Discover topics from Enron Emails: A demo of how NTM works

Introduction

In this notebook, we will look at discovering topics from enron emails. Neural Topic Model (NTM) from Amazon SageMaker uses neural networks to learn word embeddings or topics. The word embeddings are derived by minimizing loss when building stochastic representation of input documents/emails.

First, we build bag of words representation of each email, with each column representing a word and each row representing an email. The values in the matrix are number of times each word is repeated in a given email. We then scale the counts by multiplying them with TF-IDF factor (Term Frequency-Inverse Document Frequency). This factor ensures that words that are specific to a given email and are not repeated frequently across all emails are given higher weight, relative to the words that commonly occur across all emails (for ex: the, so, as, because etc).

The prepared bag of words representation of emails is then fed into a neural network whose architecture is defined by the hyperparameters listed below. The network optimizes across several epochs by minimizing loss in building stochastic representation of emails (topic embeddings) and in reconstructing original emails from topic embeddings.

The dataset for this notebook is downloaded from UCI Machine Learning Repository. It primarily contains list of words (vocabulary) used across all emails and a lookup table detailing number of occurrences of a word in a given email (EmailID WordID Count)

In [89]:
```
# **Acknowledgements, Copyright Information, and Availability**
#Dua, D. and Graff, C. (2019). UCI Machine Learning Repository [http://archive.ics.uci.edu/ml]. I

import pandas as pd
import numpy as np
import io
import json
from sklearn.preprocessing import normalize
from scipy.sparse import csr_matrix
```

```
from scipy.sparse import issparse
import os
import boto3
import sagemaker
from sagemaker import get_execution_role
# from sagemaker.amazon.amazon_estimator import get_image_uri
from sagemaker import image_uris
from sagemaker.session import s3_input
from sagemaker.model import Model
from sagemaker.predictor import Predictor
# from sagemaker.predictor import csv_serializer, json_deserializer
from sagemaker.serializers import CSVSerializer
from sagemaker.deserializers import JSONDeserializer
import warnings
warnings.simplefilter(action='ignore')
warnings.simplefilter(action='ignore', category=FutureWarning)
```

Preprocessing

First, let's run user defined functions used to conduct common operations

In [3]:
```
run bowemails.py
```

Create Bag-of-Words and Vocabulary

We will only take 10% of emails to have a manageable dataset

In [4]:
```
ip_fn = '../data/docword.enron.txt.gz'
percent_emails = .10 # get only a x% of emails to avoid memory errors
vocab_ip_fn = '../data/vocab.enron.txt'
vocab_op_fn = '../data/vocab.txt'

#Get bag-of-words from input of enron emails
# We will filter emails to reduce data size
# Create vocabulary based on the subset of emails that will be sent to training
pvt_emails = prepare_bow_vocab(ip_fn, percent_emails, vocab_ip_fn, vocab_op_fn)
```

In [5]:
```
pvt_emails.head()
```

Out[5]:

word_ID	1	3	4	8	9	15	16	19	20	21	...	28090	28091	28092	28093	28095	28096	28097	28098	28
email_ID																				
1	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	0	...	0	0	0	0	0	0	0	0	

5 rows × 17524 columns

In [6]:
```
pvt_emails.shape
```

Out[6]:
```
(3986, 17524)
```

TF-IDF Term Frequency Inverse Document Frequency

We assume that the words that help surface topics are those that are not repeated across all emails but are common within an email.

In [7]:
```
tfidf_emails = TF_IDF(pvt_emails)
```

In [8]:
```
# convert pivoted dataframe to compressed sparse row matrix
# compressed sparse row matrix contains row pointer, column index and values
sparse_emails = csr_matrix(pvt_emails, dtype=np.float32)
print(sparse_emails[:16].toarray())
```

```
[[0. 0. 0. ... 0. 0. 0.]
 [0. 0. 0. ... 0. 0. 0.]
 [0. 0. 0. ... 0. 0. 0.]
 ...
 [0. 0. 0. ... 0. 0. 0.]
 [0. 0. 0. ... 0. 0. 0.]
 [0. 0. 0. ... 0. 0. 0.]]
```

In [9]:
```
type(sparse_emails)
```

Out[9]:
```
scipy.sparse._csr.csr_matrix
```

Create Training Validation and Test Datasets

In [10]:
```
vol_train = int(0.8 * sparse_emails.shape[0])

# split train and test
train_data = sparse_emails[:vol_train, :]
test_data = sparse_emails[vol_train:, :]

# further split test set into validation set and test set
vol_test = test_data.shape[0]
val_data = test_data[:vol_test//2, :]
test_data = test_data[vol_test//2:, :]
```

In [11]:
```
print(train_data.shape, test_data.shape, val_data.shape)
```

```
(3188, 17524) (399, 17524) (399, 17524)
```

Store Data on S3

The NTM algorithm, and other built-in SageMaker algorithms, accepts data in CSV or RecordIO Protobuf format. SageMaker algorithms work the best when input data is provided in RecordIO wrapped Protobuf format, an efficient format to encode/serialize structured data

In [14]:
```
role = get_execution_role()
# provide your bucket name here
#bucket = '<bucket-name>'
```

```
bucket = 'ai620-in-aws'
prefix = 'enronemails'

train_prefix = os.path.join(prefix, 'train')
val_prefix = os.path.join(prefix, 'val')
output_prefix = os.path.join(prefix, 'output')
aux_prefix = os.path.join(prefix, 'aux')

s3loc_train_data = os.path.join('s3://', bucket, train_prefix)
s3loc_val_data = os.path.join('s3://', bucket, val_prefix)
s3loc_aux_data = os.path.join('s3://', bucket, aux_prefix)
output_path = os.path.join('s3://', bucket, output_prefix)
```

Partition the training data for parallel processing

In [15]:
```
# Convert compressed sparse row matrix to recordio-wrapped-protobuf format
# RecordIO is used to efficiently load large datasets (data can be read continuously and stored

convert_to_pbr(train_data, bucket=bucket, prefix=train_prefix, fname_template='emails_train_part
convert_to_pbr(val_data, bucket=bucket, prefix=val_prefix, fname_template='emails_val_part{}.pbr
```

Model Training

To train NTM in SageMaker, we obtain registry path of training docker image of NTM. Additionally, we create Estimator object from SageMaker Python SDK to provide infrastructure specifications. Then, we set hyperparameters and call fit() method of the estimator created to start training.

In [22]:
```
#container = get_image_uri(boto3.Session().region_name, 'ntm')

# Retrieve the container image URI for Neural Topic Model
region = boto3.Session().region_name
container = image_uris.retrieve('ntm', region)

print(f"Container URI for NTM: {container}")
```

```
Container URI for NTM: 382416733822.dkr.ecr.us-east-1.amazonaws.com/ntm:1
```

In [62]:
```
# sess = sagemaker.Session()
# ntm_estmtr = sagemaker.estimator.Estimator(container,
#                                    role,
#                                    train_instance_count=2,
#                                    train_instance_type='ml.c4.xlarge',
#                                    output_path=output_path,
#                                    sagemaker_session=sess)
# Create a SageMaker session
sess = sagemaker.Session()

# Define the estimator
ntm_estmtr = sagemaker.estimator.Estimator(
    container,
    role,
    instance_count=2,  # Updated from train_instance_count
    instance_type='ml.c4.xlarge',  # Updated from train_instance_type
    output_path=output_path,
    sagemaker_session=sess
)
```

Set Hyperparameters

feature_dim - Represents the size of feature vector. It is set to vocabulary size
num_topics - Represents number of topics to extract. We can choose a number here and adjust it based on model performance on test set
mini_batch_size - Represents number of training examples to process before updating weights
epochs - Represents number of backward and forward passes
num_patience_epochs Represents maximum number of bad epochs (epochs where loss does not improve) executed before stopping
optimizer - We use Adadelta optimization algorithm. Adpative Delta gradient is an enhanced version of Adagrad (Adaptive Gradient), where learning rate decreases based on rolling window of gradient updates vs all past gradient updates
tolerance - Represents threshold for change in loss function - the trainining stops early if the change in loss within the last designated number of patience epochs falls below this threshold

In [63]:
```
num_topics = 3
vocab_size = 17524 # from shape from pivoted emails dataframe
ntm_estmtr.set_hyperparameters(num_topics=num_topics,
                          feature_dim=vocab_size,
                          mini_batch_size=30,
                          epochs=150,
                          num_patience_epochs=5,
                          tolerance=.001)
```

