_features=96, bias=True)
    (logsigma_q_theta): Linear(in_features=800, out_features=96, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 101.99 .. Rec_loss: 12263.67 .. NELBO:
12365.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.28 .. Rec_loss: 5443.95 .. NELBO: 5452.23
*****
*****
Validation loss decreased (inf --> 10904.458008). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.94 .. Rec_loss: 12248.08 .. NELBO:
12257.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.52 .. Rec_loss: 5431.79 .. NELBO: 5432.31
*****
*****
Validation loss decreased (10904.458008 --> 10864.614258). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.74 .. Rec_loss: 12208.28 .. NELBO:
12209.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5408.57 .. NELBO: 5408.66
*****
*****
Validation loss decreased (10864.614258 --> 10817.316406). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12136.64 .. NELBO:
12136.77
*****
*****

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```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.49 .. NELBO: 5375.52
*****
*****
Validation loss decreased (10817.316406 --> 10751.045898). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12039.1 .. NELBO:
12039.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.79 .. NELBO: 5338.81
*****
*****
Validation loss decreased (10751.045898 --> 10677.629883). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11929.88 .. NELBO:
11929.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.66 .. NELBO: 5309.68
*****
*****
Validation loss decreased (10677.629883 --> 10619.360352). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11837.38 .. NELBO:
11837.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.47 .. NELBO: 5300.49
*****
*****
Validation loss decreased (10619.360352 --> 10600.972656). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.74 .. NELBO:
11786.78
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.47 .. NELBO: 5314.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.79 .. NELBO:
11781.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.03 .. NELBO: 5338.05
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.15 .. NELBO:
11794.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.69 .. NELBO: 5352.71
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.13 .. NELBO:
11796.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.54 .. NELBO: 5353.56
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.92 .. NELBO:
11783.96
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.04 .. NELBO: 5347.06
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.041536794283641695, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=96, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=96, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=96, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 96.62 .. Rec_loss: 12264.28 .. NELBO:
12360.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.83 .. Rec_loss: 5444.02 .. NELBO: 5452.85
*****
*****
Validation loss decreased (inf --> 10905.704102). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.48 .. Rec_loss: 12248.45 .. NELBO:
12257.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5432.04 .. NELBO: 5432.48
*****
*****
Validation loss decreased (10905.704102 --> 10864.974609). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12209.13 .. NELBO:

```

```

12209.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.29 .. NELBO: 5409.36
*****
*****
Validation loss decreased (10864.974609 --> 10818.731445). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12139.53 .. NELBO:
12139.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.88 .. NELBO: 5376.91
*****
*****
Validation loss decreased (10818.731445 --> 10753.818359). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12042.99 .. NELBO:
12043.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.62 .. NELBO: 5340.64
*****
*****
Validation loss decreased (10753.818359 --> 10681.282227). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11935.4 .. NELBO:
11935.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.11 .. NELBO: 5311.13
*****
*****
Validation loss decreased (10681.282227 --> 10622.260742). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.93 .. NELBO:

```

```
11841.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.51 .. NELB0: 5300.53
*****
*****
Validation loss decreased (10622.260742 --> 10601.060547). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.0 .. NELB0:
11789.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.9 .. NELB0: 5312.92
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.8 .. NELB0:
11780.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.06 .. NELB0: 5336.08
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.26 .. NELB0:
11793.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.56 .. NELB0: 5351.58
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.1 .. NELB0:
```

```

11796.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.38 .. NELBO: 5353.4
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.85 .. NELBO:
11784.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.35 .. NELBO: 5347.37
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.041536794283641695, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=96, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=96, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=96, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 86.06 .. Rec_loss: 12264.24 .. NELBO:
12350.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.09 .. Rec_loss: 5444.21 .. NELBO: 5452.3
*****
*****
Validation loss decreased (inf --> 10904.588867). Saving model ...

```



```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.68 .. Rec_loss: 12249.11 .. NELBO:
12257.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5432.39 .. NELBO: 5432.78
*****
*****
Validation loss decreased (10904.588867 --> 10865.547852). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 12210.27 .. NELBO:
12210.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.82 .. NELBO: 5409.89
*****
*****
Validation loss decreased (10865.547852 --> 10819.779297). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12141.08 .. NELBO:
12141.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.59 .. NELBO: 5377.62
*****
*****
Validation loss decreased (10819.779297 --> 10755.223633). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12045.35 .. NELBO:
12045.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.35 .. NELBO: 5341.37
*****
*****
Validation loss decreased (10755.223633 --> 10682.741211). Saving model ...

```

```
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11938.03 .. NELBO:
11938.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.57 .. NELBO: 5311.59
*****
*****
Validation loss decreased (10682.741211 --> 10623.174805). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11845.0 .. NELBO:
11845.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELBO: 5300.39
*****
*****
Validation loss decreased (10623.174805 --> 10600.788086). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.84 .. NELBO:
11789.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.25 .. NELBO: 5312.27
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.95 .. NELBO:
11780.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.38 .. NELBO: 5335.4
*****
*****
EarlyStopping counter: 2 out of 5
```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.37 .. NELBO:
11793.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.15 .. NELBO: 5351.17
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.44 .. NELBO:
11796.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.25 .. NELBO: 5353.27
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.81 .. NELBO:
11784.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.33 .. NELBO: 5347.35
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 185
model: ETM(
  (t_drop): Dropout(p=0.05882039449393778, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=50, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()

```

```

)
(mu_q_theta): Linear(in_features=800, out_features=50, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=50, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 71.39 .. Rec_loss: 12264.03 .. NELBO:
12335.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.37 .. Rec_loss: 5443.81 .. NELBO: 5451.18
*****
*****
Validation loss decreased (inf --> 10902.360352). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 7.98 .. Rec_loss: 12248.57 .. NELBO:
12256.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.76 .. NELBO: 5433.19
*****
*****
Validation loss decreased (10902.360352 --> 10866.375977). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12211.97 .. NELBO:
12212.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5411.14 .. NELBO: 5411.22
*****
*****
Validation loss decreased (10866.375977 --> 10822.445312). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12145.45 .. NELBO:
12145.58
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.81 .. NELBO: 5379.84
*****
*****
Validation loss decreased (10822.445312 --> 10759.660156). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12051.57 .. NELBO:
12051.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.79 .. NELBO: 5343.81
*****
*****
Validation loss decreased (10759.660156 --> 10687.611328). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11944.89 .. NELBO:
11944.92
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.13 .. NELBO: 5313.15
*****
*****
Validation loss decreased (10687.611328 --> 10626.300781). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11848.8 .. NELBO:
11848.84
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5300.27 .. NELBO: 5300.3
*****
*****
Validation loss decreased (10626.300781 --> 10600.603516). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11791.2 .. NELBO:
11791.27
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5310.9 .. NELBO: 5310.94
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11780.34 .. NELBO:
11780.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5334.17 .. NELBO: 5334.22
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11791.69 .. NELBO:
11791.79
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5351.04 .. NELBO: 5351.09
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11796.84 .. NELBO:
11796.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5353.97 .. NELBO: 5354.01
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11786.38 .. NELBO:
11786.46
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5348.25 .. NELBO: 5348.28
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05882039449393778, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=50, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=50, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=50, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 67.52 .. Rec_loss: 12263.8 .. NELBO:
12331.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.95 .. Rec_loss: 5443.33 .. NELBO: 5450.28
*****
*****
Validation loss decreased (inf --> 10900.553711). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.54 .. Rec_loss: 12246.36 .. NELBO:
12253.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5430.41 .. NELBO: 5430.82
*****
*****
Validation loss decreased (10900.553711 --> 10861.645508). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12204.43 .. NELBO:
12205.06
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 5406.47 .. NELBO: 5406.58
*****
*****
Validation loss decreased (10861.645508 --> 10813.145508). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 12131.16 .. NELBO:
12131.33
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5373.07 .. NELBO: 5373.11
*****
*****
Validation loss decreased (10813.145508 --> 10746.224609). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 12032.51 .. NELBO:
12032.59
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5336.65 .. NELBO: 5336.68
*****
*****
Validation loss decreased (10746.224609 --> 10673.373047). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11924.35 .. NELBO:
11924.42
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5308.42 .. NELBO: 5308.47
*****
*****
Validation loss decreased (10673.373047 --> 10616.940430). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11833.62 .. NELBO:
11833.73
*****

```



```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5300.49 .. NELBO: 5300.57
*****
*****
Validation loss decreased (10616.940430 --> 10601.147461). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.19 .. Rec_loss: 11785.96 .. NELBO:
11786.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5315.43 .. NELBO: 5315.55
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 11782.66 .. NELBO:
11782.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 5338.77 .. NELBO: 5338.89
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.24 .. Rec_loss: 11794.71 .. NELBO:
11794.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5352.51 .. NELBO: 5352.6
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 11795.35 .. NELBO:
11795.52
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5352.81 .. NELBO: 5352.87
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11782.13 .. NELBO:
11782.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5346.33 .. NELBO: 5346.38
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05882039449393778, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=50, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=50, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=50, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 67.0 .. Rec_loss: 12263.32 .. NELBO:
12330.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.09 .. Rec_loss: 5443.2 .. NELBO: 5450.29
*****
*****
Validation loss decreased (inf --> 10900.583008). Saving model ...
*****
*****

```

```

Epoch----->2 .. LR: 0.005 .. KL_theta: 7.56 .. Rec_loss: 12245.59 .. NELBO:
12253.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.33 .. Rec_loss: 5430.33 .. NELBO: 5430.66
*****
*****
Validation loss decreased (10900.583008 --> 10861.322266). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 12203.69 .. NELBO:
12204.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5406.52 .. NELBO: 5406.58
*****
*****
Validation loss decreased (10861.322266 --> 10813.164062). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12130.3 .. NELBO:
12130.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5373.41 .. NELBO: 5373.43
*****
*****
Validation loss decreased (10813.164062 --> 10746.858398). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12032.54 .. NELBO:
12032.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5337.24 .. NELBO: 5337.25
*****
*****
Validation loss decreased (10746.858398 --> 10674.512695). Saving model ...
*****
*****

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```
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11924.87 .. NELBO:
11924.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5308.96 .. NELBO: 5308.97
*****
*****
Validation loss decreased (10674.512695 --> 10617.948242). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11834.42 .. NELBO:
11834.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.54 .. NELBO: 5300.55
*****
*****
Validation loss decreased (10617.948242 --> 10601.094727). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11784.62 .. NELBO:
11784.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5314.84 .. NELBO: 5314.85
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11781.0 .. NELBO:
11781.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.19 .. NELBO: 5338.2
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
```

```

Epoch---->10 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11794.02 .. NELBO:
11794.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.4 .. NELBO: 5352.41
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11795.26 .. NELBO:
11795.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.03 .. NELBO: 5353.04
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11782.87 .. NELBO:
11782.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.59 .. NELBO: 5346.6
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 186
model: ETM(
  (t_drop): Dropout(p=0.0077686125291173596, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)

```

```

(logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 85.9 .. Rec_loss: 12264.02 .. NELBO:
12349.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.84 .. Rec_loss: 5443.86 .. NELBO: 5451.7
*****
*****
Validation loss decreased (inf --> 10903.404297). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.55 .. Rec_loss: 12247.63 .. NELBO:
12256.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5431.45 .. NELBO: 5431.91
*****
*****
Validation loss decreased (10903.404297 --> 10863.815430). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12207.26 .. NELBO:
12207.89
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.29 .. NELBO: 5408.36
*****
*****
Validation loss decreased (10863.815430 --> 10816.712891). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12136.42 .. NELBO:
12136.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.66 .. NELBO: 5375.68
*****
*****

```

```

*****
Validation loss decreased (10816.712891 --> 10751.374023). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12039.89 .. NELBO:
12039.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.45 .. NELBO: 5339.47
*****
*****
Validation loss decreased (10751.374023 --> 10678.933594). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11932.07 .. NELBO:
11932.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.37 .. NELBO: 5310.39
*****
*****
Validation loss decreased (10678.933594 --> 10620.782227). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11839.82 .. NELBO:
11839.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.52 .. NELBO: 5300.54
*****
*****
Validation loss decreased (10620.782227 --> 10601.083984). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.91 .. NELBO:
11787.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.58 .. NELBO: 5313.6
*****

```

```

*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.1 .. NELBO:
11781.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.8 .. NELBO: 5336.82
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.54 .. NELBO:
11793.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.81 .. NELBO: 5351.83
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.7 .. NELBO:
11795.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.14 .. NELBO: 5353.16
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.84 .. NELBO:
11783.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.9 .. NELBO: 5346.92
*****

```



```

*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0077686125291173596, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 91.16 .. Rec_loss: 12264.41 .. NELBO:
12355.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.48 .. Rec_loss: 5444.21 .. NELBO: 5452.69
*****
*****
Validation loss decreased (inf --> 10905.383789). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.99 .. Rec_loss: 12249.24 .. NELBO:
12258.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.61 .. NELBO: 5433.04
*****
*****
Validation loss decreased (10905.383789 --> 10866.064453). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12211.34 .. NELBO:
12211.94
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.47 .. NELBO: 5410.54
*****
*****
Validation loss decreased (10866.064453 --> 10821.088867). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12143.54 .. NELBO:
12143.65
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.66 .. NELBO: 5378.69
*****
*****
Validation loss decreased (10821.088867 --> 10757.363281). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12049.06 .. NELBO:
12049.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.52 .. NELBO: 5342.54
*****
*****
Validation loss decreased (10757.363281 --> 10685.085938). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11942.5 .. NELBO:
11942.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.24 .. NELBO: 5312.26
*****
*****
Validation loss decreased (10685.085938 --> 10624.507812). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11848.01 .. NELBO:
11848.05
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5299.98 .. NELB0: 5300.0
*****
*****
Validation loss decreased (10624.507812 --> 10599.997070). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.59 .. NELB0:
11791.63
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.89 .. NELB0: 5310.91
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.02 .. NELB0:
11780.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.05 .. NELB0: 5334.07
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.89 .. NELB0:
11791.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.75 .. NELB0: 5350.77
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.52 .. NELB0:
11796.56
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.64 .. NELBO: 5353.66
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.44 .. NELBO:
11785.48
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.04 .. NELBO: 5348.06
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.0077686125291173596, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=86, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=86, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=86, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 93.77 .. Rec_loss: 12264.38 .. NELBO:
12358.15
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.46 .. Rec_loss: 5444.29 .. NELBO: 5452.75
*****
*****
Validation loss decreased (inf --> 10905.504883). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.98 .. Rec_loss: 12249.18 .. NELBO:
12258.16

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5432.55 .. NELBO: 5432.98
*****
*****
Validation loss decreased (10905.504883 --> 10865.955078). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.62 .. Rec_loss: 12210.45 .. NELBO:
12211.07
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.06 .. NELBO: 5410.14
*****
*****
Validation loss decreased (10865.955078 --> 10820.280273). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12141.23 .. NELBO:
12141.35
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.77 .. NELBO: 5377.8
*****
*****
Validation loss decreased (10820.280273 --> 10755.608398). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12044.82 .. NELBO:
12044.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.4 .. NELBO: 5341.42
*****
*****
Validation loss decreased (10755.608398 --> 10682.834961). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11937.82 .. NELBO:
11937.86

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.55 .. NELBO: 5311.57
*****
*****
Validation loss decreased (10682.834961 --> 10623.150391). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11843.43 .. NELBO:
11843.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.56 .. NELBO: 5300.58
*****
*****
Validation loss decreased (10623.150391 --> 10601.151367). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.17 .. NELBO:
11789.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.77 .. NELBO: 5312.79
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.42 .. NELBO:
11780.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.07 .. NELBO: 5336.09
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.13 .. NELBO:
11793.17

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.76 .. NELBO: 5351.78
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.95 .. NELBO:
11795.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.67 .. NELBO: 5353.69
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.73 .. NELBO:
11784.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.6 .. NELBO: 5347.62
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 187
model: ETM(
  (t_drop): Dropout(p=0.06105472193266106, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=61, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=61, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=61, bias=True)
)

```

```

*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 76.97 .. Rec_loss: 12264.35 .. NELBO:
12341.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.71 .. Rec_loss: 5444.0 .. NELBO: 5451.71
*****
*****
Validation loss decreased (inf --> 10903.416992). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.21 .. Rec_loss: 12248.91 .. NELBO:
12257.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5432.44 .. NELBO: 5432.83
*****
*****
Validation loss decreased (10903.416992 --> 10865.654297). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 12210.57 .. NELBO:
12211.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.0 .. NELBO: 5410.07
*****
*****
Validation loss decreased (10865.654297 --> 10820.123047). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12142.04 .. NELBO:
12142.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.85 .. NELBO: 5377.87
*****
*****
Validation loss decreased (10820.123047 --> 10755.744141). Saving model ...

```



```
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12046.97 .. NELBO:
12047.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5341.54 .. NELBO: 5341.55
*****
*****
Validation loss decreased (10755.744141 --> 10683.100586). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11939.75 .. NELBO:
11939.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.46 .. NELBO: 5311.47
*****
*****
Validation loss decreased (10683.100586 --> 10622.941406). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11845.28 .. NELBO:
11845.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.95 .. NELBO: 5299.96
*****
*****
Validation loss decreased (10622.941406 --> 10599.921875). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.19 .. NELBO:
11790.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.73 .. NELBO: 5311.74
*****
*****
EarlyStopping counter: 1 out of 5
```

```

*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.05 .. NELBO:
11781.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.06 .. NELBO: 5335.07
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.26 .. NELBO:
11793.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.14 .. NELBO: 5351.15
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.1 .. NELBO:
11796.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.44 .. NELBO: 5353.45
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.2 .. NELBO:
11785.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.57 .. NELBO: 5347.58
*****
*****
EarlyStopping counter: 5 out of 5

```

```

Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06105472193266106, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=61, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=61, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=61, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 76.55 .. Rec_loss: 12264.0 .. NELBO:
12340.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.61 .. Rec_loss: 5443.63 .. NELBO: 5451.24
*****
*****
Validation loss decreased (inf --> 10902.488281). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.19 .. Rec_loss: 12246.59 .. NELBO:
12254.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5430.64 .. NELBO: 5431.1
*****
*****
Validation loss decreased (10902.488281 --> 10862.198242). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 12205.05 .. NELBO:
12205.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5406.96 .. NELBO: 5407.06

```

```

*****
*****
Validation loss decreased (10862.198242 --> 10814.111328). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 12132.31 .. NELBO:
12132.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5373.86 .. NELBO: 5373.9
*****
*****
Validation loss decreased (10814.111328 --> 10747.799805). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 12034.29 .. NELBO:
12034.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5337.6 .. NELBO: 5337.63
*****
*****
Validation loss decreased (10747.799805 --> 10675.257812). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 11927.08 .. NELBO:
11927.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5309.13 .. NELBO: 5309.17
*****
*****
Validation loss decreased (10675.257812 --> 10618.342773). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 11835.79 .. NELBO:
11835.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5300.4 .. NELBO: 5300.45

```

```

*****
*****
Validation loss decreased (10618.342773 --> 10600.900391). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 11787.06 .. NELBO:
11787.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5314.26 .. NELBO: 5314.32
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11781.67 .. NELBO:
11781.8
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5337.36 .. NELBO: 5337.42
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 11793.85 .. NELBO:
11793.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5351.75 .. NELBO: 5351.81
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 11795.12 .. NELBO:
11795.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5352.7 .. NELBO: 5352.75

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*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11782.77 .. NELBO:
11782.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5346.43 .. NELBO: 5346.47
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06105472193266106, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=61, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=61, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=61, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 77.04 .. Rec_loss: 12264.11 .. NELBO:
12341.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.16 .. Rec_loss: 5443.97 .. NELBO: 5451.13
*****
*****
Validation loss decreased (inf --> 10902.262695). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.75 .. Rec_loss: 12248.45 .. NELBO:
12256.2
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5432.08 .. NELBO: 5432.49
*****
*****
Validation loss decreased (10902.262695 --> 10864.986328). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12209.13 .. NELBO:
12209.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.53 .. NELBO: 5409.6
*****
*****
Validation loss decreased (10864.986328 --> 10819.211914). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12140.53 .. NELBO:
12140.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.3 .. NELBO: 5377.32
*****
*****
Validation loss decreased (10819.211914 --> 10754.637695). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12044.29 .. NELBO:
12044.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5341.05 .. NELBO: 5341.06
*****
*****
Validation loss decreased (10754.637695 --> 10682.129883). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11936.5 .. NELBO:
11936.53
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.31 .. NELBO: 5311.32
*****
*****
Validation loss decreased (10682.129883 --> 10622.649414). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.79 .. NELBO:
11842.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.39 .. NELBO: 5300.4
*****
*****
Validation loss decreased (10622.649414 --> 10600.798828). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11788.75 .. NELBO:
11788.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.7 .. NELBO: 5312.71
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.55 .. NELBO:
11780.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5336.1 .. NELBO: 5336.11
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.74 .. NELBO:
11792.77
*****
*****

```



```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5351.88 .. NELBO: 5351.89
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.36 .. NELBO:
11796.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.72 .. NELBO: 5353.73
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11784.51 .. NELBO:
11784.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.58 .. NELBO: 5347.59
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 188
model: ETM(
  (t_drop): Dropout(p=0.04922492985587084, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=94, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=94, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=94, bias=True)
)
*****
*****

```

```

Epoch----->1 .. LR: 0.005 .. KL_theta: 97.62 .. Rec_loss: 12264.26 .. NELBO:
12361.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.57 .. Rec_loss: 5444.06 .. NELBO: 5452.63
*****
*****
Validation loss decreased (inf --> 10905.252930). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 9.17 .. Rec_loss: 12248.44 .. NELBO:
12257.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5431.96 .. NELBO: 5432.42
*****
*****
Validation loss decreased (10905.252930 --> 10864.838867). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12208.87 .. NELBO:
12209.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.23 .. NELBO: 5409.31
*****
*****
Validation loss decreased (10864.838867 --> 10818.624023). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12139.34 .. NELBO:
12139.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.88 .. NELBO: 5376.91
*****
*****
Validation loss decreased (10818.624023 --> 10753.810547). Saving model ...
*****
*****

```

```
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12043.66 .. NELB0:
12043.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.65 .. NELB0: 5340.67
*****
*****
Validation loss decreased (10753.810547 --> 10681.340820). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.4 .. NELB0:
11936.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.12 .. NELB0: 5311.14
*****
*****
Validation loss decreased (10681.340820 --> 10622.273438). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11842.69 .. NELB0:
11842.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.42 .. NELB0: 5300.44
*****
*****
Validation loss decreased (10622.273438 --> 10600.879883). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.48 .. NELB0:
11789.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.68 .. NELB0: 5312.7
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
```

```
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.27 .. NELBO:
11781.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.72 .. NELBO: 5335.74
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.89 .. NELBO:
11792.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.17 .. NELBO: 5351.19
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.55 .. NELBO:
11795.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.08 .. NELBO: 5353.1
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.81 .. NELBO:
11783.85
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.2 .. NELBO: 5347.22
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
```

```

(t_drop): Dropout(p=0.04922492985587084, inplace=False)
(theta_act): Sigmoid()
(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=94, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=94, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=94, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 95.92 .. Rec_loss: 12264.47 .. NELBO:
12360.39
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.46 .. Rec_loss: 5444.81 .. NELBO: 5453.27
*****
*****
Validation loss decreased (inf --> 10906.542969). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.14 .. Rec_loss: 12250.76 .. NELBO:
12259.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5434.03 .. NELBO: 5434.49
*****
*****
Validation loss decreased (10906.542969 --> 10868.978516). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12215.37 .. NELBO:
12216.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5413.07 .. NELBO: 5413.15
*****
*****

```

```

Validation loss decreased (10868.978516 --> 10826.294922). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12150.48 .. NELBO:
12150.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5382.18 .. NELBO: 5382.21
*****
*****
Validation loss decreased (10826.294922 --> 10764.412109). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12058.1 .. NELBO:
12058.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.21 .. NELBO: 5346.23
*****
*****
Validation loss decreased (10764.412109 --> 10692.469727). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11951.65 .. NELBO:
11951.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.95 .. NELBO: 5314.97
*****
*****
Validation loss decreased (10692.469727 --> 10629.936523). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11854.25 .. NELBO:
11854.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.74 .. NELBO: 5300.76
*****
*****

```

```

Validation loss decreased (10629.936523 --> 10601.512695). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.66 .. NELBO:
11793.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.84 .. NELBO: 5309.86
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.71 .. NELBO:
11779.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5332.7 .. NELBO: 5332.72
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.71 .. NELBO:
11791.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.23 .. NELBO: 5350.25
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.39 .. NELBO:
11796.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.94 .. NELBO: 5353.96
*****
*****

```

```

EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.43 .. NELBO:
11786.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.58 .. NELBO: 5348.6
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04922492985587084, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=94, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=94, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=94, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 93.96 .. Rec_loss: 12264.45 .. NELBO:
12358.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.33 .. Rec_loss: 5444.55 .. NELBO: 5452.88
*****
*****
Validation loss decreased (inf --> 10905.757812). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.95 .. Rec_loss: 12250.34 .. NELBO:
12259.29
*****
*****
*****
*****

```



```

VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5433.33 .. NELBO: 5433.77
*****
*****
Validation loss decreased (10905.757812 --> 10867.533203). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12213.3 .. NELBO:
12213.94
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5411.58 .. NELBO: 5411.66
*****
*****
Validation loss decreased (10867.533203 --> 10823.327148). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12146.23 .. NELBO:
12146.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.0 .. NELBO: 5380.03
*****
*****
Validation loss decreased (10823.327148 --> 10760.054688). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12051.92 .. NELBO:
12051.98
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.77 .. NELBO: 5343.79
*****
*****
Validation loss decreased (10760.054688 --> 10687.586914). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11945.18 .. NELBO:
11945.23
*****
*****
*****

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```
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.12 .. NELBO: 5313.14
*****
*****
Validation loss decreased (10687.586914 --> 10626.279297). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11849.72 .. NELBO:
11849.76
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.41 .. NELBO: 5300.43
*****
*****
Validation loss decreased (10626.279297 --> 10600.855469). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.08 .. NELBO:
11792.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.03 .. NELBO: 5311.05
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.27 .. NELBO:
11780.31
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.11 .. NELBO: 5334.13
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.99 .. NELBO:
11792.03
*****
*****
*****
*****
```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.78 .. NELBO: 5350.8
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.37 .. NELBO:
11796.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.65 .. NELBO: 5353.67
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.53 .. NELBO:
11785.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.98 .. NELBO: 5348.0
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 189
model: ETM(
  (t_drop): Dropout(p=0.05660542375183336, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch----->1 .. LR: 0.005 .. KL_theta: 104.23 .. Rec_loss: 12264.53 .. NELBO:
12368.76

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.59 .. Rec_loss: 5444.14 .. NELBO: 5452.73
*****
*****
Validation loss decreased (inf --> 10905.461914). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.38 .. Rec_loss: 12248.8 .. NELBO:
12258.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.54 .. Rec_loss: 5432.32 .. NELBO: 5432.86
*****
*****
Validation loss decreased (10905.461914 --> 10865.726562). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.78 .. Rec_loss: 12210.09 .. NELBO:
12210.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.64 .. NELBO: 5409.73
*****
*****
Validation loss decreased (10865.726562 --> 10819.458008). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12140.57 .. NELBO:
12140.71
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.25 .. NELBO: 5377.28
*****
*****
Validation loss decreased (10819.458008 --> 10754.555664). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12044.66 .. NELBO:
12044.72

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.86 .. NELBO: 5340.88
*****
*****
Validation loss decreased (10754.555664 --> 10681.769531). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11937.24 .. NELBO:
11937.28
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.06 .. NELBO: 5311.08
*****
*****
Validation loss decreased (10681.769531 --> 10622.152344). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11843.51 .. NELBO:
11843.55
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.1 .. NELBO: 5300.12
*****
*****
Validation loss decreased (10622.152344 --> 10600.231445). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.79 .. NELBO:
11789.83
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.33 .. NELBO: 5312.35
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.87 .. NELBO:
11780.91

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.68 .. NELBO: 5335.7
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.17 .. NELBO:
11793.21
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.46 .. NELBO: 5351.48
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.14 .. NELBO:
11796.18
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.45 .. NELBO: 5353.47
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.57 .. NELBO:
11784.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.43 .. NELBO: 5347.45
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05660542375183336, inplace=False)
  (theta_act): Sigmoid()

```

```

(rho): Linear(in_features=300, out_features=13198, bias=False)
(alphas): Linear(in_features=300, out_features=92, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 94.6 .. Rec_loss: 12264.45 .. NELBO:
12359.05
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.24 .. Rec_loss: 5444.32 .. NELBO: 5452.56
*****
*****
Validation loss decreased (inf --> 10905.117188). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.88 .. Rec_loss: 12249.66 .. NELBO:
12258.54
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5433.02 .. NELBO: 5433.46
*****
*****
Validation loss decreased (10905.117188 --> 10866.920898). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.64 .. Rec_loss: 12212.19 .. NELBO:
12212.83
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.93 .. NELBO: 5411.01
*****
*****
Validation loss decreased (10866.920898 --> 10822.010742). Saving model ...
*****

```

```

*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12144.11 .. NELBO:
12144.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.92 .. NELBO: 5378.95
*****
*****
Validation loss decreased (10822.010742 --> 10757.907227). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12048.94 .. NELBO:
12048.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.51 .. NELBO: 5342.53
*****
*****
Validation loss decreased (10757.907227 --> 10685.057617). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11940.75 .. NELBO:
11940.79
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.17 .. NELBO: 5312.19
*****
*****
Validation loss decreased (10685.057617 --> 10624.375000). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11846.21 .. NELBO:
11846.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.29 .. NELBO: 5300.31
*****
*****
Validation loss decreased (10624.375000 --> 10600.625000). Saving model ...
*****

```



```

*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.9 .. NELBO:
11789.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.76 .. NELBO: 5311.78
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.09 .. NELBO:
11780.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.06 .. NELBO: 5335.08
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.5 .. NELBO:
11792.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.4 .. NELBO: 5351.42
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.32 .. NELBO:
11796.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.86 .. NELBO: 5353.88
*****
*****
EarlyStopping counter: 4 out of 5
*****

```

```

*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.15 .. NELBO:
11785.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.99 .. NELBO: 5348.01
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05660542375183336, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=92, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=92, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=92, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 81.42 .. Rec_loss: 12264.24 .. NELBO:
12345.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.27 .. Rec_loss: 5444.24 .. NELBO: 5451.51
*****
*****
Validation loss decreased (inf --> 10903.023438). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.88 .. Rec_loss: 12249.22 .. NELBO:
12257.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5432.46 .. NELBO: 5432.87
*****

```

```

*****
Validation loss decreased (10903.023438 --> 10865.737305). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12210.47 .. NELBO:
12211.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.08 .. NELBO: 5410.15
*****
*****
Validation loss decreased (10865.737305 --> 10820.307617). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12141.29 .. NELBO:
12141.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.08 .. NELBO: 5378.11
*****
*****
Validation loss decreased (10820.307617 --> 10756.218750). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12046.26 .. NELBO:
12046.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.96 .. NELBO: 5341.98
*****
*****
Validation loss decreased (10756.218750 --> 10683.955078). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11939.67 .. NELBO:
11939.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.06 .. NELBO: 5312.08
*****

```

```

*****
Validation loss decreased (10683.955078 --> 10624.151367). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11845.59 .. NELBO:
11845.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.56 .. NELBO: 5300.58
*****
*****
Validation loss decreased (10624.151367 --> 10601.152344). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.1 .. NELBO:
11790.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.06 .. NELBO: 5312.08
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.72 .. NELBO:
11780.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.98 .. NELBO: 5335.0
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.6 .. NELBO:
11792.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.83 .. NELBO: 5350.85
*****

```

```

*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.6 .. NELBO:
11795.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.18 .. NELBO: 5353.2
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.79 .. NELBO:
11784.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.45 .. NELBO: 5347.47
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 190
model: ETM(
  (t_drop): Dropout(p=0.026212324303325155, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=98, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=98, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=98, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 89.01 .. Rec_loss: 12264.45 .. NELBO:
12353.46
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.19 .. Rec_loss: 5444.59 .. NELBO: 5452.78
*****
*****
Validation loss decreased (inf --> 10905.551758). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.81 .. Rec_loss: 12249.78 .. NELBO:
12258.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5432.97 .. NELBO: 5433.38
*****
*****
Validation loss decreased (10905.551758 --> 10866.757812). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.57 .. Rec_loss: 12211.67 .. NELBO:
12212.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.71 .. NELBO: 5410.78
*****
*****
Validation loss decreased (10866.757812 --> 10821.562500). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12142.97 .. NELBO:
12143.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.65 .. NELBO: 5378.68
*****
*****
Validation loss decreased (10821.562500 --> 10757.365234). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12047.81 .. NELBO:
12047.86
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5342.32 .. NELBO: 5342.34
*****
*****
Validation loss decreased (10757.365234 --> 10684.690430). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11940.24 .. NELBO:
11940.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.25 .. NELBO: 5312.27
*****
*****
Validation loss decreased (10684.690430 --> 10624.532227). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11845.62 .. NELBO:
11845.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.76 .. NELBO: 5300.78
*****
*****
Validation loss decreased (10624.532227 --> 10601.567383). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.57 .. NELBO:
11790.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.47 .. NELBO: 5312.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.09 .. NELBO:
11781.13
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.57 .. NELBO: 5335.59
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.23 .. NELBO:
11793.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.3 .. NELBO: 5351.32
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.05 .. NELBO:
11796.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.28 .. NELBO: 5353.3
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.13 .. NELBO:
11785.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.22 .. NELBO: 5347.24
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.026212324303325155, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=98, bias=False)

```