In [64]:
```
# Upload vocabulary file to auxiliary folder on S3 bucket -- this is used to identify words assoc
# aux_path = s3_aux_data + "/"
aux_path = s3loc_aux_data + "/"

!aws s3 cp $vocab_op_fn $aux_path
```

```
upload: ../data/vocab.txt to s3://ai620-in-aws/enronemails/aux/vocab.txt
```

In [65]:
```
# s3_train = s3_input(s3loc_train_data, distribution='ShardedByS3Key', content_type='application/
s3_train = sagemaker.inputs.TrainingInput(s3loc_train_data, distribution='ShardedByS3Key', conte

# s3_val = s3_input(s3loc_val_data, distribution='FullyReplicated', content_type='application/x-r
s3_val = sagemaker.inputs.TrainingInput(s3loc_val_data, distribution='FullyReplicated', content_

# s3_aux = s3_input(s3loc_aux_data, distribution='FullyReplicated', content_type='text/plain')
s3_aux = sagemaker.inputs.TrainingInput(s3loc_aux_data, distribution='FullyReplicated', content_
# s3_aux = "s3://ai620-in-aws/enronemails/auxiliary/"
```

In [66]:
```
ntm_estmtr.fit({'train': s3_train, 'validation': s3_val, 'auxiliary': s3_aux})
```

```
INFO:sagemaker:Creating training-job with name: ntm-2024-11-25-08-12-09-791
```

```
2024-11-25 08:12:11 Starting - Starting the training job...
2024-11-25 08:12:25 Starting - Preparing the instances for training...
2024-11-25 08:13:01 Downloading - Downloading input data...
2024-11-25 08:13:26 Downloading - Downloading the training image.....................Docker entry
point called with argument(s): train
Running default environment configuration script
/opt/amazon/lib/python3.8/site-packages/mxnet/model.py:97: SyntaxWarning: "is" with a literal. D
id you mean "=="?
  if num_device is 1 and 'dist' not in kvstore:
[11/25/2024 08:17:00 INFO 140585769518912] Reading default configuration from /opt/amazon/lib/py
thon3.8/site-packages/algorithm/default-input.json: {'encoder_layers': 'auto', 'mini_batch_siz
e': '256', 'epochs': '50', 'encoder_layers_activation': 'sigmoid', 'optimizer': 'adadelta', 'tol
erance': '0.001', 'num_patience_epochs': '3', 'batch_norm': 'false', 'rescale_gradient': '1.0',
'clip_gradient': 'Inf', 'weight_decay': '0.0', 'learning_rate': '0.01', 'sub_sample': '1.0', '_t
uning_objective_metric': '', '_data_format': 'record', '_num_gpus': 'auto', '_num_kv_servers':
'auto', '_kvstore': 'auto_gpu'}
[11/25/2024 08:17:00 INFO 140585769518912] Merging with provided configuration from /opt/ml/inpu
t/config/hyperparameters.json: {'epochs': '150', 'feature_dim': '17524', 'mini_batch_size': '3
0', 'num_patience_epochs': '5', 'num_topics': '3', 'tolerance': '0.001'}
[11/25/2024 08:17:00 INFO 140585769518912] Final configuration: {'encoder_layers': 'auto', 'mini
_batch_size': '30', 'epochs': '150', 'encoder_layers_activation': 'sigmoid', 'optimizer': 'adade
lta', 'tolerance': '0.001', 'num_patience_epochs': '5', 'batch_norm': 'false', 'rescale_gradien
t': '1.0', 'clip_gradient': 'Inf', 'weight_decay': '0.0', 'learning_rate': '0.01', 'sub_sample':
'1.0', '_tuning_objective_metric': '', '_data_format': 'record', '_num_gpus': 'auto', '_num_kv_s
ervers': 'auto', '_kvstore': 'auto_gpu', 'feature_dim': '17524', 'num_topics': '3'}
/opt/amazon/python3.8/lib/python3.8/subprocess.py:848: RuntimeWarning: line buffering (buffering
=1) isn't supported in binary mode, the default buffer size will be used
  self.stdout = io.open(c2pread, 'rb', bufsize)
[11/25/2024 08:17:01 INFO 140585769518912] nvidia-smi: took 0.031 seconds to run.
[11/25/2024 08:17:01 INFO 140585769518912] nvidia-smi identified 0 GPUs.
[11/25/2024 08:17:01 INFO 140585769518912] Launching parameter server for role scheduler
[11/25/2024 08:17:01 INFO 140585769518912] {'ENVROOT': '/opt/amazon', 'PROTOCOL_BUFFERS_PYTHON_I
MPLEMENTATION': 'cpp', 'HOSTNAME': 'ip-10-0-167-255.ec2.internal', 'TRAINING_JOB_NAME': 'ntm-202
4-11-25-08-12-09-791', 'NVIDIA_REQUIRE_CUDA': 'cuda>=9.0', 'TRAINING_JOB_ARN': 'arn:aws:sagemake
r:us-east-1:850995577816:training-job/ntm-2024-11-25-08-12-09-791', 'AWS_CONTAINER_CREDENTIALS_R
ELATIVE_URI': '/v2/credentials/proxy-408822fc4a154061df79f31ef5076976c964ef7b6277c69119f09751138
dc00b-customer', 'CANONICAL_ENVROOT': '/opt/amazon', 'PYTHONUNBUFFERED': 'TRUE', 'NVIDIA_VISIBLE
_DEVICES': 'all', 'LD_LIBRARY_PATH': '/opt/amazon/lib/python3.8/site-packages/cv2/../../../../li
b:/usr/local/nvidia/lib64:/opt/amazon/lib', 'NVIDIA_DRIVER_CAPABILITIES': 'compute,utility', 'SA
GEMAKER_MANAGED_WARMPOOL_CACHE_DIRECTORY': '/opt/ml/sagemaker/warmpoolcache', 'PATH': '/opt/amaz
on/bin:/usr/local/nvidia/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin', 'MXN
ET_STORAGE_FALLBACK_LOG_VERBOSE': '0', 'PWD': '/', 'LANG': 'en_US.utf8', 'AWS_REGION': 'us-east-
1', 'SAGEMAKER_METRICS_DIRECTORY': '/opt/ml/output/metrics/sagemaker', 'CUDA_VERSION': '11.1',
'HOME': '/root', 'SHLVL': '1', 'CUDA_COMPAT_NDRIVER_SUPPORTED_VERSION': '455.32.00', 'PROTOCOL_B
UFFERS_PYTHON_IMPLEMENTATION_VERSION': '2', 'OMP_NUM_THREADS': '2', 'DMLC_INTERFACE': 'eth0', 'S
AGEMAKER_HTTP_PORT': '8080', 'SAGEMAKER_DATA_PATH': '/opt/ml'}
[11/25/2024 08:17:01 INFO 140585769518912] envs={'ENVROOT': '/opt/amazon', 'PROTOCOL_BUFFERS_PYT
HON_IMPLEMENTATION': 'cpp', 'HOSTNAME': 'ip-10-0-167-255.ec2.internal', 'TRAINING_JOB_NAME': 'nt
m-2024-11-25-08-12-09-791', 'NVIDIA_REQUIRE_CUDA': 'cuda>=9.0', 'TRAINING_JOB_ARN': 'arn:aws:sag
emaker:us-east-1:850995577816:training-job/ntm-2024-11-25-08-12-09-791', 'AWS_CONTAINER_CREDENTI
ALS_RELATIVE_URI': '/v2/credentials/proxy-408822fc4a154061df79f31ef5076976c964ef7b6277c69119f097
51138dc00b-customer', 'CANONICAL_ENVROOT': '/opt/amazon', 'PYTHONUNBUFFERED': 'TRUE', 'NVIDIA_VI
SIBLE_DEVICES': 'all', 'LD_LIBRARY_PATH': '/opt/amazon/lib/python3.8/site-packages/cv
2/../../../../lib:/usr/local/nvidia/lib64:/opt/amazon/lib', 'NVIDIA_DRIVER_CAPABILITIES': 'compu
te,utility', 'SAGEMAKER_MANAGED_WARMPOOL_CACHE_DIRECTORY': '/opt/ml/sagemaker/warmpoolcache', 'P
ATH': '/opt/amazon/bin:/usr/local/nvidia/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/
sbin:/bin', 'MXNET_STORAGE_FALLBACK_LOG_VERBOSE': '0', 'PWD': '/', 'LANG': 'en_US.utf8', 'AWS_RE
GION': 'us-east-1', 'SAGEMAKER_METRICS_DIRECTORY': '/opt/ml/output/metrics/sagemaker', 'CUDA_VER
SION': '11.1', 'HOME': '/root', 'SHLVL': '1', 'CUDA_COMPAT_NDRIVER_SUPPORTED_VERSION': '455.32.0
```

0', 'PROTOCOL_BUFFERS_PYTHON_IMPLEMENTATION_VERSION': '2', 'OMP_NUM_THREADS': '2', 'DMLC_INTERFACE': 'eth0', 'SAGEMAKER_HTTP_PORT': '8080', 'SAGEMAKER_DATA_PATH': '/opt/ml', 'DMLC_ROLE': 'scheduler', 'DMLC_PS_ROOT_URI': '10.0.167.255', 'DMLC_PS_ROOT_PORT': '9000', 'DMLC_NUM_SERVER': '2', 'DMLC_NUM_WORKER': '2'}
[11/25/2024 08:17:01 INFO 140585769518912] Launching parameter server for role server
[11/25/2024 08:17:01 INFO 140585769518912] {'ENVROOT': '/opt/amazon', 'PROTOCOL_BUFFERS_PYTHON_IMPLEMENTATION': 'cpp', 'HOSTNAME': 'ip-10-0-167-255.ec2.internal', 'TRAINING_JOB_NAME': 'ntm-2024-11-25-08-12-09-791', 'NVIDIA_REQUIRE_CUDA': 'cuda>=9.0', 'TRAINING_JOB_ARN': 'arn:aws:sagemaker:us-east-1:850995577816:training-job/ntm-2024-11-25-08-12-09-791', 'AWS_CONTAINER_CREDENTIALS_RELATIVE_URI': '/v2/credentials/proxy-408822fc4a154061df79f31ef5076976c964ef7b6277c69119f09751138dc00b-customer', 'CANONICAL_ENVROOT': '/opt/amazon', 'PYTHONUNBUFFERED': 'TRUE', 'NVIDIA_VISIBLE_DEVICES': 'all', 'LD_LIBRARY_PATH': '/opt/amazon/lib/python3.8/site-packages/cv2/../../../../lib:/usr/local/nvidia/lib64:/opt/amazon/lib', 'NVIDIA_DRIVER_CAPABILITIES': 'compute,utility', 'SAGEMAKER_MANAGED_WARMPOOL_CACHE_DIRECTORY': '/opt/ml/sagemaker/warmpoolcache', 'PATH': '/opt/amazon/bin:/usr/local/nvidia/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin', 'MXNET_STORAGE_FALLBACK_LOG_VERBOSE': '0', 'PWD': '/', 'LANG': 'en_US.utf8', 'AWS_REGION': 'us-east-1', 'SAGEMAKER_METRICS_DIRECTORY': '/opt/ml/output/metrics/sagemaker', 'CUDA_VERSION': '11.1', 'HOME': '/root', 'SHLVL': '1', 'CUDA_COMPAT_NDRIVER_SUPPORTED_VERSION': '455.32.00', 'PROTOCOL_BUFFERS_PYTHON_IMPLEMENTATION_VERSION': '2', 'OMP_NUM_THREADS': '2', 'DMLC_INTERFACE': 'eth0', 'SAGEMAKER_HTTP_PORT': '8080', 'SAGEMAKER_DATA_PATH': '/opt/ml'}
[11/25/2024 08:17:01 INFO 140585769518912] envs={'ENVROOT': '/opt/amazon', 'PROTOCOL_BUFFERS_PYTHON_IMPLEMENTATION': 'cpp', 'HOSTNAME': 'ip-10-0-167-255.ec2.internal', 'TRAINING_JOB_NAME': 'ntm-2024-11-25-08-12-09-791', 'NVIDIA_REQUIRE_CUDA': 'cuda>=9.0', 'TRAINING_JOB_ARN': 'arn:aws:sagemaker:us-east-1:850995577816:training-job/ntm-2024-11-25-08-12-09-791', 'AWS_CONTAINER_CREDENTIALS_RELATIVE_URI': '/v2/credentials/proxy-408822fc4a154061df79f31ef5076976c964ef7b6277c69119f09751138dc00b-customer', 'CANONICAL_ENVROOT': '/opt/amazon', 'PYTHONUNBUFFERED': 'TRUE', 'NVIDIA_VISIBLE_DEVICES': 'all', 'LD_LIBRARY_PATH': '/opt/amazon/lib/python3.8/site-packages/cv2/../../../../lib:/usr/local/nvidia/lib64:/opt/amazon/lib', 'NVIDIA_DRIVER_CAPABILITIES': 'compute,utility', 'SAGEMAKER_MANAGED_WARMPOOL_CACHE_DIRECTORY': '/opt/ml/sagemaker/warmpoolcache', 'PATH': '/opt/amazon/bin:/usr/local/nvidia/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin', 'MXNET_STORAGE_FALLBACK_LOG_VERBOSE': '0', 'PWD': '/', 'LANG': 'en_US.utf8', 'AWS_REGION': 'us-east-1', 'SAGEMAKER_METRICS_DIRECTORY': '/opt/ml/output/metrics/sagemaker', 'CUDA_VERSION': '11.1', 'HOME': '/root', 'SHLVL': '1', 'CUDA_COMPAT_NDRIVER_SUPPORTED_VERSION': '455.32.00', 'PROTOCOL_BUFFERS_PYTHON_IMPLEMENTATION_VERSION': '2', 'OMP_NUM_THREADS': '2', 'DMLC_INTERFACE': 'eth0', 'SAGEMAKER_HTTP_PORT': '8080', 'SAGEMAKER_DATA_PATH': '/opt/ml', 'DMLC_ROLE': 'server', 'DMLC_PS_ROOT_URI': '10.0.167.255', 'DMLC_PS_ROOT_PORT': '9000', 'DMLC_NUM_SERVER': '2', 'DMLC_NUM_WORKER': '2'}
[11/25/2024 08:17:01 INFO 140585769518912] Environment: {'ENVROOT': '/opt/amazon', 'PROTOCOL_BUFFERS_PYTHON_IMPLEMENTATION': 'cpp', 'HOSTNAME': 'ip-10-0-167-255.ec2.internal', 'TRAINING_JOB_NAME': 'ntm-2024-11-25-08-12-09-791', 'NVIDIA_REQUIRE_CUDA': 'cuda>=9.0', 'TRAINING_JOB_ARN': 'arn:aws:sagemaker:us-east-1:850995577816:training-job/ntm-2024-11-25-08-12-09-791', 'AWS_CONTAINER_CREDENTIALS_RELATIVE_URI': '/v2/credentials/proxy-408822fc4a154061df79f31ef5076976c964ef7b6277c69119f09751138dc00b-customer', 'CANONICAL_ENVROOT': '/opt/amazon', 'PYTHONUNBUFFERED': 'TRUE', 'NVIDIA_VISIBLE_DEVICES': 'all', 'LD_LIBRARY_PATH': '/opt/amazon/lib/python3.8/site-packages/cv2/../../../../lib:/usr/local/nvidia/lib64:/opt/amazon/lib', 'NVIDIA_DRIVER_CAPABILITIES': 'compute,utility', 'SAGEMAKER_MANAGED_WARMPOOL_CACHE_DIRECTORY': '/opt/ml/sagemaker/warmpoolcache', 'PATH': '/opt/amazon/bin:/usr/local/nvidia/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin', 'MXNET_STORAGE_FALLBACK_LOG_VERBOSE': '0', 'PWD': '/', 'LANG': 'en_US.utf8', 'AWS_REGION': 'us-east-1', 'SAGEMAKER_METRICS_DIRECTORY': '/opt/ml/output/metrics/sagemaker', 'CUDA_VERSION': '11.1', 'HOME': '/root', 'SHLVL': '1', 'CUDA_COMPAT_NDRIVER_SUPPORTED_VERSION': '455.32.00', 'PROTOCOL_BUFFERS_PYTHON_IMPLEMENTATION_VERSION': '2', 'OMP_NUM_THREADS': '2', 'DMLC_INTERFACE': 'eth0', 'SAGEMAKER_HTTP_PORT': '8080', 'SAGEMAKER_DATA_PATH': '/opt/ml', 'DMLC_ROLE': 'worker', 'DMLC_PS_ROOT_URI': '10.0.167.255', 'DMLC_PS_ROOT_PORT': '9000', 'DMLC_NUM_SERVER': '2', 'DMLC_NUM_WORKER': '2'}
Process 47 is a shell:scheduler.
Process 56 is a shell:server.
Process 8 is a worker.
[11/25/2024 08:17:01 INFO 140585769518912] Using default worker.
[11/25/2024 08:17:01 INFO 140585769518912] Checkpoint loading and saving are disabled.