```

(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Sigmoid()
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=98, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=98, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 96.31 .. Rec_loss: 12264.01 .. NELB0:
12360.32
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.95 .. Rec_loss: 5443.97 .. NELB0: 5451.92
*****
*****
Validation loss decreased (inf --> 10903.835938). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.57 .. Rec_loss: 12248.18 .. NELB0:
12256.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5432.1 .. NELB0: 5432.63
*****
*****
Validation loss decreased (10903.835938 --> 10865.267578). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 12209.11 .. NELB0:
12209.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5409.47 .. NELB0: 5409.56
*****
*****
Validation loss decreased (10865.267578 --> 10819.111328). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12139.63 .. NELB0:

```

```
12139.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.28 .. NELBO: 5377.31
*****
*****
Validation loss decreased (10819.111328 --> 10754.618164). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12043.83 .. NELBO:
12043.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.11 .. NELBO: 5341.13
*****
*****
Validation loss decreased (10754.618164 --> 10682.259766). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.57 .. NELBO:
11936.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.44 .. NELBO: 5311.46
*****
*****
Validation loss decreased (10682.259766 --> 10622.916016). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11843.0 .. NELBO:
11843.04
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.57 .. NELBO: 5300.59
*****
*****
Validation loss decreased (10622.916016 --> 10601.174805). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.84 .. NELBO:
```

```
11788.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.87 .. NELBO: 5312.89
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.57 .. NELBO:
11780.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.16 .. NELBO: 5336.18
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.23 .. NELBO:
11793.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.71 .. NELBO: 5351.73
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.0 .. NELBO:
11796.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.45 .. NELBO: 5353.47
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.56 .. NELBO:
```

```

11784.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.32 .. NELBO: 5347.34
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.026212324303325155, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=98, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=98, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=98, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 94.85 .. Rec_loss: 12264.37 .. NELBO:
12359.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.09 .. Rec_loss: 5444.4 .. NELBO: 5452.49
*****
*****
Validation loss decreased (inf --> 10904.979492). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.7 .. Rec_loss: 12249.49 .. NELBO:
12258.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5432.68 .. NELBO: 5433.14
*****
*****
Validation loss decreased (10904.979492 --> 10866.294922). Saving model ...

```

```

*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12211.21 .. NELBO:
12211.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5410.43 .. NELBO: 5410.51
*****
*****
Validation loss decreased (10866.294922 --> 10821.017578). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12143.52 .. NELBO:
12143.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5378.29 .. NELBO: 5378.32
*****
*****
Validation loss decreased (10821.017578 --> 10756.642578). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12047.66 .. NELBO:
12047.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.85 .. NELBO: 5341.87
*****
*****
Validation loss decreased (10756.642578 --> 10683.756836). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11940.08 .. NELBO:
11940.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.67 .. NELBO: 5311.69
*****
*****
Validation loss decreased (10683.756836 --> 10623.379883). Saving model ...

```

```

*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11845.47 .. NELBO:
11845.51
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.18 .. NELBO: 5300.2
*****
*****
Validation loss decreased (10623.379883 --> 10600.394531). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.95 .. NELBO:
11789.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.1 .. NELBO: 5312.12
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.96 .. NELBO:
11781.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.52 .. NELBO: 5335.54
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.96 .. NELBO:
11793.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.53 .. NELBO: 5351.55
*****
*****
EarlyStopping counter: 3 out of 5

```

```

*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.83 .. NELBO:
11796.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.61 .. NELBO: 5353.63
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.94 .. NELBO:
11784.98
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.59 .. NELBO: 5347.61
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 191
model: ETM(
  (t_drop): Dropout(p=0.06402412488516619, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=78, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=78, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=78, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.88 .. Rec_loss: 12264.09 .. NELBO:
12352.97
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 8.17 .. Rec_loss: 5443.72 .. NELBO: 5451.89
*****
*****
Validation loss decreased (inf --> 10903.790039). Saving model ...
*****
*****
Epoch----->2 .. LR: 0.005 .. KL_theta: 8.85 .. Rec_loss: 12247.12 .. NELBO:
12255.97
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5430.81 .. NELBO: 5431.24
*****
*****
Validation loss decreased (10903.790039 --> 10862.474609). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12205.32 .. NELBO:
12205.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5407.06 .. NELBO: 5407.14
*****
*****
Validation loss decreased (10862.474609 --> 10814.280273). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12132.61 .. NELBO:
12132.73
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5373.95 .. NELBO: 5373.98
*****
*****
Validation loss decreased (10814.280273 --> 10747.955078). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12034.87 .. NELBO:
12034.92
*****
*****
*****

```



```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.68 .. NELBO: 5337.7
*****
*****
Validation loss decreased (10747.955078 --> 10675.410156). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11927.39 .. NELBO:
11927.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.24 .. NELBO: 5309.26
*****
*****
Validation loss decreased (10675.410156 --> 10618.524414). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11836.36 .. NELBO:
11836.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.59 .. NELBO: 5300.61
*****
*****
Validation loss decreased (10618.524414 --> 10601.212891). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.42 .. NELBO:
11787.46
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.6 .. NELBO: 5314.62
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.14 .. NELBO:
11782.18
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.72 .. NELBO: 5337.74
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.06 .. NELBO:
11794.1
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.93 .. NELBO: 5351.95
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.45 .. NELBO:
11795.49
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.68 .. NELBO: 5352.7
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch----->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.87 .. NELBO:
11782.91
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.33 .. NELBO: 5346.35
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06402412488516619, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=78, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)

```

```

    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=78, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=78, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 76.91 .. Rec_loss: 12264.2 .. NELBO:
12341.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.68 .. Rec_loss: 5444.08 .. NELBO: 5451.76
*****
*****
Validation loss decreased (inf --> 10903.519531). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.33 .. Rec_loss: 12248.59 .. NELBO:
12256.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5431.97 .. NELBO: 5432.32
*****
*****
Validation loss decreased (10903.519531 --> 10864.646484). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.5 .. Rec_loss: 12208.47 .. NELBO:
12208.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5408.6 .. NELBO: 5408.66
*****
*****
Validation loss decreased (10864.646484 --> 10817.332031). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12136.54 .. NELBO:
12136.64
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.52 .. NELBO: 5375.55
*****
*****
Validation loss decreased (10817.332031 --> 10751.088867). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12038.82 .. NELBO:
12038.87
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.93 .. NELBO: 5338.95
*****
*****
Validation loss decreased (10751.088867 --> 10677.890625). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11930.5 .. NELBO:
11930.54
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.84 .. NELBO: 5309.86
*****
*****
Validation loss decreased (10677.890625 --> 10619.722656). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11837.57 .. NELBO:
11837.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.49 .. NELBO: 5300.51
*****
*****
Validation loss decreased (10619.722656 --> 10601.013672). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.55 .. NELBO:
11787.59
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.12 .. NELBO: 5314.14
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.92 .. NELBO:
11781.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.35 .. NELBO: 5337.37
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.14 .. NELBO:
11794.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.9 .. NELBO: 5351.92
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.61 .. NELBO:
11795.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.84 .. NELBO: 5352.86
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.15 .. NELBO:
11783.19
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.51 .. NELBO: 5346.53
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06402412488516619, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=78, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=78, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=78, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 90.52 .. Rec_loss: 12263.97 .. NELBO:
12354.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.87 .. Rec_loss: 5443.86 .. NELBO: 5451.73
*****
*****
Validation loss decreased (inf --> 10903.450195). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.43 .. Rec_loss: 12247.97 .. NELBO:
12256.4
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.43 .. Rec_loss: 5431.69 .. NELBO: 5432.12
*****
*****
Validation loss decreased (10903.450195 --> 10864.233398). Saving model ...
*****
*****

```

```

Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12207.79 .. NELBO:
12208.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.63 .. NELBO: 5408.71
*****
*****
Validation loss decreased (10864.233398 --> 10817.435547). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12137.35 .. NELBO:
12137.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.89 .. NELBO: 5375.92
*****
*****
Validation loss decreased (10817.435547 --> 10751.836914). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12039.9 .. NELBO:
12039.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.46 .. NELBO: 5339.48
*****
*****
Validation loss decreased (10751.836914 --> 10678.957031). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11932.04 .. NELBO:
11932.08
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.24 .. NELBO: 5310.26
*****
*****
Validation loss decreased (10678.957031 --> 10620.505859). Saving model ...
*****
*****

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```

Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11839.32 .. NELBO:
11839.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.5 .. NELBO: 5300.52
*****
*****
Validation loss decreased (10620.505859 --> 10601.025391). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.42 .. NELBO:
11787.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.89 .. NELBO: 5313.91
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.32 .. NELBO:
11781.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.31 .. NELBO: 5337.33
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.12 .. NELBO:
11794.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.18 .. NELBO: 5352.2
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****

```



```

Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.9 .. NELBO:
11795.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.29 .. NELBO: 5353.31
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.83 .. NELBO:
11783.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.92 .. NELBO: 5346.94
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 192
model: ETM(
  (t_drop): Dropout(p=0.057137733846997996, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=60, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=60, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=60, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 79.38 .. Rec_loss: 12263.9 .. NELBO:
12343.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.05 .. Rec_loss: 5443.68 .. NELBO: 5451.73
*****

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```

*****
Validation loss decreased (inf --> 10903.445312). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.63 .. Rec_loss: 12247.53 .. NELBO:
12256.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5431.29 .. NELBO: 5431.71
*****
*****
Validation loss decreased (10903.445312 --> 10863.424805). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.6 .. Rec_loss: 12207.16 .. NELBO:
12207.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.93 .. NELBO: 5408.0
*****
*****
Validation loss decreased (10863.424805 --> 10816.007812). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12135.18 .. NELBO:
12135.29
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5375.09 .. NELBO: 5375.11
*****
*****
Validation loss decreased (10816.007812 --> 10750.220703). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12038.24 .. NELBO:
12038.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5338.74 .. NELBO: 5338.75
*****

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```

*****
Validation loss decreased (10750.220703 --> 10677.506836). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11931.03 .. NELBO:
11931.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5309.71 .. NELBO: 5309.72
*****
*****
Validation loss decreased (10677.506836 --> 10619.438477). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11838.85 .. NELBO:
11838.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.16 .. NELBO: 5300.17
*****
*****
Validation loss decreased (10619.438477 --> 10600.339844). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.24 .. NELBO:
11787.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.65 .. NELBO: 5313.67
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.2 .. NELBO:
11781.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.1 .. NELBO: 5337.12
*****

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```

*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.31 .. NELBO:
11793.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.06 .. NELBO: 5352.08
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.19 .. NELBO:
11796.22
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.28 .. NELBO: 5353.3
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.33 .. NELBO:
11783.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.03 .. NELBO: 5347.04
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.057137733846997996, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=60, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
  )
)

```

```

    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=60, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=60, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 74.3 .. Rec_loss: 12263.98 .. NELBO:
12338.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.25 .. Rec_loss: 5443.65 .. NELBO: 5450.9
*****
*****
Validation loss decreased (inf --> 10901.801758). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.94 .. Rec_loss: 12247.41 .. NELBO:
12255.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5431.57 .. NELBO: 5432.05
*****
*****
Validation loss decreased (10901.801758 --> 10864.097656). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 12208.51 .. NELBO:
12209.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.7 .. NELBO: 5408.78
*****
*****
Validation loss decreased (10864.097656 --> 10817.573242). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12138.02 .. NELBO:
12138.14
*****
*****
*****

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*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5376.4 .. NELBO: 5376.42
*****
*****
Validation loss decreased (10817.573242 --> 10752.852539). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12043.18 .. NELBO:
12043.22
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.32 .. NELBO: 5340.34
*****
*****
Validation loss decreased (10752.852539 --> 10680.664062). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11935.92 .. NELBO:
11935.95
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.85 .. NELBO: 5310.87
*****
*****
Validation loss decreased (10680.664062 --> 10621.725586). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11842.67 .. NELBO:
11842.7
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.07 .. NELBO: 5300.09
*****
*****
Validation loss decreased (10621.725586 --> 10600.181641). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11789.51 .. NELBO:
11789.54
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.27 .. NELBO: 5312.29
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11781.29 .. NELBO:
11781.32
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.43 .. NELBO: 5335.45
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.78 .. NELBO:
11792.82
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.09 .. NELBO: 5351.11
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.33 .. NELBO:
11795.37
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.1 .. NELBO: 5353.12
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11784.18 .. NELBO:
11784.21
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.19 .. NELBO: 5347.21
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.057137733846997996, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=60, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=60, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=60, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 67.77 .. Rec_loss: 12264.15 .. NELBO:
12331.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 6.63 .. Rec_loss: 5443.79 .. NELBO: 5450.42
*****
*****
Validation loss decreased (inf --> 10900.842773). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.24 .. Rec_loss: 12247.85 .. NELBO:
12255.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.37 .. Rec_loss: 5431.83 .. NELBO: 5432.2
*****
*****
Validation loss decreased (10900.842773 --> 10864.408203). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 12209.16 .. NELBO:
12209.69

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5409.43 .. NELBO: 5409.49
*****
*****
Validation loss decreased (10864.408203 --> 10818.972656). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12141.02 .. NELBO:
12141.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5377.66 .. NELBO: 5377.68
*****
*****
Validation loss decreased (10818.972656 --> 10755.365234). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12046.61 .. NELBO:
12046.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5341.81 .. NELBO: 5341.82
*****
*****
Validation loss decreased (10755.365234 --> 10683.654297). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11940.56 .. NELBO:
11940.59
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.83 .. NELBO: 5311.84
*****
*****
Validation loss decreased (10683.654297 --> 10623.693359). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11846.33 .. NELBO:
11846.36

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5299.82 .. NELBO: 5299.83
*****
*****
Validation loss decreased (10623.693359 --> 10599.666016). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.67 .. NELBO:
11790.7
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5310.85 .. NELBO: 5310.86
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.23 .. NELBO:
11780.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5333.95 .. NELBO: 5333.96
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11791.87 .. NELBO:
11791.9
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5350.5 .. NELBO: 5350.51
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.22 .. NELBO:
11796.25

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.34 .. NELBO: 5353.35
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.23 .. NELBO:
11785.26
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.78 .. NELBO: 5347.79
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 193
model: ETM(
  (t_drop): Dropout(p=0.05644544163371079, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 78.05 .. Rec_loss: 12264.01 .. NELBO:
12342.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.2 .. Rec_loss: 5443.82 .. NELBO: 5451.02
*****
*****
Validation loss decreased (inf --> 10902.037109). Saving model ...

```

```

*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.85 .. Rec_loss: 12247.79 .. NELBO:
12255.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.39 .. Rec_loss: 5431.51 .. NELBO: 5431.9
*****
*****
Validation loss decreased (10902.037109 --> 10863.799805). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.56 .. Rec_loss: 12207.02 .. NELBO:
12207.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5408.04 .. NELBO: 5408.11
*****
*****
Validation loss decreased (10863.799805 --> 10816.222656). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12135.13 .. NELBO:
12135.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.04 .. NELBO: 5375.07
*****
*****
Validation loss decreased (10816.222656 --> 10750.137695). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12036.82 .. NELBO:
12036.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.69 .. NELBO: 5338.71
*****
*****
Validation loss decreased (10750.137695 --> 10677.426758). Saving model ...

```

```

*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11929.93 .. NELBO:
11929.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.93 .. NELBO: 5309.95
*****
*****
Validation loss decreased (10677.426758 --> 10619.900391). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11837.89 .. NELBO:
11837.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.81 .. NELBO: 5300.83
*****
*****
Validation loss decreased (10619.900391 --> 10601.664062). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.79 .. NELBO:
11787.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.47 .. NELBO: 5314.49
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.89 .. NELBO:
11781.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.59 .. NELBO: 5337.61
*****
*****
EarlyStopping counter: 2 out of 5

```

```

*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.41 .. NELBO:
11794.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.06 .. NELBO: 5352.08
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.24 .. NELBO:
11796.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.98 .. NELBO: 5353.0
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.74 .. NELBO:
11783.78
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.57 .. NELBO: 5346.59
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05644544163371079, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
)

```

```

(mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 84.76 .. Rec_loss: 12264.04 .. NELBO:
12348.8
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.9 .. Rec_loss: 5443.91 .. NELBO: 5451.81
*****
*****
Validation loss decreased (inf --> 10903.617188). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.55 .. Rec_loss: 12247.95 .. NELBO:
12256.5
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5431.59 .. NELBO: 5432.01
*****
*****
Validation loss decreased (10903.617188 --> 10864.017578). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.61 .. Rec_loss: 12207.85 .. NELBO:
12208.46
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.4 .. NELBO: 5408.48
*****
*****
Validation loss decreased (10864.017578 --> 10816.955078). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12136.32 .. NELBO:
12136.45
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5375.41 .. NELBO: 5375.44

```

```

*****
*****
Validation loss decreased (10816.955078 --> 10750.882812). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12038.71 .. NELBO:
12038.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.8 .. NELBO: 5338.82
*****
*****
Validation loss decreased (10750.882812 --> 10677.643555). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11930.18 .. NELBO:
11930.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.68 .. NELBO: 5309.7
*****
*****
Validation loss decreased (10677.643555 --> 10619.410156). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11837.95 .. NELBO:
11837.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.42 .. NELBO: 5300.44
*****
*****
Validation loss decreased (10619.410156 --> 10600.890625). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.14 .. NELBO:
11787.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.33 .. NELBO: 5314.35

```



```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.91 .. NELBO:
11781.95
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.8 .. NELBO: 5337.82
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.45 .. NELBO:
11794.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.38 .. NELBO: 5352.4
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.45 .. NELBO:
11795.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.21 .. NELBO: 5353.23
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11782.72 .. NELBO:
11782.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.75 .. NELBO: 5346.77

```

```

*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.05644544163371079, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=85, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=85, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=85, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 82.67 .. Rec_loss: 12264.63 .. NELBO:
12347.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.48 .. Rec_loss: 5444.4 .. NELBO: 5451.88
*****
*****
Validation loss decreased (inf --> 10903.746094). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.24 .. Rec_loss: 12250.0 .. NELBO:
12258.24
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5432.69 .. NELBO: 5433.14
*****
*****
Validation loss decreased (10903.746094 --> 10866.278320). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12211.77 .. NELBO:
12212.4
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5410.15 .. NELBO: 5410.22
*****
*****
Validation loss decreased (10866.278320 --> 10820.434570). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12142.77 .. NELBO:
12142.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.74 .. NELBO: 5377.77
*****
*****
Validation loss decreased (10820.434570 --> 10755.537109). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12046.88 .. NELBO:
12046.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.22 .. NELBO: 5341.24
*****
*****
Validation loss decreased (10755.537109 --> 10682.476562). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11938.23 .. NELBO:
11938.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.26 .. NELBO: 5311.28
*****
*****
Validation loss decreased (10682.476562 --> 10622.552734). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11844.86 .. NELBO:
11844.9
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.18 .. NELBO: 5300.2
*****
*****
Validation loss decreased (10622.552734 --> 10600.401367). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.56 .. NELBO:
11790.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.32 .. NELBO: 5312.34
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.72 .. NELBO:
11781.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.52 .. NELBO: 5335.54
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.44 .. NELBO:
11793.48
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.18 .. NELBO: 5351.2
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.81 .. NELBO:
11795.85
*****
*****

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*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.15 .. NELBO: 5353.17
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.26 .. NELBO:
11784.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.23 .. NELBO: 5347.25
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 194
model: ETM(
  (t_drop): Dropout(p=0.061684414705814726, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 78.52 .. Rec_loss: 12263.91 .. NELBO:
12342.43
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.75 .. Rec_loss: 5443.54 .. NELBO: 5451.29
*****
*****
Validation loss decreased (inf --> 10902.577148). Saving model ...
*****
*****

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```

Epoch----->2 .. LR: 0.005 .. KL_theta: 8.37 .. Rec_loss: 12246.91 .. NELBO:
12255.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.41 .. Rec_loss: 5431.15 .. NELBO: 5431.56
*****
*****
Validation loss decreased (10902.577148 --> 10863.120117). Saving model ...
*****
*****
Epoch----->3 .. LR: 0.005 .. KL_theta: 0.58 .. Rec_loss: 12206.1 .. NELBO:
12206.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5407.7 .. NELBO: 5407.77
*****
*****
Validation loss decreased (10863.120117 --> 10815.541016). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 12134.8 .. NELBO:
12134.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5374.72 .. NELBO: 5374.74
*****
*****
Validation loss decreased (10815.541016 --> 10749.486328). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12037.17 .. NELBO:
12037.21
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.36 .. NELBO: 5338.38
*****
*****
Validation loss decreased (10749.486328 --> 10676.746094). Saving model ...
*****
*****

```

```

Epoch----->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11930.07 .. NELB0:
11930.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.55 .. NELB0: 5309.57
*****
*****
Validation loss decreased (10676.746094 --> 10619.139648). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11837.72 .. NELB0:
11837.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.36 .. NELB0: 5300.38
*****
*****
Validation loss decreased (10619.139648 --> 10600.756836). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11787.96 .. NELB0:
11787.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.94 .. NELB0: 5313.96
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11782.44 .. NELB0:
11782.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.97 .. NELB0: 5336.99
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****

```

```

Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11794.09 .. NELBO:
11794.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.39 .. NELBO: 5351.41
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.14 .. NELBO:
11795.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.41 .. NELBO: 5352.43
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11783.31 .. NELBO:
11783.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5346.24 .. NELBO: 5346.25
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.061684414705814726, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)

```



```

)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 85.8 .. Rec_loss: 12264.38 .. NELBO:
12350.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.85 .. Rec_loss: 5444.09 .. NELBO: 5451.94
*****
*****
Validation loss decreased (inf --> 10903.868164). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.4 .. Rec_loss: 12248.93 .. NELBO:
12257.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.38 .. Rec_loss: 5432.55 .. NELBO: 5432.93
*****
*****
Validation loss decreased (10903.868164 --> 10865.859375). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.55 .. Rec_loss: 12211.1 .. NELBO:
12211.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 5410.25 .. NELBO: 5410.31
*****
*****
Validation loss decreased (10865.859375 --> 10820.631836). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 12142.27 .. NELBO:
12142.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5378.3 .. NELBO: 5378.32
*****
*****

```

```
Validation loss decreased (10820.631836 --> 10756.647461). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 12047.54 .. NELBO:
12047.58
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5342.17 .. NELBO: 5342.18
*****
*****
Validation loss decreased (10756.647461 --> 10684.362305). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11940.72 .. NELBO:
11940.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.04 .. NELBO: 5312.05
*****
*****
Validation loss decreased (10684.362305 --> 10624.107422). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11846.46 .. NELBO:
11846.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.06 .. NELBO: 5300.07
*****
*****
Validation loss decreased (10624.107422 --> 10600.136719). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11790.6 .. NELBO:
11790.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.13 .. NELBO: 5311.14
*****
*****
```

```

EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11780.33 .. NELBO:
11780.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5334.15 .. NELBO: 5334.16
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11792.31 .. NELBO:
11792.34
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5350.5 .. NELBO: 5350.51
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11795.94 .. NELBO:
11795.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5353.2 .. NELBO: 5353.21
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.07 .. NELBO:
11785.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5347.58 .. NELBO: 5347.59
*****
*****

```

```

EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.061684414705814726, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=70, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=70, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=70, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 77.55 .. Rec_loss: 12264.26 .. NELBO:
12341.81
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.65 .. Rec_loss: 5444.42 .. NELBO: 5452.07
*****
*****
Validation loss decreased (inf --> 10904.142578). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.21 .. Rec_loss: 12249.97 .. NELBO:
12258.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 5433.27 .. NELBO: 5433.58
*****
*****
Validation loss decreased (10904.142578 --> 10867.146484). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 12213.29 .. NELBO:
12213.73
*****
*****
*****
*****

```

```

VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5411.34 .. NELBO: 5411.39
*****
*****
Validation loss decreased (10867.146484 --> 10822.772461). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 12145.36 .. NELBO:
12145.43
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5379.38 .. NELBO: 5379.4
*****
*****
Validation loss decreased (10822.772461 --> 10758.799805). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 12050.09 .. NELBO:
12050.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5342.84 .. NELBO: 5342.85
*****
*****
Validation loss decreased (10758.799805 --> 10685.704102). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11942.25 .. NELBO:
11942.27
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5312.16 .. NELBO: 5312.17
*****
*****
Validation loss decreased (10685.704102 --> 10624.344727). Saving model ...
*****
*****
Epoch----->7 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11845.5 .. NELBO:
11845.52
*****
*****
*****

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```

VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5300.08 .. NELBO: 5300.09
*****
*****
Validation loss decreased (10624.344727 --> 10600.189453). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11789.5 .. NELBO:
11789.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5311.79 .. NELBO: 5311.8
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11779.74 .. NELBO:
11779.77
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5335.58 .. NELBO: 5335.59
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11793.16 .. NELBO:
11793.19
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5352.05 .. NELBO: 5352.06
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch----->11 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11796.7 .. NELBO:
11796.73
*****
*****
*****

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VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5354.27 .. NELBO: 5354.28
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11785.01 .. NELBO:
11785.04
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 5348.12 .. NELBO: 5348.13
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 195
model: ETM(
  (t_drop): Dropout(p=0.06285724471994343, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=96, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=96, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=96, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 106.36 .. Rec_loss: 12264.57 .. NELBO:
12370.93
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.67 .. Rec_loss: 5444.57 .. NELBO: 5453.24
*****
*****
Validation loss decreased (inf --> 10906.470703). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.53 .. Rec_loss: 12250.12 .. NELBO:
12259.65

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```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 5433.36 .. NELBO: 5433.95
*****
*****
Validation loss decreased (10906.470703 --> 10867.887695). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.84 .. Rec_loss: 12213.04 .. NELBO:
12213.88
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5411.72 .. NELBO: 5411.82
*****
*****
Validation loss decreased (10867.887695 --> 10823.634766). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 12146.37 .. NELBO:
12146.53
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 5380.24 .. NELBO: 5380.28
*****
*****
Validation loss decreased (10823.634766 --> 10760.565430). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 12052.54 .. NELBO:
12052.61
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5344.15 .. NELBO: 5344.18
*****
*****
Validation loss decreased (10760.565430 --> 10688.360352). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11945.82 .. NELBO:
11945.88

```



```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5313.5 .. NELBO: 5313.53
*****
*****
Validation loss decreased (10688.360352 --> 10627.055664). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11850.07 .. NELBO:
11850.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5300.57 .. NELBO: 5300.6
*****
*****
Validation loss decreased (10627.055664 --> 10601.185547). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11791.97 .. NELBO:
11792.02
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5310.82 .. NELBO: 5310.85
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11780.31 .. NELBO:
11780.36
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5333.71 .. NELBO: 5333.74
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11791.46 .. NELBO:
11791.51

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5350.49 .. NELBO: 5350.52
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.04 .. NELBO:
11796.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5353.53 .. NELBO: 5353.56
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11785.7 .. NELBO:
11785.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.98 .. NELBO: 5348.0
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.06285724471994343, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=96, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=96, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=96, bias=True)
)
*****

```

```

*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 92.98 .. Rec_loss: 12263.96 .. NELBO:
12356.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.56 .. Rec_loss: 5444.13 .. NELBO: 5452.69
*****
*****
Validation loss decreased (inf --> 10905.393555). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.36 .. Rec_loss: 12248.66 .. NELBO:
12258.02
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.48 .. Rec_loss: 5432.18 .. NELBO: 5432.66
*****
*****
Validation loss decreased (10905.393555 --> 10865.315430). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12209.17 .. NELBO:
12209.84
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.07 .. Rec_loss: 5409.12 .. NELBO: 5409.19
*****
*****
Validation loss decreased (10865.315430 --> 10818.379883). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12138.27 .. NELBO:
12138.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.41 .. NELBO: 5376.44
*****
*****
Validation loss decreased (10818.379883 --> 10752.876953). Saving model ...
*****

```

```

*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12041.21 .. NELBO:
12041.26
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.94 .. NELBO: 5339.96
*****
*****
Validation loss decreased (10752.876953 --> 10679.917969). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11933.14 .. NELBO:
11933.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.5 .. NELBO: 5310.52
*****
*****
Validation loss decreased (10679.917969 --> 10621.041016). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11839.67 .. NELBO:
11839.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.45 .. NELBO: 5300.47
*****
*****
Validation loss decreased (10621.041016 --> 10600.943359). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.14 .. NELBO:
11787.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.64 .. NELBO: 5313.66
*****
*****
EarlyStopping counter: 1 out of 5
*****

```

```

*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.71 .. NELBO:
11780.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.12 .. NELBO: 5337.14
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.71 .. NELBO:
11793.75
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.23 .. NELBO: 5352.25
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.96 .. NELBO:
11796.0
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.55 .. NELBO: 5353.57
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.31 .. NELBO:
11784.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.24 .. NELBO: 5347.26
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping

```

```

model: ETM(
  (t_drop): Dropout(p=0.06285724471994343, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=96, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=96, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=96, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 103.45 .. Rec_loss: 12264.43 .. NELBO:
12367.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.99 .. Rec_loss: 5444.56 .. NELBO: 5453.55
*****
*****
Validation loss decreased (inf --> 10907.096680). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.7 .. Rec_loss: 12250.53 .. NELBO:
12260.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5433.59 .. NELBO: 5434.12
*****
*****
Validation loss decreased (10907.096680 --> 10868.239258). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 12214.44 .. NELBO:
12215.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5412.04 .. NELBO: 5412.13
*****
*****

```

```

*****
Validation loss decreased (10868.239258 --> 10824.262695). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12148.19 .. NELBO:
12148.33
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.69 .. NELBO: 5380.72
*****
*****
Validation loss decreased (10824.262695 --> 10761.446289). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12054.65 .. NELBO:
12054.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.63 .. NELBO: 5344.65
*****
*****
Validation loss decreased (10761.446289 --> 10689.307617). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11948.09 .. NELBO:
11948.14
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.76 .. NELBO: 5313.78
*****
*****
Validation loss decreased (10689.307617 --> 10627.560547). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11852.24 .. NELBO:
11852.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.32 .. NELBO: 5300.34
*****

```

```

*****
Validation loss decreased (10627.560547 --> 10600.680664). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.19 .. NELBO:
11793.23
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.09 .. NELBO: 5310.11
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.13 .. NELBO:
11780.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.0 .. NELBO: 5333.02
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.95 .. NELBO:
11791.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.2 .. NELBO: 5350.22
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.38 .. NELBO:
11796.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.64 .. NELBO: 5353.66
*****

```



```

*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.34 .. NELBO:
11786.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.23 .. NELBO: 5348.25
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 196
model: ETM(
  (t_drop): Dropout(p=0.040715481114155065, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=88, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=88, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=88, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1303.78 .. Rec_loss: 12264.42 .. NELBO:
13568.2
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 27.9 .. Rec_loss: 5445.7 .. NELBO: 5473.6
*****
*****
Validation loss decreased (inf --> 10947.215820). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 36.3 .. Rec_loss: 12254.9 .. NELBO:
12291.2
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 10.42 .. Rec_loss: 5437.93 .. NELBO:
5448.35
*****
*****
Validation loss decreased (10947.215820 --> 10896.702148). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 21.57 .. Rec_loss: 12228.85 .. NELBO:
12250.42
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 9.3 .. Rec_loss: 5421.71 .. NELBO: 5431.01
*****
*****
Validation loss decreased (10896.702148 --> 10862.022461). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 17.2 .. Rec_loss: 12177.32 .. NELBO:
12194.52
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 5.51 .. Rec_loss: 5395.64 .. NELBO: 5401.15
*****
*****
Validation loss decreased (10862.022461 --> 10802.293945). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 10.17 .. Rec_loss: 12097.54 .. NELBO:
12107.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.24 .. Rec_loss: 5361.9 .. NELBO: 5365.14
*****
*****
Validation loss decreased (10802.293945 --> 10730.291992). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 6.14 .. Rec_loss: 11995.47 .. NELBO:
12001.61
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.16 .. Rec_loss: 5327.59 .. NELBO: 5329.75
*****
*****
Validation loss decreased (10730.291992 --> 10659.497070). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 4.25 .. Rec_loss: 11891.27 .. NELBO:
11895.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.62 .. Rec_loss: 5304.28 .. NELBO: 5305.9
*****
*****
Validation loss decreased (10659.497070 --> 10611.805664). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 3.19 .. Rec_loss: 11811.33 .. NELBO:
11814.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 5302.86 .. NELBO: 5304.12
*****
*****
Validation loss decreased (10611.805664 --> 10608.239258). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 2.5 .. Rec_loss: 11776.84 .. NELBO:
11779.34
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.94 .. Rec_loss: 5322.28 .. NELBO: 5323.22
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 1.84 .. Rec_loss: 11782.8 .. NELBO:
11784.64
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 5345.3 .. NELBO: 5345.95
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 1.22 .. Rec_loss: 11795.5 .. NELBO:
11796.72
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.44 .. Rec_loss: 5355.91 .. NELBO: 5356.35
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.86 .. Rec_loss: 11793.97 .. NELBO:
11794.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.3 .. Rec_loss: 5353.55 .. NELBO: 5353.85
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.59 .. Rec_loss: 11779.07 .. NELBO:
11779.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.21 .. Rec_loss: 5345.89 .. NELBO: 5346.1
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.040715481114155065, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)

```

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(alphas): Linear(in_features=300, out_features=88, bias=False)
(q_theta): Sequential(
  (0): Linear(in_features=13198, out_features=800, bias=True)
  (1): Softplus(beta=1, threshold=20)
  (2): Linear(in_features=800, out_features=800, bias=True)
  (3): Softplus(beta=1, threshold=20)
)
(mu_q_theta): Linear(in_features=800, out_features=88, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=88, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 1428.02 .. Rec_loss: 12264.64 .. NELBO:
13692.66
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 24.11 .. Rec_loss: 5445.84 .. NELBO:
5469.95
*****
*****
Validation loss decreased (inf --> 10939.888672). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 27.98 .. Rec_loss: 12255.03 .. NELBO:
12283.01
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 4.34 .. Rec_loss: 5437.47 .. NELBO: 5441.81
*****
*****
Validation loss decreased (10939.888672 --> 10883.628906). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 8.37 .. Rec_loss: 12227.36 .. NELBO:
12235.73
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 3.04 .. Rec_loss: 5421.0 .. NELBO: 5424.04
*****
*****
Validation loss decreased (10883.628906 --> 10848.080078). Saving model ...
*****