[2024-11-25 08:17:01.060] [tensorio] [warning] TensorIO is already initialized; ignoring the initialization routine.
[11/25/2024 08:17:01 INFO 140585769518912] Initializing
[11/25/2024 08:17:01 INFO 140585769518912] /opt/ml/input/data/auxiliary
[11/25/2024 08:17:01 INFO 140585769518912] vocab.txt
[11/25/2024 08:17:01 INFO 140585769518912] Vocab file vocab.txt is expected at /opt/ml/input/data/auxiliary
[11/25/2024 08:17:01 INFO 140585769518912] Loading pre-trained token embedding vectors from /opt/amazon/lib/python3.8/site-packages/algorithm/s3_binary/glove.6B.50d.txt

2024-11-25 08:16:49 Training - Training image download completed. Training in progress.Docker entrypoint called with argument(s): train
Running default environment configuration script
/opt/amazon/lib/python3.8/site-packages/mxnet/model.py:97: SyntaxWarning: "is" with a literal. Did you mean "=="?
  if num_device is 1 and 'dist' not in kvstore:
[11/25/2024 08:17:00 INFO 140341878044480] Reading default configuration from /opt/amazon/lib/python3.8/site-packages/algorithm/default-input.json: {'encoder_layers': 'auto', 'mini_batch_size': '256', 'epochs': '50', 'encoder_layers_activation': 'sigmoid', 'optimizer': 'adadelta', 'tolerance': '0.001', 'num_patience_epochs': '3', 'batch_norm': 'false', 'rescale_gradient': '1.0', 'clip_gradient': 'Inf', 'weight_decay': '0.0', 'learning_rate': '0.01', 'sub_sample': '1.0', '_tuning_objective_metric': '', '_data_format': 'record', '_num_gpus': 'auto', '_num_kv_servers': 'auto', '_kvstore': 'auto_gpu'}
[11/25/2024 08:17:00 INFO 140341878044480] Merging with provided configuration from /opt/ml/input/config/hyperparameters.json: {'epochs': '150', 'feature_dim': '17524', 'mini_batch_size': '30', 'num_patience_epochs': '5', 'num_topics': '3', 'tolerance': '0.001'}
[11/25/2024 08:17:00 INFO 140341878044480] Final configuration: {'encoder_layers': 'auto', 'mini_batch_size': '30', 'epochs': '150', 'encoder_layers_activation': 'sigmoid', 'optimizer': 'adadelta', 'tolerance': '0.001', 'num_patience_epochs': '5', 'batch_norm': 'false', 'rescale_gradient': '1.0', 'clip_gradient': 'Inf', 'weight_decay': '0.0', 'learning_rate': '0.01', 'sub_sample': '1.0', '_tuning_objective_metric': '', '_data_format': 'record', '_num_gpus': 'auto', '_num_kv_servers': 'auto', '_kvstore': 'auto_gpu', 'feature_dim': '17524', 'num_topics': '3'}
/opt/amazon/python3.8/lib/python3.8/subprocess.py:848: RuntimeWarning: line buffering (buffering=1) isn't supported in binary mode, the default buffer size will be used
  self.stdout = io.open(c2pread, 'rb', bufsize)
[11/25/2024 08:17:00 INFO 140341878044480] nvidia-smi: took 0.030 seconds to run.
[11/25/2024 08:17:00 INFO 140341878044480] nvidia-smi identified 0 GPUs.
[11/25/2024 08:17:00 INFO 140341878044480] Launching parameter server for role server
[11/25/2024 08:17:00 INFO 140341878044480] {'ENVROOT': '/opt/amazon', 'PROTOCOL_BUFFERS_PYTHON_IMPLEMENTATION': 'cpp', 'HOSTNAME': 'ip-10-0-188-62.ec2.internal', 'TRAINING_JOB_NAME': 'ntm-2024-11-25-08-12-09-791', 'NVIDIA_REQUIRE_CUDA': 'cuda>=9.0', 'TRAINING_JOB_ARN': 'arn:aws:sagemaker:us-east-1:850995577816:training-job/ntm-2024-11-25-08-12-09-791', 'AWS_CONTAINER_CREDENTIALS_RELATIVE_URI': '/v2/credentials/proxy-408822fc4a154061df79f31ef5076976c964ef7b6277c69119f09751138dc00b-customer', 'CANONICAL_ENVROOT': '/opt/amazon', 'PYTHONUNBUFFERED': 'TRUE', 'NVIDIA_VISIBLE_DEVICES': 'all', 'LD_LIBRARY_PATH': '/opt/amazon/lib/python3.8/site-packages/cv2/../../../../lib:/usr/local/nvidia/lib64:/opt/amazon/lib', 'NVIDIA_DRIVER_CAPABILITIES': 'compute,utility', 'SAGEMAKER_MANAGED_WARMPOOL_CACHE_DIRECTORY': '/opt/ml/sagemaker/warmpoolcache', 'PATH': '/opt/amazon/bin:/usr/local/nvidia/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin', 'MXNET_STORAGE_FALLBACK_LOG_VERBOSE': '0', 'PWD': '/', 'LANG': 'en_US.utf8', 'AWS_REGION': 'us-east-1', 'SAGEMAKER_METRICS_DIRECTORY': '/opt/ml/output/metrics/sagemaker', 'CUDA_VERSION': '11.1', 'HOME': '/root', 'SHLVL': '1', 'CUDA_COMPAT_NDRIVER_SUPPORTED_VERSION': '455.32.00', 'PROTOCOL_BUFFERS_PYTHON_IMPLEMENTATION_VERSION': '2', 'OMP_NUM_THREADS': '2', 'DMLC_INTERFACE': 'eth0', 'SAGEMAKER_HTTP_PORT': '8080', 'SAGEMAKER_DATA_PATH': '/opt/ml'}
[11/25/2024 08:17:00 INFO 140341878044480] envs={'ENVROOT': '/opt/amazon', 'PROTOCOL_BUFFERS_PYTHON_IMPLEMENTATION': 'cpp', 'HOSTNAME': 'ip-10-0-188-62.ec2.internal', 'TRAINING_JOB_NAME': 'ntm-2024-11-25-08-12-09-791', 'NVIDIA_REQUIRE_CUDA': 'cuda>=9.0', 'TRAINING_JOB_ARN': 'arn:aws:sagemaker:us-east-1:850995577816:training-job/ntm-2024-11-25-08-12-09-791', 'AWS_CONTAINER_CREDENTIALS_RELATIVE_URI': '/v2/credentials/proxy-408822fc4a154061df79f31ef5076976c964ef7b6277c69119f09751138dc00b-customer', 'CANONICAL_ENVROOT': '/opt/amazon', 'PYTHONUNBUFFERED': 'TRUE', 'NVIDIA_VIS