```

```

*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 5.36 .. Rec_loss: 12175.47 .. NELBO:
12180.83
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.49 .. Rec_loss: 5394.92 .. NELBO: 5396.41
*****
*****
Validation loss decreased (10848.080078 --> 10792.813477). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.6 .. Rec_loss: 12095.65 .. NELBO:
12098.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 5361.4 .. NELBO: 5362.13
*****
*****
Validation loss decreased (10792.813477 --> 10724.246094). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 11995.34 .. NELBO:
11996.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 5327.4 .. NELBO: 5327.75
*****
*****
Validation loss decreased (10724.246094 --> 10655.512695). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 11891.86 .. NELBO:
11892.49
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.17 .. Rec_loss: 5304.32 .. NELBO: 5304.49
*****
*****
Validation loss decreased (10655.512695 --> 10608.979492). Saving model ...
*****

```

```

*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.31 .. Rec_loss: 11812.51 .. NELBO:
11812.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5302.81 .. NELBO: 5302.9
*****
*****
Validation loss decreased (10608.979492 --> 10605.798828). Saving model ...
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.16 .. Rec_loss: 11777.48 .. NELBO:
11777.64
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5321.85 .. NELBO: 5321.9
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 11782.83 .. NELBO:
11782.93
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5344.63 .. NELBO: 5344.66
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11796.39 .. NELBO:
11796.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.29 .. NELBO: 5355.32
*****
*****
EarlyStopping counter: 3 out of 5
*****

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```

*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11793.71 .. NELBO:
11793.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.16 .. NELBO: 5353.18
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->13 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11779.81 .. NELBO:
11779.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.75 .. NELBO: 5345.77
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.040715481114155065, inplace=False)
  (theta_act): Softplus(beta=1, threshold=20)
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=88, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Softplus(beta=1, threshold=20)
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Softplus(beta=1, threshold=20)
  )
  (mu_q_theta): Linear(in_features=800, out_features=88, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=88, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 928.38 .. Rec_loss: 12264.53 .. NELBO:
13192.91
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 19.22 .. Rec_loss: 5445.59 .. NELBO:
5464.81

```



```

*****
*****
Validation loss decreased (inf --> 10929.619141). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 21.24 .. Rec_loss: 12254.14 .. NELBO:
12275.38
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.36 .. Rec_loss: 5436.73 .. NELBO: 5439.09
*****
*****
Validation loss decreased (10929.619141 --> 10878.178711). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 4.93 .. Rec_loss: 12224.93 .. NELBO:
12229.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 2.03 .. Rec_loss: 5418.91 .. NELBO: 5420.94
*****
*****
Validation loss decreased (10878.178711 --> 10841.888672). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 3.76 .. Rec_loss: 12168.84 .. NELBO:
12172.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 1.39 .. Rec_loss: 5391.03 .. NELBO: 5392.42
*****
*****
Validation loss decreased (10841.888672 --> 10784.839844). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 2.65 .. Rec_loss: 12084.72 .. NELBO:
12087.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.93 .. Rec_loss: 5356.11 .. NELBO: 5357.04

```

```

*****
*****
Validation loss decreased (10784.839844 --> 10714.086914). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 1.78 .. Rec_loss: 11980.28 .. NELBO:
11982.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 5322.27 .. NELBO: 5322.93
*****
*****
Validation loss decreased (10714.086914 --> 10645.865234). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 1.26 .. Rec_loss: 11877.77 .. NELBO:
11879.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.42 .. Rec_loss: 5301.81 .. NELBO: 5302.23
*****
*****
Validation loss decreased (10645.865234 --> 10604.469727). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.73 .. Rec_loss: 11803.45 .. NELBO:
11804.18
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.2 .. Rec_loss: 5304.44 .. NELBO: 5304.64
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.35 .. Rec_loss: 11777.06 .. NELBO:
11777.41
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.1 .. Rec_loss: 5325.86 .. NELBO: 5325.96

```

```

*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.18 .. Rec_loss: 11785.67 .. NELBO:
11785.85
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 5347.41 .. NELBO: 5347.46
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 11796.76 .. NELBO:
11796.85
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5355.51 .. NELBO: 5355.54
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11791.73 .. NELBO:
11791.78
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.88 .. NELBO: 5351.9
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 197
model: ETM(
  (t_drop): Dropout(p=0.04933986201070551, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=91, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)

```

```

    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
)
(mu_q_theta): Linear(in_features=800, out_features=91, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=91, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 103.48 .. Rec_loss: 12263.79 .. NELBO:
12367.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.82 .. Rec_loss: 5444.17 .. NELBO: 5452.99
*****
*****
Validation loss decreased (inf --> 10905.981445). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.58 .. Rec_loss: 12249.54 .. NELBO:
12259.12
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.53 .. Rec_loss: 5433.05 .. NELBO: 5433.58
*****
*****
Validation loss decreased (10905.981445 --> 10867.156250). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.76 .. Rec_loss: 12212.27 .. NELBO:
12213.03
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.09 .. Rec_loss: 5411.14 .. NELBO: 5411.23
*****
*****
Validation loss decreased (10867.156250 --> 10822.458984). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.14 .. Rec_loss: 12144.85 .. NELBO:
12144.99
*****

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```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5379.41 .. NELBO: 5379.44
*****
*****
Validation loss decreased (10822.458984 --> 10758.884766). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12050.32 .. NELBO:
12050.38
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5343.14 .. NELBO: 5343.16
*****
*****
Validation loss decreased (10758.884766 --> 10686.321289). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11942.42 .. NELBO:
11942.47
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.61 .. NELBO: 5312.63
*****
*****
Validation loss decreased (10686.321289 --> 10625.258789). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11846.59 .. NELBO:
11846.63
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.3 .. NELBO: 5300.32
*****
*****
Validation loss decreased (10625.258789 --> 10600.651367). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11790.57 .. NELBO:
11790.61
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.41 .. NELBO: 5311.43
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11780.22 .. NELBO:
11780.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.68 .. NELBO: 5334.7
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11792.52 .. NELBO:
11792.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.17 .. NELBO: 5351.19
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11796.56 .. NELBO:
11796.61
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.76 .. NELBO: 5353.78
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.72 .. NELBO:
11785.76
*****

```

```

*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.91 .. NELBO: 5347.93
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04933986201070551, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=91, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=91, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=91, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.37 .. Rec_loss: 12264.0 .. NELBO:
12352.37
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.92 .. Rec_loss: 5443.99 .. NELBO: 5451.91
*****
*****
Validation loss decreased (inf --> 10903.804688). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.69 .. Rec_loss: 12248.17 .. NELBO:
12256.86
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5431.68 .. NELBO: 5432.17
*****
*****
Validation loss decreased (10903.804688 --> 10864.346680). Saving model ...
*****
*****

```

```

Epoch----->3 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 12207.88 .. NELBO:
12208.57
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.77 .. NELBO: 5408.85
*****
*****
Validation loss decreased (10864.346680 --> 10817.696289). Saving model ...
*****
*****
Epoch----->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12138.13 .. NELBO:
12138.25
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.34 .. NELBO: 5376.37
*****
*****
Validation loss decreased (10817.696289 --> 10752.732422). Saving model ...
*****
*****
Epoch----->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12041.71 .. NELBO:
12041.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5340.15 .. NELBO: 5340.17
*****
*****
Validation loss decreased (10752.732422 --> 10680.351562). Saving model ...
*****
*****
Epoch----->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11934.92 .. NELBO:
11934.97
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.76 .. NELBO: 5310.78
*****
*****
Validation loss decreased (10680.351562 --> 10621.556641). Saving model ...
*****
*****

```



```

Epoch----->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11841.49 .. NELBO:
11841.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.28 .. NELBO: 5300.3
*****
*****
Validation loss decreased (10621.556641 --> 10600.597656). Saving model ...
*****
*****
Epoch----->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.64 .. NELBO:
11788.68
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.76 .. NELBO: 5312.78
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch----->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.9 .. NELBO:
11780.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.95 .. NELBO: 5335.97
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch----->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.23 .. NELBO:
11793.27
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.4 .. NELBO: 5351.42
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****

```

```

Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.73 .. NELBO:
11795.77
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.18 .. NELBO: 5353.2
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.27 .. NELBO:
11784.31
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.14 .. NELBO: 5347.16
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.04933986201070551, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=91, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=91, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=91, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 88.63 .. Rec_loss: 12264.02 .. NELBO:
12352.65
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.29 .. Rec_loss: 5443.99 .. NELBO: 5451.28
*****
*****

```

```

Validation loss decreased (inf --> 10902.548828). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 7.92 .. Rec_loss: 12248.23 .. NELBO:
12256.15
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5431.97 .. NELBO: 5432.42
*****
*****
Validation loss decreased (10902.548828 --> 10864.852539). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12208.52 .. NELBO:
12209.17
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5409.36 .. NELBO: 5409.44
*****
*****
Validation loss decreased (10864.852539 --> 10818.885742). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.13 .. Rec_loss: 12139.46 .. NELBO:
12139.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5377.2 .. NELBO: 5377.23
*****
*****
Validation loss decreased (10818.885742 --> 10754.452148). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12043.49 .. NELBO:
12043.54
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5341.09 .. NELBO: 5341.11
*****
*****

```

```

Validation loss decreased (10754.452148 --> 10682.218750). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11936.32 .. NELBO:
11936.36
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.45 .. NELBO: 5311.47
*****
*****
Validation loss decreased (10682.218750 --> 10622.949219). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11842.88 .. NELBO:
11842.92
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.43 .. NELBO: 5300.45
*****
*****
Validation loss decreased (10622.949219 --> 10600.906250). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11789.03 .. NELBO:
11789.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5312.44 .. NELBO: 5312.46
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.55 .. NELBO:
11780.59
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5335.57 .. NELBO: 5335.59
*****
*****

```

```

EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.59 .. NELBO:
11792.63
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.23 .. NELBO: 5351.25
*****
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.83 .. NELBO:
11795.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.16 .. NELBO: 5353.18
*****
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11784.43 .. NELBO:
11784.47
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.2 .. NELBO: 5347.22
*****
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 198
model: ETM(
  (t_drop): Dropout(p=0.03639473996509752, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=99, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)

```

```

    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=99, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=99, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 90.13 .. Rec_loss: 12264.06 .. NELBO:
12354.19
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 7.94 .. Rec_loss: 5444.02 .. NELBO: 5451.96
*****
*****
*****
Validation loss decreased (inf --> 10903.924805). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.62 .. Rec_loss: 12247.93 .. NELBO:
12256.55
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.45 .. Rec_loss: 5431.67 .. NELBO: 5432.12
*****
*****
*****
Validation loss decreased (10903.924805 --> 10864.235352). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.63 .. Rec_loss: 12207.31 .. NELBO:
12207.94
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5408.61 .. NELBO: 5408.69
*****
*****
*****
Validation loss decreased (10864.235352 --> 10817.374023). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12136.87 .. NELBO:
12136.99
*****
*****
*****

```

```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5376.1 .. NELBO: 5376.13
*****
*****
Validation loss decreased (10817.374023 --> 10752.255859). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 12040.19 .. NELBO:
12040.25
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5339.99 .. NELBO: 5340.01
*****
*****
Validation loss decreased (10752.255859 --> 10680.020508). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11933.06 .. NELBO:
11933.11
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.88 .. NELBO: 5310.9
*****
*****
Validation loss decreased (10680.020508 --> 10621.802734). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11840.6 .. NELBO:
11840.64
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.77 .. NELBO: 5300.79
*****
*****
Validation loss decreased (10621.802734 --> 10601.580078). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11788.62 .. NELBO:
11788.66
*****
*****
*****

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```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.46 .. NELBO: 5313.48
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.36 .. NELBO:
11781.4
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5336.46 .. NELBO: 5336.48
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.46 .. NELBO:
11793.5
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.49 .. NELBO: 5351.51
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.48 .. NELBO:
11795.52
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.99 .. NELBO: 5353.01
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.92 .. NELBO:
11783.96
*****
*****
*****

```



```

*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.86 .. NELBO: 5346.88
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.03639473996509752, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=99, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=99, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=99, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 94.59 .. Rec_loss: 12264.15 .. NELBO:
12358.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.1 .. Rec_loss: 5443.72 .. NELBO: 5451.82
*****
*****
Validation loss decreased (inf --> 10903.639648). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.73 .. Rec_loss: 12247.26 .. NELBO:
12255.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5431.06 .. NELBO: 5431.53
*****
*****
Validation loss decreased (10903.639648 --> 10863.068359). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.67 .. Rec_loss: 12206.35 .. NELBO:
12207.02

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5407.57 .. NELBO: 5407.65
*****
*****
Validation loss decreased (10863.068359 --> 10815.290039). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12134.45 .. NELBO:
12134.57
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5374.58 .. NELBO: 5374.61
*****
*****
Validation loss decreased (10815.290039 --> 10749.223633). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12036.84 .. NELBO:
12036.89
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5338.26 .. NELBO: 5338.28
*****
*****
Validation loss decreased (10749.223633 --> 10676.564453). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11929.29 .. NELBO:
11929.33
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.53 .. NELBO: 5309.55
*****
*****
Validation loss decreased (10676.564453 --> 10619.106445). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11838.01 .. NELBO:
11838.05

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.44 .. NELBO: 5300.46
*****
*****
Validation loss decreased (10619.106445 --> 10600.924805). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11787.54 .. NELBO:
11787.58
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.17 .. NELBO: 5314.19
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11781.72 .. NELBO:
11781.76
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5337.4 .. NELBO: 5337.42
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11794.08 .. NELBO:
11794.12
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5351.9 .. NELBO: 5351.92
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11795.35 .. NELBO:
11795.39

```

```

*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5352.89 .. NELBO: 5352.91
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11783.02 .. NELBO:
11783.06
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.65 .. NELBO: 5346.67
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.03639473996509752, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=99, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=99, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=99, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 99.23 .. Rec_loss: 12264.63 .. NELBO:
12363.86
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.79 .. Rec_loss: 5444.8 .. NELBO: 5453.59
*****
*****
Validation loss decreased (inf --> 10907.182617). Saving model ...
*****

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```

*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.44 .. Rec_loss: 12250.61 .. NELBO:
12260.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.49 .. Rec_loss: 5433.68 .. NELBO: 5434.17
*****
*****
Validation loss decreased (10907.182617 --> 10868.335938). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.69 .. Rec_loss: 12213.91 .. NELBO:
12214.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5411.97 .. NELBO: 5412.05
*****
*****
Validation loss decreased (10868.335938 --> 10824.091797). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12147.0 .. NELBO:
12147.11
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5380.3 .. NELBO: 5380.33
*****
*****
Validation loss decreased (10824.091797 --> 10760.648438). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12052.41 .. NELBO:
12052.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5344.02 .. NELBO: 5344.04
*****
*****
Validation loss decreased (10760.648438 --> 10688.086914). Saving model ...
*****

```

```

*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11945.09 .. NELBO:
11945.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5313.38 .. NELBO: 5313.4
*****
*****
Validation loss decreased (10688.086914 --> 10626.792969). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11849.26 .. NELBO:
11849.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.71 .. NELBO: 5300.73
*****
*****
Validation loss decreased (10626.792969 --> 10601.449219). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.84 .. NELBO:
11791.88
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5311.35 .. NELBO: 5311.37
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.06 .. NELBO:
11780.1
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5334.38 .. NELBO: 5334.4
*****
*****
EarlyStopping counter: 2 out of 5
*****

```

```

*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.26 .. NELBO:
11792.3
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.96 .. NELBO: 5350.98
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.52 .. NELBO:
11796.56
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.7 .. NELBO: 5353.72
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.65 .. NELBO:
11785.69
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5347.92 .. NELBO: 5347.94
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Current call: 199
model: ETM(
  (t_drop): Dropout(p=0.050264728333737484, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=94, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
)