IBLE_DEVICES': 'all', 'LD_LIBRARY_PATH': '/opt/amazon/lib/python3.8/site-packages/cv
2/../../../../lib:/usr/local/nvidia/lib64:/opt/amazon/lib', 'NVIDIA_DRIVER_CAPABILITIES': 'compu
te,utility', 'SAGEMAKER_MANAGED_WARMPOOL_CACHE_DIRECTORY': '/opt/ml/sagemaker/warmpoolcache', 'P
ATH': '/opt/amazon/bin:/usr/local/nvidia/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/
sbin:/bin', 'MXNET_STORAGE_FALLBACK_LOG_VERBOSE': '0', 'PWD': '/', 'LANG': 'en_US.utf8', 'AWS_RE
GION': 'us-east-1', 'SAGEMAKER_METRICS_DIRECTORY': '/opt/ml/output/metrics/sagemaker', 'CUDA_VER
SION': '11.1', 'HOME': '/root', 'SHLVL': '1', 'CUDA_COMPAT_NDRIVER_SUPPORTED_VERSION': '455.32.0
0', 'PROTOCOL_BUFFERS_PYTHON_IMPLEMENTATION_VERSION': '2', 'OMP_NUM_THREADS': '2', 'DMLC_INTERFA
CE': 'eth0', 'SAGEMAKER_HTTP_PORT': '8080', 'SAGEMAKER_DATA_PATH': '/opt/ml', 'DMLC_ROLE': 'serv
er', 'DMLC_PS_ROOT_URI': '10.0.167.255', 'DMLC_PS_ROOT_PORT': '9000', 'DMLC_NUM_SERVER': '2', 'D
MLC_NUM_WORKER': '2'}
[11/25/2024 08:17:00 INFO 140341878044480] Environment: {'ENVROOT': '/opt/amazon', 'PROTOCOL_BUF
FERS_PYTHON_IMPLEMENTATION': 'cpp', 'HOSTNAME': 'ip-10-0-188-62.ec2.internal', 'TRAINING_JOB_NAM
E': 'ntm-2024-11-25-08-12-09-791', 'NVIDIA_REQUIRE_CUDA': 'cuda>=9.0', 'TRAINING_JOB_ARN': 'arn:
aws:sagemaker:us-east-1:850995577816:training-job/ntm-2024-11-25-08-12-09-791', 'AWS_CONTAINER_C
REDENTIALS_RELATIVE_URI': '/v2/credentials/proxy-408822fc4a154061df79f31ef5076976c964ef7b6277c69
119f09751138dc00b-customer', 'CANONICAL_ENVROOT': '/opt/amazon', 'PYTHONUNBUFFERED': 'TRUE', 'NV
IDIA_VISIBLE_DEVICES': 'all', 'LD_LIBRARY_PATH': '/opt/amazon/lib/python3.8/site-packages/cv
2/../../../../lib:/usr/local/nvidia/lib64:/opt/amazon/lib', 'NVIDIA_DRIVER_CAPABILITIES': 'compu
te,utility', 'SAGEMAKER_MANAGED_WARMPOOL_CACHE_DIRECTORY': '/opt/ml/sagemaker/warmpoolcache', 'P
ATH': '/opt/amazon/bin:/usr/local/nvidia/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/
sbin:/bin', 'MXNET_STORAGE_FALLBACK_LOG_VERBOSE': '0', 'PWD': '/', 'LANG': 'en_US.utf8', 'AWS_RE
GION': 'us-east-1', 'SAGEMAKER_METRICS_DIRECTORY': '/opt/ml/output/metrics/sagemaker', 'CUDA_VER
SION': '11.1', 'HOME': '/root', 'SHLVL': '1', 'CUDA_COMPAT_NDRIVER_SUPPORTED_VERSION': '455.32.0
0', 'PROTOCOL_BUFFERS_PYTHON_IMPLEMENTATION_VERSION': '2', 'OMP_NUM_THREADS': '2', 'DMLC_INTERFA
CE': 'eth0', 'SAGEMAKER_HTTP_PORT': '8080', 'SAGEMAKER_DATA_PATH': '/opt/ml', 'DMLC_ROLE': 'work
er', 'DMLC_PS_ROOT_URI': '10.0.167.255', 'DMLC_PS_ROOT_PORT': '9000', 'DMLC_NUM_SERVER': '2', 'D
MLC_NUM_WORKER': '2'}
Process 46 is a shell:server.
Process 7 is a worker.
[11/25/2024 08:17:00 INFO 140341878044480] Using default worker.
[11/25/2024 08:17:00 INFO 140341878044480] Checkpoint loading and saving are disabled.
[2024-11-25 08:17:00.844] [tensorio] [warning] TensorIO is already initialized; ignoring the ini
tialization routine.
[11/25/2024 08:17:00 INFO 140341878044480] Initializing
[11/25/2024 08:17:00 INFO 140341878044480] /opt/ml/input/data/auxiliary
[11/25/2024 08:17:00 INFO 140341878044480] vocab.txt
[11/25/2024 08:17:00 INFO 140341878044480] Vocab file vocab.txt is expected at /opt/ml/input/dat
a/auxiliary
[11/25/2024 08:17:00 INFO 140341878044480] Loading pre-trained token embedding vectors from /op
t/amazon/lib/python3.8/site-packages/algorithm/s3_binary/glove.6B.50d.txt
[11/25/2024 08:17:11 WARNING 140585769518912] 1421 out of 17524 in vocabulary do not have embedd
ings! Default vector used for unknown embedding!
[11/25/2024 08:17:11 INFO 140585769518912] Vocab embedding shape: (17524, 50)
[11/25/2024 08:17:11 WARNING 140341878044480] 1421 out of 17524 in vocabulary do not have embedd
ings! Default vector used for unknown embedding!
[11/25/2024 08:17:11 INFO 140341878044480] Vocab embedding shape: (17524, 50)
[11/25/2024 08:17:11 INFO 140341878044480] Number of GPUs being used: 0
[11/25/2024 08:17:11 INFO 140341878044480] Create Store: dist_async
[11/25/2024 08:17:11 INFO 140585769518912] Number of GPUs being used: 0
[11/25/2024 08:17:11 INFO 140585769518912] Create Store: dist_async
#metrics {"StartTime": 1732522631.6237893, "EndTime": 1732522631.6238256, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "Meta": "init_train_data_iter"}, "Me
trics": {"Total Records Seen": {"sum": 0.0, "count": 1, "min": 0, "max": 0}, "Total Batches See
n": {"sum": 0.0, "count": 1, "min": 0, "max": 0}, "Max Records Seen Between Resets": {"sum": 0.
0, "count": 1, "min": 0, "max": 0}, "Max Batches Seen Between Resets": {"sum": 0.0, "count": 1,
"min": 0, "max": 0}, "Reset Count": {"sum": 0.0, "count": 1, "min": 0, "max": 0}, "Number of Rec
ords Since Last Reset": {"sum": 0.0, "count": 1, "min": 0, "max": 0}, "Number of Batches Since L
ast Reset": {"sum": 0.0, "count": 1, "min": 0, "max": 0}}}

[2024-11-25 08:17:11.624] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 0, "duration": 10565, "num_examples": 1, "num_bytes": 10036}
[11/25/2024 08:17:11 INFO 140585769518912]
[11/25/2024 08:17:11 INFO 140585769518912] # Starting training for epoch 1
#metrics {"StartTime": 1732522631.6239085, "EndTime": 1732522631.6239383, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "Meta": "init_train_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 0.0, "count": 1, "min": 0, "max": 0}, "Total Batches Seen": {"sum": 0.0, "count": 1, "min": 0, "max": 0}, "Max Records Seen Between Resets": {"sum": 0.0, "count": 1, "min": 0, "max": 0}, "Max Batches Seen Between Resets": {"sum": 0.0, "count": 1, "min": 0, "max": 0}, "Reset Count": {"sum": 0.0, "count": 1, "min": 0, "max": 0}, "Number of Records Since Last Reset": {"sum": 0.0, "count": 1, "min": 0, "max": 0}, "Number of Batches Since Last Reset": {"sum": 0.0, "count": 1, "min": 0, "max": 0}}}
[2024-11-25 08:17:11.624] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 0, "duration": 10780, "num_examples": 1, "num_bytes": 16680}
[11/25/2024 08:17:11 INFO 140341878044480]
[11/25/2024 08:17:11 INFO 140341878044480] # Starting training for epoch 1
[2024-11-25 08:17:12.846] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 2, "duration": 1221, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:12 INFO 140341878044480] # Finished training epoch 1 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:12 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:12 INFO 140341878044480] Loss (name: value) total: 9.119663393938984
[11/25/2024 08:17:12 INFO 140341878044480] Loss (name: value) kld: 0.1644186508502268
[11/25/2024 08:17:12 INFO 140341878044480] Loss (name: value) recons: 8.955244671856915
[11/25/2024 08:17:12 INFO 140341878044480] Loss (name: value) logppx: 9.119663393938984
[11/25/2024 08:17:12 INFO 140341878044480] #quality_metric: host=algo-2, epoch=1, train total_loss <loss>=9.119663393938984
[2024-11-25 08:17:12.851] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 0, "duration": 12006, "num_examples": 1, "num_bytes": 8240}
[2024-11-25 08:17:13.017] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 2, "duration": 166, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:13 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:13 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:13 INFO 140341878044480] Loss (name: value) total: 8.98839103503105
[11/25/2024 08:17:13 INFO 140341878044480] Loss (name: value) kld: 0.26572902019207295
[11/25/2024 08:17:13 INFO 140341878044480] Loss (name: value) recons: 8.722662118765024
[11/25/2024 08:17:13 INFO 140341878044480] Loss (name: value) logppx: 8.98839103503105
[11/25/2024 08:17:13 INFO 140341878044480] #validation_score (1): 8.98839103503105
[11/25/2024 08:17:13 INFO 140341878044480] Timing: train: 1.23s, val: 0.17s, epoch: 1.39s
[11/25/2024 08:17:13 INFO 140341878044480] #progress_metric: host=algo-2, completed 0.6666666666666666 % of epochs
#metrics {"StartTime": 1732522631.6245959, "EndTime": 1732522633.0197968, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 0, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Total Batches Seen": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 2.0, "count": 1, "min": 2, "max": 2}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:13 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=761.0987267551264 records/second
[11/25/2024 08:17:13 INFO 140341878044480]
[11/25/2024 08:17:13 INFO 140341878044480] # Starting training for epoch 2
[2024-11-25 08:17:13.882] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 2, "duration": 2258, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:13 INFO 140585769518912] # Finished training epoch 1 on 2126 examples from 71 batches, each of size 30.

```
[11/25/2024 08:17:13 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:13 INFO 140585769518912] Loss (name: value) total: 8.965325762968108
[11/25/2024 08:17:13 INFO 140585769518912] Loss (name: value) kld: 0.22565321159437562
[11/25/2024 08:17:13 INFO 140585769518912] Loss (name: value) recons: 8.739672622322477
[11/25/2024 08:17:13 INFO 140585769518912] Loss (name: value) logppx: 8.965325762968108
[11/25/2024 08:17:13 INFO 140585769518912] #quality_metric: host=algo-1, epoch=1, train total_lo
ss <loss>=8.965325762968108
[2024-11-25 08:17:13.886] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 0, "duration": 12826, "num_examples": 1, "num_bytes": 8240}
[2024-11-25 08:17:14.021] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 2, "duration": 134, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:14 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:14 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:14 INFO 140585769518912] Loss (name: value) total: 8.797585981320113
[11/25/2024 08:17:14 INFO 140585769518912] Loss (name: value) kld: 0.20911699808560885
[11/25/2024 08:17:14 INFO 140585769518912] Loss (name: value) recons: 8.58846936348157
[11/25/2024 08:17:14 INFO 140585769518912] Loss (name: value) logppx: 8.797585981320113
[11/25/2024 08:17:14 INFO 140585769518912] #validation_score (1): 8.797585981320113
[11/25/2024 08:17:14 INFO 140585769518912] Timing: train: 2.26s, val: 0.14s, epoch: 2.40s
[11/25/2024 08:17:14 INFO 140585769518912] #progress_metric: host=algo-1, completed 0.6666666666
666666 % of epochs
#metrics {"StartTime": 1732522631.6243477, "EndTime": 1732522634.0223703, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 0, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126},
"Total Batches Seen": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Max Records Seen Between
Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Reset
s": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 2.0, "count": 1, "mi
n": 2, "max": 2}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126,
"max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max":
71}}}
[11/25/2024 08:17:14 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=88
6.5233122847901 records/second
[11/25/2024 08:17:14 INFO 140585769518912]
[11/25/2024 08:17:14 INFO 140585769518912] # Starting training for epoch 2
[2024-11-25 08:17:14.198] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 5, "duration": 1178, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:14 INFO 140341878044480] # Finished training epoch 2 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:17:14 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:14 INFO 140341878044480] Loss (name: value) total: 8.390763275711624
[11/25/2024 08:17:14 INFO 140341878044480] Loss (name: value) kld: 0.2273054003715515
[11/25/2024 08:17:14 INFO 140341878044480] Loss (name: value) recons: 8.163457912868923
[11/25/2024 08:17:14 INFO 140341878044480] Loss (name: value) logppx: 8.390763275711624
[11/25/2024 08:17:14 INFO 140341878044480] #quality_metric: host=algo-2, epoch=2, train total_lo
ss <loss>=8.390763275711624
[2024-11-25 08:17:14.364] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 5, "duration": 164, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:14 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:14 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:14 INFO 140341878044480] Loss (name: value) total: 8.776968383789063
[11/25/2024 08:17:14 INFO 140341878044480] Loss (name: value) kld: 0.18544801687582946
[11/25/2024 08:17:14 INFO 140341878044480] Loss (name: value) recons: 8.591520260541866
[11/25/2024 08:17:14 INFO 140341878044480] Loss (name: value) logppx: 8.776968383789063
[11/25/2024 08:17:14 INFO 140341878044480] #validation_score (2): 8.776968383789063
[11/25/2024 08:17:14 INFO 140341878044480] Timing: train: 1.18s, val: 0.17s, epoch: 1.35s
[11/25/2024 08:17:14 INFO 140341878044480] #progress_metric: host=algo-2, completed 1.3333333333
333333 % of epochs
```

#metrics {"StartTime": 1732522633.0200975, "EndTime": 1732522634.3689873, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 1, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 2124.0, "count": 1, "min": 2124, "max": 2124}, "Total Batches Seen": {"sum": 72.0, "count": 1, "min": 72, "max": 72}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 4.0, "count": 1, "min": 4, "max": 4}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:14 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=787.2258973032126 records/second
[11/25/2024 08:17:14 INFO 140341878044480]
[11/25/2024 08:17:14 INFO 140341878044480] # Starting training for epoch 3
[2024-11-25 08:17:15.822] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 8, "duration": 1452, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:15 INFO 140341878044480] # Finished training epoch 3 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:15 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:15 INFO 140341878044480] Loss (name: value) total: 8.2721365681401
[11/25/2024 08:17:15 INFO 140341878044480] Loss (name: value) kld: 0.19279091358184813
[11/25/2024 08:17:15 INFO 140341878044480] Loss (name: value) recons: 8.079345688996492
[11/25/2024 08:17:15 INFO 140341878044480] Loss (name: value) logppx: 8.2721365681401
[11/25/2024 08:17:15 INFO 140341878044480] #quality_metric: host=algo-2, epoch=3, train total_loss <loss>=8.2721365681401
[2024-11-25 08:17:16.020] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 8, "duration": 196, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:16 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:16 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:16 INFO 140341878044480] Loss (name: value) total: 8.781716058193108
[11/25/2024 08:17:16 INFO 140341878044480] Loss (name: value) kld: 0.2234181196261675
[11/25/2024 08:17:16 INFO 140341878044480] Loss (name: value) recons: 8.55829804249299
[11/25/2024 08:17:16 INFO 140341878044480] Loss (name: value) logppx: 8.781716058193108
[11/25/2024 08:17:16 INFO 140341878044480] #validation_score (3): 8.781716058193108
[11/25/2024 08:17:16 INFO 140341878044480] Timing: train: 1.45s, val: 0.20s, epoch: 1.65s
[11/25/2024 08:17:16 INFO 140341878044480] #progress_metric: host=algo-2, completed 2.0 % of epochs
#metrics {"StartTime": 1732522634.36926, "EndTime": 1732522636.02095, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 2, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 3186.0, "count": 1, "min": 3186, "max": 3186}, "Total Batches Seen": {"sum": 108.0, "count": 1, "min": 108, "max": 108}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 6.0, "count": 1, "min": 6, "max": 6}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:16 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=642.9163599078107 records/second
[11/25/2024 08:17:16 INFO 140341878044480]
[11/25/2024 08:17:16 INFO 140341878044480] # Starting training for epoch 4
[2024-11-25 08:17:16.603] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 5, "duration": 2580, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:16 INFO 140585769518912] # Finished training epoch 2 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:17:16 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:16 INFO 140585769518912] Loss (name: value) total: 8.434457347314682
[11/25/2024 08:17:16 INFO 140585769518912] Loss (name: value) kld: 0.21038316572216195
[11/25/2024 08:17:16 INFO 140585769518912] Loss (name: value) recons: 8.224074192673948
[11/25/2024 08:17:16 INFO 140585769518912] Loss (name: value) logppx: 8.434457347314682