```

```

(mu_q_theta): Linear(in_features=800, out_features=94, bias=True)
(logsigma_q_theta): Linear(in_features=800, out_features=94, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 92.64 .. Rec_loss: 12264.52 .. NELBO:
12357.16
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.13 .. Rec_loss: 5444.54 .. NELBO: 5452.67
*****
*****
Validation loss decreased (inf --> 10905.340820). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 8.83 .. Rec_loss: 12250.25 .. NELBO:
12259.08
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.46 .. Rec_loss: 5433.57 .. NELBO: 5434.03
*****
*****
Validation loss decreased (10905.340820 --> 10868.055664). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.65 .. Rec_loss: 12214.53 .. NELBO:
12215.18
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5412.35 .. NELBO: 5412.43
*****
*****
Validation loss decreased (10868.055664 --> 10824.841797). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12149.32 .. NELBO:
12149.44
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5381.32 .. NELBO: 5381.35

```



```

*****
*****
Validation loss decreased (10824.841797 --> 10762.686523). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12056.91 .. NELBO:
12056.96
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.4 .. NELBO: 5345.42
*****
*****
Validation loss decreased (10762.686523 --> 10690.842773). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11950.67 .. NELBO:
11950.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.33 .. NELBO: 5314.35
*****
*****
Validation loss decreased (10690.842773 --> 10628.702148). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11854.24 .. NELBO:
11854.28
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.4 .. NELBO: 5300.42
*****
*****
Validation loss decreased (10628.702148 --> 10600.844727). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.67 .. NELBO:
11793.71
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5309.73 .. NELBO: 5309.75

```

```

*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11779.93 .. NELBO:
11779.97
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5332.54 .. NELBO: 5332.56
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.21 .. NELBO:
11791.25
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5349.97 .. NELBO: 5349.99
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.22 .. NELBO:
11796.26
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.7 .. NELBO: 5353.72
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11785.86 .. NELBO:
11785.9
*****
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.47 .. NELBO: 5348.49

```

```

*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.050264728333737484, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=94, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=94, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=94, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 98.26 .. Rec_loss: 12264.64 .. NELBO:
12362.9
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.64 .. Rec_loss: 5444.62 .. NELBO: 5453.26
*****
*****
Validation loss decreased (inf --> 10906.520508). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.32 .. Rec_loss: 12250.74 .. NELBO:
12260.06
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.47 .. Rec_loss: 5433.72 .. NELBO: 5434.19
*****
*****
Validation loss decreased (10906.520508 --> 10868.376953). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.66 .. Rec_loss: 12215.0 .. NELBO:
12215.66
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5412.59 .. NELBO: 5412.67
*****
*****
Validation loss decreased (10868.376953 --> 10825.334961). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.12 .. Rec_loss: 12149.62 .. NELBO:
12149.74
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5381.56 .. NELBO: 5381.59
*****
*****
Validation loss decreased (10825.334961 --> 10763.183594). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12057.41 .. NELBO:
12057.46
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5345.53 .. NELBO: 5345.55
*****
*****
Validation loss decreased (10763.183594 --> 10691.106445). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11950.56 .. NELBO:
11950.6
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.34 .. NELBO: 5314.36
*****
*****
Validation loss decreased (10691.106445 --> 10628.728516). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11853.5 .. NELBO:
11853.54
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.49 .. NELBO: 5300.51
*****
*****
Validation loss decreased (10628.728516 --> 10601.013672). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.58 .. NELBO:
11793.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.07 .. NELBO: 5310.09
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.31 .. NELBO:
11780.35
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.0 .. NELBO: 5333.02
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11791.66 .. NELBO:
11791.7
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.24 .. NELBO: 5350.26
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.71 .. NELBO:
11796.75
*****
*****

```

```

*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5353.66 .. NELBO: 5353.68
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.4 .. NELBO:
11786.44
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.21 .. NELBO: 5348.23
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
model: ETM(
  (t_drop): Dropout(p=0.050264728333737484, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=94, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=94, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=94, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 94.85 .. Rec_loss: 12264.77 .. NELBO:
12359.62
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 8.36 .. Rec_loss: 5444.83 .. NELBO: 5453.19
*****
*****
Validation loss decreased (inf --> 10906.383789). Saving model ...
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.12 .. Rec_loss: 12251.64 .. NELBO:

```

```
12260.76
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.51 .. Rec_loss: 5434.36 .. NELBO: 5434.87
*****
*****
Validation loss decreased (10906.383789 --> 10869.724609). Saving model ...
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.71 .. Rec_loss: 12216.82 .. NELBO:
12217.53
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.08 .. Rec_loss: 5413.37 .. NELBO: 5413.45
*****
*****
Validation loss decreased (10869.724609 --> 10826.882812). Saving model ...
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.11 .. Rec_loss: 12151.71 .. NELBO:
12151.82
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 5382.31 .. NELBO: 5382.34
*****
*****
Validation loss decreased (10826.882812 --> 10764.670898). Saving model ...
*****
*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 12059.0 .. NELBO:
12059.05
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5346.07 .. NELBO: 5346.09
*****
*****
Validation loss decreased (10764.670898 --> 10692.171875). Saving model ...
*****
*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11952.03 .. NELBO:
```

```
11952.07
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5314.53 .. NELB0: 5314.55
*****
*****
Validation loss decreased (10692.171875 --> 10629.093750). Saving model ...
*****
*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11854.05 .. NELB0:
11854.09
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5300.37 .. NELB0: 5300.39
*****
*****
Validation loss decreased (10629.093750 --> 10600.779297). Saving model ...
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11793.41 .. NELB0:
11793.45
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5310.02 .. NELB0: 5310.04
*****
*****
EarlyStopping counter: 1 out of 5
*****
*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11780.12 .. NELB0:
11780.16
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5333.38 .. NELB0: 5333.4
*****
*****
EarlyStopping counter: 2 out of 5
*****
*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11792.09 .. NELB0:
```



```

11792.13
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5350.92 .. NELBO: 5350.94
*****
*****
EarlyStopping counter: 3 out of 5
*****
*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11796.95 .. NELBO:
11796.99
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5354.33 .. NELBO: 5354.35
*****
*****
EarlyStopping counter: 4 out of 5
*****
*****
Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11786.83 .. NELBO:
11786.87
*****
*****
*****
*****
VALIDATION .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 5348.69 .. NELBO: 5348.71
*****
*****
EarlyStopping counter: 5 out of 5
Early stopping
Optimizing model took: 8422 seconds.

```

```

[71]: dump(optimizer_results_ETM, './octis/models/optimizer_results_ETM.joblib',
        ↪compress=('lzma', 9))

```

```

[71]: ['./octis/models/optimizer_results_ETM.joblib']

```

```

[35]: optimizer_results_ETM = load('./octis/models/optimizer_results_ETM.joblib')

```

```

[72]: # the optimization process here is one of maximization, yet the provided
        ↪function for plotting
        # assumes the oposite, so we shall invert the result.

        values_to_plot_ETM = [-x for x in optimizer_results_ETM.info['f_val']]

```

```
plot_bayesian_optimization(values=values_to_plot_ETM,
                           name_plot="ETM_Optimization_Convergence",
                           log_scale=False,
                           conv_max=True)
```

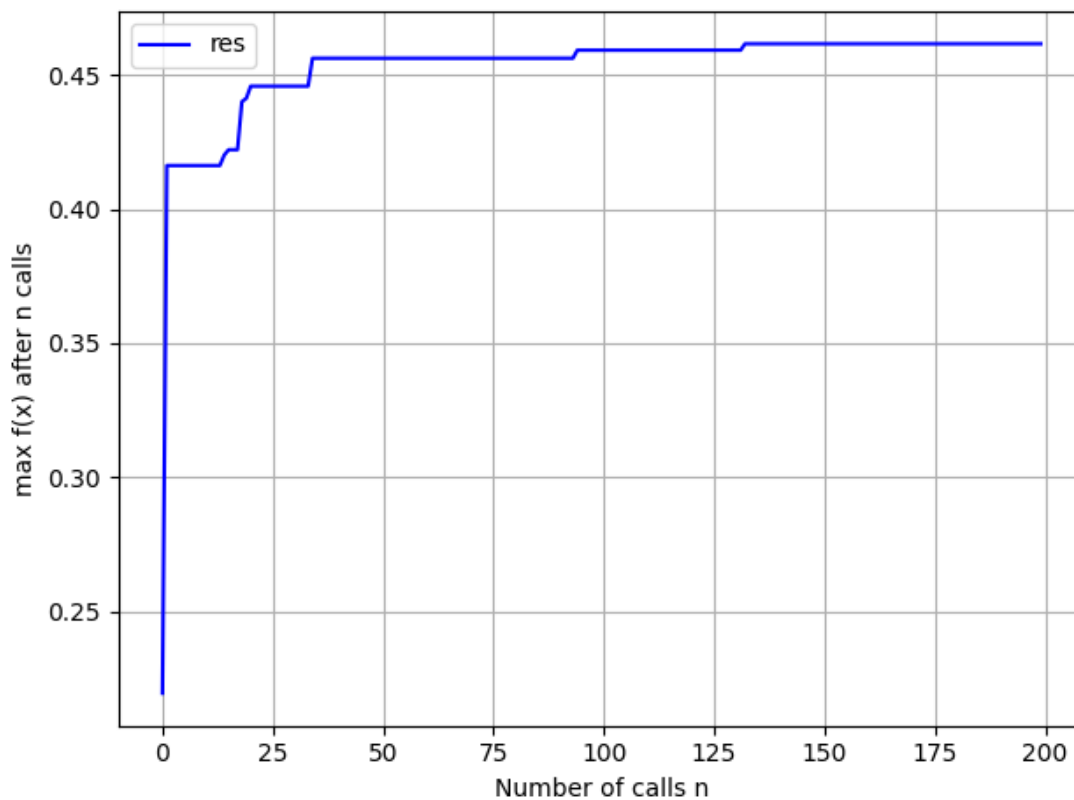
The ETM seems to have performed best on this constellation. It seems that the quality of this model is highly dependant on the size of the text segments and improves with fewer splits within one document. Which is intuitive, given that word2vec embeddings put a lot of emphasis on the document context and the relations between its words.

```
[73]: #The image is just dumped into the working directory, we shall move it
      ↪ somewhere more fitting

shutil.move('./ETM_Optimization_Convergence.png', './octis/results/
      ↪ETM_Optimization_Convergence.png')

Image(filename='./octis/results/ETM_Optimization_Convergence.png')
```

[73]:



```
[36]: # Plotting WECOherenceCentroid' and 'WordEmbeddingsInvertedRBOCentroid' our two
      ↪ metrics
```

```

coherence_scores_ETM = [max(run) for run in optimizer_results_ETM.
    ↳info['dict_model_runs']['WECOherenceCentroid'].values()]
diversity_scores_ETM = [max(run) for run in optimizer_results_ETM.
    ↳info['dict_model_runs']['O_WordEmbeddingsInvertedRBOCentroid'].values()]

# Create a figure with twin y-axis for the second metric
fig, ax1 = plt.subplots(figsize=(10, 6))

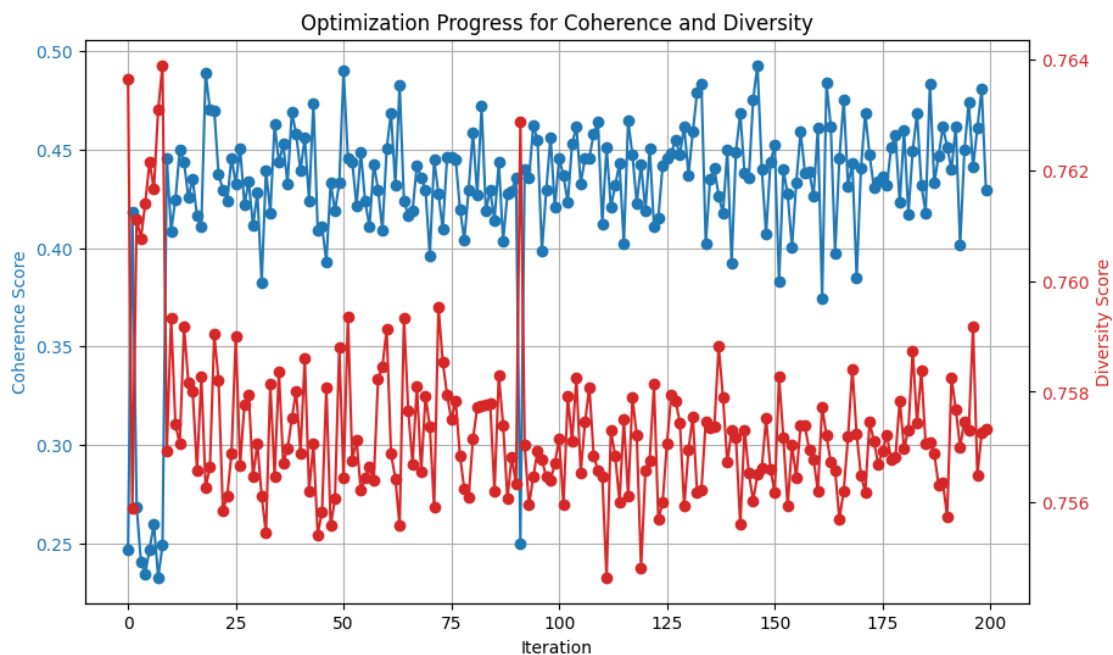
ax1.set_xlabel('Iteration')
ax1.set_ylabel('Coherence Score', color='tab:blue')
ax1.plot(coherence_scores_ETM, marker='o', color='tab:blue')
ax1.tick_params(axis='y', labelcolor='tab:blue')
#ax1.set_ylim(0.23, 0.50)

ax2 = ax1.twinx()
ax2.set_ylabel('Diversity Score', color='tab:red')
ax2.plot(diversity_scores_ETM, marker='o', color='tab:red')
ax2.tick_params(axis='y', labelcolor='tab:red')
#ax2.set_ylim(0.75, 0.78)

plt.title('Optimization Progress for Coherence and Diversity')
ax1.grid(True)

plt.show()

```



```
[61]: # Extract the best configurations based on coherence scores
coherence_scores_ETM = optimizer_results_ETM.
    ↪info['dict_model_runs']['WECOherenceCentroid']
diversity_scores_ETM = optimizer_results_ETM.
    ↪info['dict_model_runs']['O_WordEmbeddingsInvertedRBOCentroid']

# Extracting scores and hyperparameter configurations
combined_scores = []
for i, (coherence_run, diversity_run) in enumerate(zip(coherence_scores_ETM.
    ↪values(), diversity_scores_ETM.values())):
    max_coherence = max(coherence_run)
    max_diversity = max(diversity_run)
    num_topics = optimizer_results_ETM.info['x_iters']['num_topics'][i]
    num_layers = optimizer_results_ETM.info['x_iters']['num_layers'][i]
    num_neurons = optimizer_results_ETM.info['x_iters']['num_neurons'][i]
    learn_rate = optimizer_results_ETM.info['x_iters']['learn_rate'][i]
    activation = optimizer_results_ETM.info['x_iters']['activation'][i]
    optimizer_param = optimizer_results_ETM.info['x_iters']['optimizer'][i]
    dropout = optimizer_results_ETM.info['x_iters']['dropout'][i]

    combined_scores.append((max_coherence, max_diversity, num_topics,
    ↪num_layers, num_neurons, learn_rate, activation, optimizer_param, dropout))

# Sort by coherence score first and take the top ten
top_ten_by_coherence = sorted(combined_scores, key=lambda x: x[0],
    ↪reverse=True)[:10]

# Select the configuration with the highest diversity score from the top ten
best_overall_ETM = max(top_ten_by_coherence, key=lambda x: x[1])

# Print the best configuration
print("Best Coherence Score:", best_overall_ETM[0])
print("Corresponding Diversity Score:", best_overall_ETM[1])
print("Best Configuration: num_topics =", best_overall_ETM[2],
    ", num_layers =", best_overall_ETM[3],
    ", num_neurons =", best_overall_ETM[4],
    ", learn_rate =", best_overall_ETM[5],
    ", activation =", best_overall_ETM[6],
    ", optimizer =", best_overall_ETM[7],
    ", dropout =", best_overall_ETM[8])
```