[11/25/2024 08:17:16 INFO 140585769518912] #quality_metric: host=algo-1, epoch=2, train total_loss <loss>=8.434457347314682
[2024-11-25 08:17:16.736] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 5, "duration": 131, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:16 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:16 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:16 INFO 140585769518912] Loss (name: value) total: 8.70164521046174
[11/25/2024 08:17:16 INFO 140585769518912] Loss (name: value) kld: 0.20781333996699405
[11/25/2024 08:17:16 INFO 140585769518912] Loss (name: value) recons: 8.493832123585236
[11/25/2024 08:17:16 INFO 140585769518912] Loss (name: value) logppx: 8.70164521046174
[11/25/2024 08:17:16 INFO 140585769518912] #validation_score (2): 8.70164521046174
[11/25/2024 08:17:16 INFO 140585769518912] Timing: train: 2.58s, val: 0.13s, epoch: 2.72s
[11/25/2024 08:17:16 INFO 140585769518912] #progress_metric: host=algo-1, completed 1.3333333333333333 % of epochs
#metrics {"StartTime": 1732522634.0225492, "EndTime": 1732522636.7397006, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 1, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 4252.0, "count": 1, "min": 4252, "max": 4252}, "Total Batches Seen": {"sum": 142.0, "count": 1, "min": 142, "max": 142}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 4.0, "count": 1, "min": 4, "max": 4}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:17:16 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=782.3954732602363 records/second
[11/25/2024 08:17:16 INFO 140585769518912]
[11/25/2024 08:17:16 INFO 140585769518912] # Starting training for epoch 3
[2024-11-25 08:17:17.628] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 11, "duration": 1607, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:17 INFO 140341878044480] # Finished training epoch 4 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:17 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:17 INFO 140341878044480] Loss (name: value) total: 8.222225761413574
[11/25/2024 08:17:17 INFO 140341878044480] Loss (name: value) kld: 0.177889656358295
[11/25/2024 08:17:17 INFO 140341878044480] Loss (name: value) recons: 8.044336085849338
[11/25/2024 08:17:17 INFO 140341878044480] Loss (name: value) logppx: 8.222225761413574
[11/25/2024 08:17:17 INFO 140341878044480] #quality_metric: host=algo-2, epoch=4, train total_loss <loss>=8.222225761413574
[2024-11-25 08:17:17.789] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 11, "duration": 159, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:17 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:17 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:17 INFO 140341878044480] Loss (name: value) total: 8.731302505884415
[11/25/2024 08:17:17 INFO 140341878044480] Loss (name: value) kld: 0.2143098146487505
[11/25/2024 08:17:17 INFO 140341878044480] Loss (name: value) recons: 8.516992735251403
[11/25/2024 08:17:17 INFO 140341878044480] Loss (name: value) logppx: 8.731302505884415
[11/25/2024 08:17:17 INFO 140341878044480] #validation_score (4): 8.731302505884415
[11/25/2024 08:17:17 INFO 140341878044480] Timing: train: 1.61s, val: 0.16s, epoch: 1.77s
[11/25/2024 08:17:17 INFO 140341878044480] #progress_metric: host=algo-2, completed 2.6666666666666665 % of epochs
#metrics {"StartTime": 1732522636.0212016, "EndTime": 1732522637.7933207, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 3, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 4248.0, "count": 1, "min": 4248, "max": 4248}, "Total Batches Seen": {"sum": 144.0, "count": 1, "min": 144, "max": 144}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 8.0, "count": 1, "min": 8, "max": 8}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 10

62, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:17 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=599.2474679618217 records/second
[11/25/2024 08:17:17 INFO 140341878044480]
[11/25/2024 08:17:17 INFO 140341878044480] # Starting training for epoch 5
[2024-11-25 08:17:19.287] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 8, "duration": 2547, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:19 INFO 140585769518912] # Finished training epoch 3 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:17:19 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:19 INFO 140585769518912] Loss (name: value) total: 8.357441532332013
[11/25/2024 08:17:19 INFO 140585769518912] Loss (name: value) kld: 0.18253827083838378
[11/25/2024 08:17:19 INFO 140585769518912] Loss (name: value) recons: 8.174903267873844
[11/25/2024 08:17:19 INFO 140585769518912] Loss (name: value) logppx: 8.357441532332013
[11/25/2024 08:17:19 INFO 140585769518912] #quality_metric: host=algo-1, epoch=3, train total_loss <loss>=8.357441532332013
[2024-11-25 08:17:19.461] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 8, "duration": 171, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:19 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:19 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:19 INFO 140585769518912] Loss (name: value) total: 8.67272432767428
[11/25/2024 08:17:19 INFO 140585769518912] Loss (name: value) kld: 0.15627454733237242
[11/25/2024 08:17:19 INFO 140585769518912] Loss (name: value) recons: 8.516449561485878
[11/25/2024 08:17:19 INFO 140585769518912] Loss (name: value) logppx: 8.67272432767428
[11/25/2024 08:17:19 INFO 140585769518912] #validation_score (3): 8.67272432767428
[11/25/2024 08:17:19 INFO 140585769518912] Timing: train: 2.55s, val: 0.18s, epoch: 2.72s
[11/25/2024 08:17:19 INFO 140585769518912] #progress_metric: host=algo-1, completed 2.0 % of epochs
#metrics {"StartTime": 1732522636.740013, "EndTime": 1732522639.4647818, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 2, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 6378.0, "count": 1, "min": 6378, "max": 6378}, "Total Batches Seen": {"sum": 213.0, "count": 1, "min": 213, "max": 213}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 6.0, "count": 1, "min": 6, "max": 6}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:17:19 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=780.2176453572664 records/second
[11/25/2024 08:17:19 INFO 140585769518912]
[11/25/2024 08:17:19 INFO 140585769518912] # Starting training for epoch 4
[2024-11-25 08:17:18.994] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 14, "duration": 1200, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:18 INFO 140341878044480] # Finished training epoch 5 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:18 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:18 INFO 140341878044480] Loss (name: value) total: 8.167967987060546
[11/25/2024 08:17:18 INFO 140341878044480] Loss (name: value) kld: 0.1603864989898823
[11/25/2024 08:17:18 INFO 140341878044480] Loss (name: value) recons: 8.007581513016312
[11/25/2024 08:17:18 INFO 140341878044480] Loss (name: value) logppx: 8.167967987060546
[11/25/2024 08:17:18 INFO 140341878044480] #quality_metric: host=algo-2, epoch=5, train total_loss <loss>=8.167967987060546
[2024-11-25 08:17:19.131] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 14, "duration": 133, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:19 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:19 INFO 140341878044480] Metrics for Inference:

[11/25/2024 08:17:19 INFO 140341878044480] Loss (name: value) total: 8.72873996832432
[11/25/2024 08:17:19 INFO 140341878044480] Loss (name: value) kld: 0.14628326709453876
[11/25/2024 08:17:19 INFO 140341878044480] Loss (name: value) recons: 8.582456774589343
[11/25/2024 08:17:19 INFO 140341878044480] Loss (name: value) logppx: 8.72873996832432
[11/25/2024 08:17:19 INFO 140341878044480] #validation_score (5): 8.72873996832432
[11/25/2024 08:17:19 INFO 140341878044480] Timing: train: 1.20s, val: 0.14s, epoch: 1.34s
[11/25/2024 08:17:19 INFO 140341878044480] #progress_metric: host=algo-2, completed 3.3333333333333335 % of epochs
#metrics {"StartTime": 1732522637.7935424, "EndTime": 1732522639.1346724, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 4, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 5310.0, "count": 1, "min": 5310, "max": 5310}, "Total Batches Seen": {"sum": 180.0, "count": 1, "min": 180, "max": 180}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 10.0, "count": 1, "min": 10, "max": 10}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:19 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=791.797040042861 records/second
[11/25/2024 08:17:19 INFO 140341878044480]
[11/25/2024 08:17:19 INFO 140341878044480] # Starting training for epoch 6
[2024-11-25 08:17:20.391] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 17, "duration": 1256, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:20 INFO 140341878044480] # Finished training epoch 6 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:20 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:20 INFO 140341878044480] Loss (name: value) total: 8.150026660495334
[11/25/2024 08:17:20 INFO 140341878044480] Loss (name: value) kld: 0.1563795506954193
[11/25/2024 08:17:20 INFO 140341878044480] Loss (name: value) recons: 7.993647165651675
[11/25/2024 08:17:20 INFO 140341878044480] Loss (name: value) logppx: 8.150026660495334
[11/25/2024 08:17:20 INFO 140341878044480] #quality_metric: host=algo-2, epoch=6, train total_loss <loss>=8.150026660495334
[2024-11-25 08:17:20.530] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 17, "duration": 137, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:20 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:20 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:20 INFO 140341878044480] Loss (name: value) total: 8.690133080115686
[11/25/2024 08:17:20 INFO 140341878044480] Loss (name: value) kld: 0.15874105233412522
[11/25/2024 08:17:20 INFO 140341878044480] Loss (name: value) recons: 8.531392024113583
[11/25/2024 08:17:20 INFO 140341878044480] Loss (name: value) logppx: 8.690133080115686
[11/25/2024 08:17:20 INFO 140341878044480] #validation_score (6): 8.690133080115686
[11/25/2024 08:17:20 INFO 140341878044480] patience losses:[8.98839103503105, 8.776968383789063, 8.781716058193108, 8.731302505884415, 8.72873996832432] min patience loss:8.72873996832432 current loss:8.690133080115686 absolute loss difference:0.03860688820863345
[11/25/2024 08:17:20 INFO 140341878044480] Timing: train: 1.26s, val: 0.14s, epoch: 1.40s
[11/25/2024 08:17:20 INFO 140341878044480] #progress_metric: host=algo-2, completed 4.0 % of epochs
#metrics {"StartTime": 1732522639.1349187, "EndTime": 1732522640.5344033, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 5, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 6372.0, "count": 1, "min": 6372, "max": 6372}, "Total Batches Seen": {"sum": 216.0, "count": 1, "min": 216, "max": 216}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 12.0, "count": 1, "min": 12, "max": 12}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:20 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=758.7779982614553 records/second