Best Coherence Score: 0.4806725309903266

Corresponding Diversity Score: 0.7572589879575945

Best Configuration: num_topics = 99 , num_layers = 1 , num_neurons = 750 ,
learn_rate = 0.04655802555184136 , activation = sigmoid , optimizer = adam ,
dropout = 0.03639473996509752

```
[62]: best_num_topics = best_overall_ETM[2]
best_num_layers = best_overall_ETM[3]
best_num_neurons = best_overall_ETM[4]
best_learn_rate = best_overall_ETM[5]
best_activation = best_overall_ETM[6]
best_optimizer = best_overall_ETM[7]
best_dropout = best_overall_ETM[8]

# Now we instantiate the ETM model with the best hyperparameters
best_model_ETM = ETM(num_topics=best_num_topics,
                     #num_layers=best_num_layers,
                     #num_neurons=best_num_neurons,
                     #solver=best_optimizer,
                     activation=best_activation,
                     dropout=best_dropout,
                     batch_size=128,
                     use_partitions=False,
                     embeddings_path='./word2vec/word2vec_model.bin',
                     )

# Train the model with the dataset
best_model_ETM = best_model_ETM.train_model(dataset_final)
```

```
model: ETM(
  (t_drop): Dropout(p=0.03639473996509752, inplace=False)
  (theta_act): Sigmoid()
  (rho): Linear(in_features=300, out_features=13198, bias=False)
  (alphas): Linear(in_features=300, out_features=99, bias=False)
  (q_theta): Sequential(
    (0): Linear(in_features=13198, out_features=800, bias=True)
    (1): Sigmoid()
    (2): Linear(in_features=800, out_features=800, bias=True)
    (3): Sigmoid()
  )
  (mu_q_theta): Linear(in_features=800, out_features=99, bias=True)
  (logsigma_q_theta): Linear(in_features=800, out_features=99, bias=True)
)
*****
*****
Epoch---->1 .. LR: 0.005 .. KL_theta: 116.71 .. Rec_loss: 12002.98 .. NELBO:
12119.69
*****
*****
*****
Epoch---->2 .. LR: 0.005 .. KL_theta: 9.9 .. Rec_loss: 11987.72 .. NELBO:
11997.62
*****
```

```

*****
*****
*****
Epoch---->3 .. LR: 0.005 .. KL_theta: 0.87 .. Rec_loss: 11949.06 .. NELBO:
11949.93
*****
*****
*****
Epoch---->4 .. LR: 0.005 .. KL_theta: 0.15 .. Rec_loss: 11880.37 .. NELBO:
11880.52
*****
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*****
Epoch---->5 .. LR: 0.005 .. KL_theta: 0.06 .. Rec_loss: 11788.75 .. NELBO:
11788.81
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*****
Epoch---->6 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11691.51 .. NELBO:
11691.56
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*****
Epoch---->7 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11616.31 .. NELBO:
11616.36
*****
*****
*****
Epoch---->8 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11585.38 .. NELBO:
11585.43
*****
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*****
Epoch---->9 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11593.18 .. NELBO:
11593.23
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*****
Epoch---->10 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11605.87 .. NELBO:
11605.92
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*****
Epoch---->11 .. LR: 0.005 .. KL_theta: 0.05 .. Rec_loss: 11601.47 .. NELBO:
11601.52
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Epoch---->12 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11585.94 .. NELBO:
11585.98
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Epoch---->13 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11573.05 .. NELBO:
11573.09
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*****
Epoch---->14 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11568.67 .. NELBO:
11568.71
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*****
Epoch---->15 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11570.51 .. NELBO:
11570.55
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*****
Epoch---->16 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11573.03 .. NELBO:
11573.07
*****
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Epoch---->17 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11573.06 .. NELBO:
11573.1
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*****
Epoch---->18 .. LR: 0.005 .. KL_theta: 0.04 .. Rec_loss: 11570.14 .. NELBO:
11570.18
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Epoch---->19 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11565.7 .. NELBO:
11565.73
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Epoch---->20 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11562.72 .. NELBO:
11562.75
*****
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*****
Epoch---->21 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11562.27 .. NELBO:
11562.3
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*****
Epoch---->22 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11563.18 .. NELBO:
11563.21
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*****
Epoch---->23 .. LR: 0.005 .. KL_theta: 0.03 .. Rec_loss: 11563.67 .. NELBO:
11563.7
*****
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*****
Epoch---->24 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11563.21 .. NELBO:
11563.23
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*****
Epoch---->25 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11562.2 .. NELBO:
11562.22
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Epoch---->26 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11561.34 .. NELBO:
11561.36
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Epoch---->27 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11561.08 .. NELBO:
11561.1
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Epoch---->28 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11561.41 .. NELBO:
11561.43
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Epoch---->29 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11561.12 .. NELBO:
11561.14
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*****
Epoch---->30 .. LR: 0.005 .. KL_theta: 0.02 .. Rec_loss: 11561.12 .. NELBO:
11561.14
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Epoch---->31 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.62 .. NELBO:
11560.63
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Epoch---->32 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.49 .. NELBO:
11560.5
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Epoch---->33 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.5 .. NELBO:
11560.51
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Epoch---->34 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.38 .. NELBO:
11560.39
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Epoch---->35 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.75 .. NELBO:
11560.76
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Epoch---->36 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.74 .. NELBO:
11560.75
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Epoch---->37 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.42 .. NELBO:
11560.43
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Epoch---->38 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.42 .. NELBO:
11560.43
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Epoch---->39 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.34 .. NELBO:
11560.35
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Epoch---->40 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.33 .. NELBO:
11560.34
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Epoch---->41 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.41 .. NELBO:
11560.42
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Epoch---->42 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.52 .. NELBO:
11560.53
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Epoch---->43 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.33 .. NELBO:
11560.34
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Epoch---->44 .. LR: 0.005 .. KL_theta: 0.01 .. Rec_loss: 11560.2 .. NELBO:
11560.21
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Epoch---->45 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.24 .. NELBO:
11560.24
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Epoch---->46 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.38 .. NELBO:
11560.38
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Epoch---->47 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.45 .. NELBO:
11560.45
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Epoch---->48 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.33 .. NELBO:
11560.33
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Epoch---->49 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.36 .. NELBO:
11560.36
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Epoch---->50 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.4 .. NELBO:
11560.4
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Epoch---->51 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.23 .. NELBO:
11560.23
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Epoch---->52 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.27 .. NELBO:
11560.27
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Epoch---->53 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.2 .. NELBO:
11560.2
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Epoch---->54 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.26 .. NELBO:
11560.26
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Epoch---->55 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.19 .. NELBO:
11560.19
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Epoch---->56 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.29 .. NELBO:
11560.29
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Epoch---->57 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.37 .. NELBO:
11560.37
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Epoch---->58 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.58 .. NELBO:
11560.58
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Epoch---->59 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.29 .. NELBO:
11560.29
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Epoch---->60 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.44 .. NELBO:
11560.44
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Epoch---->61 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.4 .. NELBO:
11560.4
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Epoch---->62 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.36 .. NELBO:
11560.36
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Epoch---->63 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.44 .. NELBO:
11560.44
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Epoch---->64 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.38 .. NELBO:
11560.38
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Epoch---->65 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.45 .. NELBO:
11560.45
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Epoch---->66 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.32 .. NELBO:
11560.32
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Epoch---->67 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.32 .. NELBO:
11560.32
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Epoch---->68 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.41 .. NELBO:
11560.41
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Epoch---->69 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.27 .. NELBO:
11560.27
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Epoch---->70 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.34 .. NELBO:
11560.34
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Epoch---->71 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.46 .. NELBO:
11560.46
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Epoch---->72 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.43 .. NELBO:
11560.43
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Epoch---->73 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.3 .. NELBO:
11560.3
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Epoch---->74 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.35 .. NELBO:
11560.35
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Epoch---->75 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.34 .. NELBO:
11560.34
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Epoch---->76 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.39 .. NELBO:
11560.39
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Epoch---->77 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.4 .. NELBO:
11560.4
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Epoch---->78 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.34 .. NELBO:
11560.34
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Epoch---->79 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.35 .. NELBO:
11560.35
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Epoch---->80 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.4 .. NELBO:
11560.4
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Epoch---->81 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.43 .. NELBO:
11560.43
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Epoch---->82 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.44 .. NELBO:
11560.44
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Epoch---->83 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.42 .. NELBO:
11560.42
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Epoch---->84 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.3 .. NELBO:
11560.3
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Epoch---->85 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.33 .. NELBO:
11560.33
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Epoch---->86 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.4 .. NELBO:
11560.4
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Epoch---->87 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.33 .. NELBO:
11560.33
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Epoch---->88 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.45 .. NELBO:
11560.45
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Epoch---->89 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.15 .. NELBO:
11560.15
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Epoch---->90 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.38 .. NELBO:
11560.38
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Epoch---->91 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.29 .. NELBO:
11560.29
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Epoch---->92 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.43 .. NELBO:
11560.43
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Epoch---->93 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.27 .. NELBO:
11560.27
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Epoch---->94 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.37 .. NELBO:
11560.37
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Epoch---->95 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.32 .. NELBO:
11560.32
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Epoch---->96 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.4 .. NELBO:
11560.4
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Epoch---->97 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.65 .. NELBO:
11560.65
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Epoch---->98 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.16 .. NELBO:
11560.16
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Epoch---->99 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.28 .. NELBO:
11560.28
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Epoch---->100 .. LR: 0.005 .. KL_theta: 0.0 .. Rec_loss: 11560.54 .. NELBO:
11560.54
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[65]: dump(best_model_ETM, './octis/models/best_model_ETM.joblib', compress=('lzma', 9))
      best_model_ETM = load('./octis/models/best_model_ETM.joblib')

```

```

[66]: top_words_per_topic_ETM = best_model_ETM['topics']

# Display the top words for each topic
for topic_id, words in enumerate(top_words_per_topic_ETM):
    print("Topic", topic_id + 1, ":", words)

```

```

Topic 1 : ['willing', 'mistake', 'examined', 'understanding', 'pardon',
'travel', 'vivid', 'stage', 'sum', 'labour']
Topic 2 : ['remote', 'rapid', 'willing', 'sum', 'the', 'enthusiasm', 'forgive',
'obtained', 'labour', 'ice']
Topic 3 : ['sex', 'the', 'obtained', 'disappointment', 'ice', 'mistake',
'vivid', 'sum', 'forgive', 'willing']
Topic 4 : ['stage', 'sum', 'travel', 'the', 'willing', 'obtained', 'mistake',
'pardon', 'sex', 'understanding']
Topic 5 : ['mistake', 'willing', 'the', 'sum', 'endeavour', 'understanding',
'obtained', 'rapid', 'vivid', 'impatient']
Topic 6 : ['willing', 'vivid', 'stage', 'travel', 'size', 'forgive', 'remote',
'mistake', 'the', 'ice']
Topic 7 : ['willing', 'obtained', 'affections', 'mistake', 'date', 'rapid',
'examined', 'momentary', 'the', 'conducted']
Topic 8 : ['forgive', 'mistake', 'afterward', 'size', 'travel', 'willing',
'difference', 'examined', 'authority', 'rapid']
Topic 9 : ['understanding', 'forgive', 'momentary', 'willing', 'stage',
'travel', 'mistake', 'affections', 'vivid', 'the']
Topic 10 : ['sex', 'travel', 'mistake', 'coloured', 'magnificent', 'obtained',
'serve', 'afterward', 'chill', 'stage']
Topic 11 : ['stage', 'vivid', 'willing', 'mistake', 'the', 'examined',
'coloured', 'forgive', 'ice', 'affections']
Topic 12 : ['remote', 'willing', 'the', 'vivid', 'heir', 'enthusiasm',
'conducted', 'stage', 'sum', 'obtained']

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Topic 13 : ['the', 'disappointment', 'vivid', 'obtained', 'forgive', 'examined', 'size', 'enthusiasm', 'travel', 'stage']

Topic 14 : ['the', 'vivid', 'willing', 'understanding', 'stage', 'travel', 'momentary', 'mistake', 'sum', 'examined']

Topic 15 : ['stage', 'travel', 'forgive', 'examined', 'willing', 'conducted', 'disappointment', 'affections', 'enthusiasm', 'mistake']

Topic 16 : ['travel', 'obtained', 'disappointment', 'forgive', 'enemies', 'mistake', 'vivid', 'genuine', 'reward', 'hearth']

Topic 17 : ['the', 'abode', 'sex', 'stage', 'forgive', 'willing', 'affections', 'lightly', 'pardon', 'travel']

Topic 18 : ['stage', 'vivid', 'mistake', 'willing', 'travel', 'enthusiasm', 'examined', 'momentary', 'size', 'pardon']

Topic 19 : ['willing', 'size', 'heir', 'stage', 'sum', 'serve', 'vivid', 'travel', 'understanding', 'the']

Topic 20 : ['willing', 'the', 'mistake', 'stage', 'enthusiasm', 'enemies', 'sum', 'conducted', 'accordingly', 'pardon']

Topic 21 : ['travel', 'forgive', 'mistake', 'stage', 'vivid', 'sum', 'coloured', 'afterward', 'ice', 'momentary']

Topic 22 : ['willing', 'disappointment', 'stage', 'affections', 'understanding', 'vivid', 'profound', 'the', 'examined', 'mistake']

Topic 23 : ['travel', 'enthusiasm', 'endeavour', 'obtained', 'guilty', 'mistake', 'pardon', 'disappointment', 'fairy', 'genuine']

Topic 24 : ['willing', 'sum', 'momentary', 'disappointment', 'examined', 'understanding', 'obtained', 'the', 'folly', 'date']

Topic 25 : ['mistake', 'affections', 'the', 'sum', 'forgive', 'understanding', 'stage', 'obtained', 'travel', 'sex']

Topic 26 : ['willing', 'the', 'vivid', 'fairy', 'momentary', 'travel', 'obtained', 'faintly', 'disappointment', 'ice']

Topic 27 : ['understanding', 'stage', 'disappointment', 'the', 'travel', 'mistake', 'examined', 'momentary', 'endeavour', 'willing']

Topic 28 : ['examined', 'sex', 'remote', 'mistake', 'conducted', 'willing', 'vivid', 'obtained', 'lightly', 'the']

Topic 29 : ['stage', 'understanding', 'sum', 'willing', 'travel', 'housekeeper', 'obtained', 'heir', 'forgive', 'size']

Topic 30 : ['enemies', 'the', 'guide', 'lightly', 'momentary', 'mistake', 'foreign', 'stage', 'vivid', 'folly']

Topic 31 : ['the', 'obtained', 'lightly', 'date', 'travel', 'sex', 'contempt', 'housekeeper', 'mistake', 'enthusiasm']

Topic 32 : ['stage', 'ice', 'willing', 'vivid', 'enthusiasm', 'the', 'disappointment', 'momentary', 'obtained', 'travel']

Topic 33 : ['the', 'understanding', 'willing', 'vivid', 'travel', 'affections', 'stage', 'disappointment', 'obtained', 'enthusiasm']

Topic 34 : ['the', 'forgive', 'willing', 'guide', 'stage', 'understanding', 'mistake', 'disappointment', 'labour', 'guilty']

Topic 35 : ['willing', 'enthusiasm', 'disappointment', 'understanding', 'stage', 'the', 'coloured', 'mistake', 'sex', 'vivid']

Topic 36 : ['the', 'travel', 'stage', 'examined', 'enthusiasm', 'vivid', 'forgive', 'mistake', 'fairy', 'inclined']

Topic 37 : ['the', 'understanding', 'mistake', 'ice', 'travel', 'size', 'double', 'sum', 'stage', 'afterward']

Topic 38 : ['understanding', 'stage', 'affections', 'forgive', 'mistake', 'willing', 'rapid', 'sum', 'vivid', 'reputation']

Topic 39 : ['willing', 'disappointment', 'the', 'stage', 'conducted', 'affections', 'forgive', 'abode', 'vivid', 'understanding']

Topic 40 : ['willing', 'the', 'mistake', 'momentary', 'stage', 'rapid', 'ice', 'obtained', 'understanding', 'disappointment']

Topic 41 : ['stage', 'enemies', 'agitation', 'willing', 'travel', 'mistake', 'examined', 'affections', 'student', 'the']

Topic 42 : ['forgive', 'mistake', 'willing', 'stage', 'disappointment', 'examined', 'understanding', 'travel', 'conducted', 'the']

Topic 43 : ['understanding', 'reputation', 'guilty', 'disappointment', 'the', 'sum', 'willing', 'guide', 'enthusiasm', 'conducted']

Topic 44 : ['mistake', 'disappointment', 'stage', 'enemies', 'fellows', 'pardon', 'understanding', 'willing', 'sex', 'affections']

Topic 45 : ['mistake', 'disappointment', 'forgive', 'vivid', 'momentary', 'stage', 'willing', 'enthusiasm', 'ice', 'chill']

Topic 46 : ['willing', 'sum', 'ice', 'the', 'affections', 'momentary', 'conducted', 'heir', 'lightly', 'mistake']

Topic 47 : ['affections', 'the', 'stage', 'understanding', 'vivid', 'momentary', 'obtained', 'sum', 'willing', 'mistake']

Topic 48 : ['understanding', 'disappointment', 'vivid', 'stage', 'agitation', 'obtained', 'the', 'ice', 'travel', 'sex']

Topic 49 : ['willing', 'stage', 'the', 'sum', 'heir', 'travel', 'understanding', 'genuine', 'mistake', 'obtained']

Topic 50 : ['understanding', 'willing', 'vivid', 'the', 'stage', 'rapid', 'travel', 'mistake', 'remote', 'obtained']

Topic 51 : ['the', 'stage', 'sum', 'vivid', 'sex', 'enthusiasm', 'travel', 'remote', 'forgive', 'willing']

Topic 52 : ['the', 'willing', 'understanding', 'conducted', 'disappointment', 'obtained', 'sum', 'travel', 'heir', 'momentary']

Topic 53 : ['travel', 'sex', 'agitation', 'obtained', 'vivid', 'understanding', 'mistake', 'pardon', 'afterward', 'affections']

Topic 54 : ['understanding', 'travel', 'vivid', 'sole', 'stage', 'obtained', 'disappointment', 'the', 'afterward', 'sum']

Topic 55 : ['willing', 'vivid', 'the', 'understanding', 'stage', 'heir', 'affections', 'mistake', 'size', 'conducted']

Topic 56 : ['willing', 'conducted', 'understanding', 'stage', 'the', 'mistake', 'affections', 'obtained', 'examined', 'rapid']

Topic 57 : ['affections', 'willing', 'sex', 'enthusiasm', 'ice', 'mistake', 'understanding', 'labour', 'abode', 'lightly']

Topic 58 : ['heir', 'obtained', 'foreign', 'fairy', 'size', 'momentary', 'forgive', 'understanding', 'willing', 'mistake']

Topic 59 : ['the', 'stage', 'travel', 'enemies', 'sex', 'heir', 'willing', 'ice', 'sum', 'obtained']

Topic 60 : ['travel', 'enemies', 'endeavour', 'size', 'stage', 'sex', 'the', 'disappointment', 'willing', 'understanding']

Topic 61 : ['stage', 'mistake', 'size', 'endeavour', 'sum', 'travel', 'enthusiasm', 'understanding', 'willing', 'ice']

Topic 62 : ['vivid', 'honourable', 'understanding', 'enemies', 'heir', 'fairy', 'enthusiasm', 'warning', 'authority', 'the']

Topic 63 : ['conducted', 'obtained', 'understanding', 'willing', 'examined', 'stage', 'vivid', 'lightly', 'affections', 'disappointment']

Topic 64 : ['mistake', 'stage', 'willing', 'travel', 'examined', 'pardon', 'rapid', 'contempt', 'lightly', 'vivid']

Topic 65 : ['mistake', 'sex', 'stage', 'obtained', 'ice', 'examined', 'the', 'pardon', 'enemies', 'understanding']

Topic 66 : ['mistake', 'represented', 'the', 'stage', 'housekeeper', 'momentary', 'labour', 'willing', 'size', 'enthusiasm']

Topic 67 : ['willing', 'agitation', 'contempt', 'prince', 'sum', 'momentary', 'vivid', 'mistake', 'stage', 'examined']

Topic 68 : ['stage', 'the', 'endeavour', 'sum', 'enthusiasm', 'willing', 'mistake', 'size', 'examined', 'vivid']

Topic 69 : ['willing', 'stage', 'disappointment', 'warning', 'obtained', 'travel', 'mistake', 'the', 'forgive', 'conducted']

Topic 70 : ['willing', 'mistake', 'guide', 'the', 'conducted', 'rapid', 'disappointment', 'travel', 'affections', 'understanding']

Topic 71 : ['vivid', 'remote', 'obtained', 'disappointment', 'the', 'understanding', 'willing', 'sex', 'endeavour', 'sole']

Topic 72 : ['willing', 'understanding', 'the', 'disappointment', 'travel', 'vivid', 'stage', 'lightly', 'size', 'remote']

Topic 73 : ['vivid', 'the', 'momentary', 'willing', 'enemies', 'obtained', 'sum', 'rapid', 'heir', 'endeavour']

Topic 74 : ['willing', 'understanding', 'stage', 'the', 'obtained', 'lightly', 'pardon', 'mistake', 'enthusiasm', 'sex']

Topic 75 : ['stage', 'the', 'sex', 'mistake', 'guilty', 'double', 'forgive', 'willing', 'obtained', 'endeavour']

Topic 76 : ['sum', 'the', 'willing', 'understanding', 'ice', 'disappointment', 'enthusiasm', 'remote', 'travel', 'heir']

Topic 77 : ['travel', 'mistake', 'vivid', 'the', 'disappointment', 'obtained', 'stage', 'ice', 'enemies', 'endeavour']

Topic 78 : ['understanding', 'sum', 'the', 'enthusiasm', 'conducted', 'guilty', 'affections', 'travel', 'labour', 'forgive']

Topic 79 : ['mistake', 'willing', 'enthusiasm', 'stage', 'size', 'the', 'vivid', 'affections', 'warning', 'disappointment']

Topic 80 : ['understanding', 'the', 'willing', 'vivid', 'mistake', 'enthusiasm', 'affections', 'stage', 'savage', 'conducted']

Topic 81 : ['willing', 'mistake', 'sum', 'fellows', 'vivid', 'understanding', 'heir', 'serve', 'lightly', 'disappointment']

Topic 82 : ['stage', 'willing', 'obtained', 'the', 'housekeeper', 'sum', 'agitation', 'disappointment', 'ice', 'conducted']

Topic 83 : ['stage', 'willing', 'mistake', 'sex', 'understanding', 'the', 'obtained', 'sum', 'enthusiasm', 'travel']

Topic 84 : ['mistake', 'travel', 'vivid', 'stage', 'examined', 'the', 'sum', 'forgive', 'pardon', 'heir']

Topic 85 : ['travel', 'prince', 'disappointment', 'fellows', 'mistake', 'stage', 'willing', 'hearth', 'sum', 'affections']

Topic 86 : ['mistake', 'travel', 'obtained', 'ice', 'foreign', 'momentary', 'the', 'stage', 'folly', 'willing']

Topic 87 : ['stage', 'willing', 'momentary', 'obtained', 'understanding', 'disappointment', 'fairy', 'sex', 'guide', 'agitation']

Topic 88 : ['the', 'willing', 'stage', 'beating', 'forgive', 'understanding', 'travel', 'endeavour', 'obtained', 'mistake']

Topic 89 : ['disappointment', 'savage', 'examined', 'understanding', 'willing', 'the', 'ice', 'vivid', 'pardon', 'enthusiasm']

Topic 90 : ['travel', 'vivid', 'ice', 'fairy', 'mistake', 'willing', 'guilty', 'rapid', 'the', 'forgive']

Topic 91 : ['willing', 'understanding', 'remote', 'mistake', 'travel', 'the', 'vivid', 'stage', 'sum', 'enemies']

Topic 92 : ['disappointment', 'examined', 'remote', 'willing', 'the', 'mistake', 'obtained', 'sex', 'understanding', 'endeavour']

Topic 93 : ['enthusiasm', 'willing', 'stage', 'sex', 'forgive', 'the', 'obtained', 'conducted', 'sum', 'lightly']

Topic 94 : ['travel', 'splendid', 'stage', 'foreign', 'mistake', 'the', 'understanding', 'size', 'coloured', 'obtained']

Topic 95 : ['travel', 'disappointment', 'sex', 'the', 'mistake', 'obtained', 'stage', 'pardon', 'guilty', 'fellows']

Topic 96 : ['mistake', 'enemies', 'travel', 'forgive', 'stage', 'the', 'size', 'vivid', 'sex', 'guide']

Topic 97 : ['mistake', 'the', 'forgive', 'stage', 'pardon', 'vivid', 'enemies', 'understanding', 'serve', 'willing']

Topic 98 : ['mistake', 'travel', 'stage', 'willing', 'understanding', 'forgive', 'rapid', 'affections', 'the', 'date']

Topic 99 : ['examined', 'understanding', 'stage', 'enemies', 'willing', 'serve', 'the', 'forgive', 'sum', 'faintly']

```
[67]: dump(top_words_per_topic_ETM, './analysis/top_words_per_topic_ETM.joblib')
```

```
[67]: ['./analysis/top_words_per_topic_ETM.joblib']
```

```
[68]: topic_document_matrix_ETM = best_model_ETM["topic-document-matrix"]
topic_distribution_df_ETM = □
↳ get_document_topic_percentages(topic_document_matrix_ETM)
topic_distribution_df_ETM.head(10)
```

```
[68]:
```

	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6	Topic 7	\
Document ID								
0	1.01	1.01	1.01	1.01	1.01	1.01	1.01	
1	1.01	1.01	1.01	1.01	1.01	1.01	1.01	
2	1.01	1.01	1.01	1.01	1.01	1.01	1.01	
3	1.01	1.01	1.01	1.01	1.01	1.01	1.01	
4	1.01	1.01	1.01	1.01	1.01	1.01	1.01	
5	1.01	1.01	1.01	1.01	1.01	1.01	1.01	

6	1.01	1.01	1.01	1.01	1.01	1.01	1.01
7	1.01	1.01	1.01	1.01	1.01	1.01	1.01
8	1.01	1.01	1.01	1.01	1.01	1.01	1.01
9	1.01	1.01	1.01	1.01	1.01	1.01	1.01

	Topic 8	Topic 9	Topic 10	...	Topic 90	Topic 91	Topic 92	\
Document ID				...				
0	1.01	1.01	1.01	...	1.01	1.01	1.01	
1	1.01	1.01	1.01	...	1.01	1.01	1.01	
2	1.01	1.01	1.01	...	1.01	1.01	1.01	
3	1.01	1.01	1.01	...	1.01	1.01	1.01	
4	1.01	1.01	1.01	...	1.01	1.01	1.01	
5	1.01	1.01	1.01	...	1.01	1.01	1.01	
6	1.01	1.01	1.01	...	1.01	1.01	1.01	
7	1.01	1.01	1.01	...	1.01	1.01	1.01	
8	1.01	1.01	1.01	...	1.01	1.01	1.01	
9	1.01	1.01	1.01	...	1.01	1.01	1.01	

	Topic 93	Topic 94	Topic 95	Topic 96	Topic 97	Topic 98	\
Document ID							
0	1.01	1.01	1.01	1.01	1.01	1.01	
1	1.01	1.01	1.01	1.01	1.01	1.01	
2	1.01	1.01	1.01	1.01	1.01	1.01	
3	1.01	1.01	1.01	1.01	1.01	1.01	
4	1.01	1.01	1.01	1.01	1.01	1.01	
5	1.01	1.01	1.01	1.01	1.01	1.01	
6	1.01	1.01	1.01	1.01	1.01	1.01	
7	1.01	1.01	1.01	1.01	1.01	1.01	
8	1.01	1.01	1.01	1.01	1.01	1.01	
9	1.01	1.01	1.01	1.01	1.01	1.01	

	Topic 99
Document ID	
0	1.01
1	1.01
2	1.01
3	1.01
4	1.01
5	1.01
6	1.01
7	1.01
8	1.01
9	1.01

[10 rows x 99 columns]

```
[69]: original_indexes = dataset_final._Dataset__original_indexes
      topic_distribution_df_ETM['Original Document Index'] = original_indexes
```

```
[70]: df_input['input_index'] = df_input.index
      df_input['ref'] = df_input['reference'].apply(lambda x: x.rsplit('_', 1)[0])
      df_merge = df_input.merge(df_ref, left_on='ref', right_on='reference',
                                how='left')
      df_merge['date'] = df_merge['date'].astype('Int64')
      df_merge['birthdate'] = df_merge['birthdate'].astype('Int64')
      df_merge.head()
```

```
[70]:                                     preprocessed_text_x      reference_x \
0  fragment adventure turned steed hoping cross d...      Aikin_SirBertran_1
1  plague portion ensuing relating street manner ...  Ainsworth_OldSaintPa_1
2  whatsoever away terms included language charac...  Ainsworth_Rookwood_1
3  doll wangos leaving justice skill witches spea...  Ainsworth_TheLancash_1
4  note text little work finished year intended i...      Austen_Northanger_1
```

	sentiment	input_index	ref	index	reference_y \
0	-0.9201	0	Aikin_SirBertran	0	Aikin_SirBertran
1	0.9773	1	Ainsworth_OldSaintPa	1	Ainsworth_OldSaintPa
2	0.9989	2	Ainsworth_Rookwood	2	Ainsworth_Rookwood
3	-0.9998	3	Ainsworth_TheLancash	3	Ainsworth_TheLancash
4	1.0000	4	Austen_Northanger	5	Austen_Northanger

	title \
0	Sir Bertrand, A Fragment
1	Old Saint Paul's: A Tale of the Plague and the...
2	Rookwood
3	The Lancashire Witches: A Romance of Pendle Fo...
4	Northanger Abbey

	author	date	...	mode	genre	gender \
0	Aikin, John and Anna Laetitia	1773	...	Fragment	Gothic	NaN
1	Ainsworth, William Harrison	1841	...	NaN	NaN	m
2	Ainsworth, William Harrison	1834	...	Novel	Gothic	m
3	Ainsworth, William Harrison	1848	...	NaN	NaN	m
4	Austen, Jane	1817	...	NaN	NaN	f

	birthdate	nationality	role (central/peripheral/influence) \
0	<NA>	English	Central
1	1805	English	NaN
2	1805	English	Central
3	1805	English	NaN
4	1775	English	NaN

	text	source \
--	------	----------


```

0 SIR BERTRAND, A FRAGMENT:\n\nAFTER this advent... colors
1 OLD SAINT PAUL\'S\n\n _A TALE OF THE PLAGUE\nn... pb-manual
2 \nThe Project Gutenberg EBook of Rookwood, by ... colors
3 Proofreading Team.\n\n\n\n\n\n\n[Illustration:... pb-manual
4 Northanger Abbey\n\n\nby Jane Austen\n\n\n(1803)... gutenberg

```

```

                                preprocessed_text_y \
0 fragment adventure turned steed hoping cross d...
1 plague portion ensuing relating street manner ...
2 whatsoever away terms included language charac...
3 doll wangos leaving justice skill witches spea...
4 note text little work finished year intended i...

```

```

                                tokenized_text
0 ['fragment', 'adventure', 'turned', 'steed', '...'
1 ['plague', 'portion', 'ensuing', 'relating', '...'
2 ['whatsoever', 'away', 'terms', 'included', 'l...'
3 ['doll', 'wangos', 'leaving', 'justice', 'skil...'
4 ['note', 'text', 'little', 'work', 'finished', '...'

```

[5 rows x 21 columns]

```

[71]: # merging of topic distribution with features
# reorganizing the order of columns and clean up
df_txt_features_ETM = df_merge.merge(topic_distribution_df_ETM,
    ↳right_on='Original Document Index', left_on='input_index')
df_txt_features_ETM=df_txt_features_ETM.drop(['text',
    ↳'preprocessed_text_y','tokenized_text','preprocessed_text_x', 'index',
    ↳'ref', 'Original Document Index'], axis=1)
df_txt_features_ETM.rename(columns={'reference_x': 'reference','reference_y':
    ↳'text_key'}, inplace=True)
df_txt_features_ETM = df_txt_features_ETM[['input_index'] + [col for col in
    ↳df_txt_features_ETM.columns if col != 'input_index']]
df_txt_features_ETM.rename(columns={'role (central/peripheral/influence)':
    ↳'role'}, inplace=True)
df_txt_features_ETM.head()

```

```

[71]:   input_index      reference  sentiment      text_key \
0           0  Aikin_SirBertran_1    -0.9201  Aikin_SirBertran
1           1 Ainsworth_OldSaintPa_1    0.9773 Ainsworth_OldSaintPa
2           2  Ainsworth_Rookwood_1    0.9989  Ainsworth_Rookwood
3           3 Ainsworth_TheLancash_1   -0.9998 Ainsworth_TheLancash
4           4  Austen_Northanger_1    1.0000  Austen_Northanger

```

```

                                title \
0                               Sir Bertrand, A Fragment
1  Old Saint Paul's: A Tale of the Plague and the...

```

```

2                                Rookwood
3 The Lancashire Witches: A Romance of Pendle Fo...
4                                Northanger Abbey

```

	author	date	period	mode	genre	...	\
0	Aikin, John and Anna Laetitia	1773	Romantic	Fragment	Gothic	...	
1	Ainsworth, William Harrison	1841	NaN	NaN	NaN	...	
2	Ainsworth, William Harrison	1834	NaN	Novel	Gothic	...	
3	Ainsworth, William Harrison	1848	NaN	NaN	NaN	...	
4	Austen, Jane	1817	NaN	NaN	NaN	...	

	Topic 90	Topic 91	Topic 92	Topic 93	Topic 94	Topic 95	Topic 96	Topic 97	\
0	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	
1	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	
2	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	
3	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	
4	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	

	Topic 98	Topic 99
0	1.01	1.01
1	1.01	1.01
2	1.01	1.01
3	1.01	1.01
4	1.01	1.01

[5 rows x 114 columns]

```

[72]: df_txt_features_ETM.to_csv('./analysis/df_txt_features_ETM.csv', index=False)
      #df_txt_features_ETM=pd.read_csv('./analysis/df_txt_features_ETM.csv')

```

pyLDAvis exports

```

[73]: topic_term_dists_ETM = best_model_ETM["topic-word-matrix"]
      doc_topic_dists_ETM = best_model_ETM["topic-document-matrix"]
      doc_topic_dists_ETM = doc_topic_dists_ETM.T

```

```

[74]: dump(topic_term_dists_ETM, './analysis/topic_term_dists_ETM.joblib')
      dump(doc_topic_dists_ETM, './analysis/doc_topic_dists_ETM.joblib')

```

```

[74]: ['./analysis/doc_topic_dists_ETM.joblib']

```