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[11/25/2024 08:17:20 INFO 140341878044480]
[11/25/2024 08:17:20 INFO 140341878044480] # Starting training for epoch 7
[2024-11-25 08:17:21.809] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 11, "duration": 2343, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:21 INFO 140585769518912] # Finished training epoch 4 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:17:21 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:21 INFO 140585769518912] Loss (name: value) total: 8.330210597078565
[11/25/2024 08:17:21 INFO 140585769518912] Loss (name: value) kld: 0.1658313984042602
[11/25/2024 08:17:21 INFO 140585769518912] Loss (name: value) recons: 8.164379159273675
[11/25/2024 08:17:21 INFO 140585769518912] Loss (name: value) logppx: 8.330210597078565
[11/25/2024 08:17:21 INFO 140585769518912] #quality_metric: host=algo-1, epoch=4, train total_lo
ss <loss>=8.330210597078565
[2024-11-25 08:17:21.925] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 11, "duration": 115, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:21 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:21 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:21 INFO 140585769518912] Loss (name: value) total: 8.661056753305289
[11/25/2024 08:17:21 INFO 140585769518912] Loss (name: value) kld: 0.15961654308514717
[11/25/2024 08:17:21 INFO 140585769518912] Loss (name: value) recons: 8.501440038436499
[11/25/2024 08:17:21 INFO 140585769518912] Loss (name: value) logppx: 8.661056753305289
[11/25/2024 08:17:21 INFO 140585769518912] #validation_score (4): 8.661056753305289
[11/25/2024 08:17:21 INFO 140585769518912] Timing: train: 2.35s, val: 0.12s, epoch: 2.46s
[11/25/2024 08:17:21 INFO 140585769518912] #progress_metric: host=algo-1, completed 2.6666666666
666665 % of epochs
#metrics {"StartTime": 1732522639.4649627, "EndTime": 1732522641.92988, "Dimensions": {"Algorith
m": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 3, "Meta": "training_data_ite
r"}, "Metrics": {"Total Records Seen": {"sum": 8504.0, "count": 1, "min": 8504, "max": 8504}, "T
otal Batches Seen": {"sum": 284.0, "count": 1, "min": 284, "max": 284}, "Max Records Seen Betwee
n Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Rese
ts": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 8.0, "count": 1, "m
in": 8, "max": 8}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 212
6, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "ma
x": 71}}}
[11/25/2024 08:17:21 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=86
2.4649984645629 records/second
[11/25/2024 08:17:21 INFO 140585769518912]
[11/25/2024 08:17:21 INFO 140585769518912] # Starting training for epoch 5
[2024-11-25 08:17:24.230] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 14, "duration": 2300, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:24 INFO 140585769518912] # Finished training epoch 5 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:17:24 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:24 INFO 140585769518912] Loss (name: value) total: 8.310335795084635
[11/25/2024 08:17:24 INFO 140585769518912] Loss (name: value) kld: 0.1639042336616158
[11/25/2024 08:17:24 INFO 140585769518912] Loss (name: value) recons: 8.14643154233834
[11/25/2024 08:17:24 INFO 140585769518912] Loss (name: value) logppx: 8.310335795084635
[11/25/2024 08:17:24 INFO 140585769518912] #quality_metric: host=algo-1, epoch=5, train total_lo
ss <loss>=8.310335795084635
[2024-11-25 08:17:24.363] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 14, "duration": 131, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:24 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:24 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:24 INFO 140585769518912] Loss (name: value) total: 8.660188919458633
[11/25/2024 08:17:24 INFO 140585769518912] Loss (name: value) kld: 0.16706390014061562
[11/25/2024 08:17:24 INFO 140585769518912] Loss (name: value) recons: 8.49312505477514
[11/25/2024 08:17:24 INFO 140585769518912] Loss (name: value) logppx: 8.660188919458633
```

[11/25/2024 08:17:24 INFO 140585769518912] #validation_score (5): 8.660188919458633
[11/25/2024 08:17:24 INFO 140585769518912] Timing: train: 2.30s, val: 0.14s, epoch: 2.44s
[11/25/2024 08:17:24 INFO 140585769518912] #progress_metric: host=algo-1, completed 3.3333333333333335 % of epochs
#metrics {"StartTime": 1732522641.9301956, "EndTime": 1732522644.3665106, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 4, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 10630.0, "count": 1, "min": 10630, "max": 10630}, "Total Batches Seen": {"sum": 355.0, "count": 1, "min": 355, "max": 355}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 10.0, "count": 1, "min": 10, "max": 10}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:17:24 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=872.5838253738387 records/second
[11/25/2024 08:17:24 INFO 140585769518912]
[11/25/2024 08:17:24 INFO 140585769518912] # Starting training for epoch 6
[2024-11-25 08:17:21.768] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 20, "duration": 1233, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:21 INFO 140341878044480] # Finished training epoch 7 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:21 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:21 INFO 140341878044480] Loss (name: value) total: 8.126721798932111
[11/25/2024 08:17:21 INFO 140341878044480] Loss (name: value) kld: 0.14718633316181323
[11/25/2024 08:17:21 INFO 140341878044480] Loss (name: value) recons: 7.97953544192844
[11/25/2024 08:17:21 INFO 140341878044480] Loss (name: value) logppx: 8.126721798932111
[11/25/2024 08:17:21 INFO 140341878044480] #quality_metric: host=algo-2, epoch=7, train total_loss <loss>=8.126721798932111
[2024-11-25 08:17:21.892] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 20, "duration": 122, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:21 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:21 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:21 INFO 140341878044480] Loss (name: value) total: 8.68784430088141
[11/25/2024 08:17:21 INFO 140341878044480] Loss (name: value) kld: 0.1638063479692508
[11/25/2024 08:17:21 INFO 140341878044480] Loss (name: value) recons: 8.52403799203726
[11/25/2024 08:17:21 INFO 140341878044480] Loss (name: value) logppx: 8.68784430088141
[11/25/2024 08:17:21 INFO 140341878044480] #validation_score (7): 8.68784430088141
[11/25/2024 08:17:21 INFO 140341878044480] patience losses:[8.776968383789063, 8.781716058193108, 8.731302505884415, 8.72873996832432, 8.690133080115686] min patience loss:8.690133080115686 current loss:8.68784430088141 absolute loss difference:0.0022887792342753954
[11/25/2024 08:17:21 INFO 140341878044480] Timing: train: 1.23s, val: 0.13s, epoch: 1.36s
[11/25/2024 08:17:21 INFO 140341878044480] #progress_metric: host=algo-2, completed 4.666666666666667 % of epochs
#metrics {"StartTime": 1732522640.5346103, "EndTime": 1732522641.8961658, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 6, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 7434.0, "count": 1, "min": 7434, "max": 7434}, "Total Batches Seen": {"sum": 252.0, "count": 1, "min": 252, "max": 252}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 14.0, "count": 1, "min": 14, "max": 14}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:21 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=779.9249145897155 records/second
[11/25/2024 08:17:21 INFO 140341878044480]
[11/25/2024 08:17:21 INFO 140341878044480] # Starting training for epoch 8
[2024-11-25 08:17:23.140] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 23, "duration": 1243, "num_examples": 36, "num_bytes": 555736}

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[11/25/2024 08:17:23 INFO 140341878044480] # Finished training epoch 8 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:17:23 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:23 INFO 140341878044480] Loss (name: value) total: 8.132024673179345
[11/25/2024 08:17:23 INFO 140341878044480] Loss (name: value) kld: 0.14893217086791993
[11/25/2024 08:17:23 INFO 140341878044480] Loss (name: value) recons: 7.983092512907805
[11/25/2024 08:17:23 INFO 140341878044480] Loss (name: value) logppx: 8.132024673179345
[11/25/2024 08:17:23 INFO 140341878044480] #quality_metric: host=algo-2, epoch=8, train total_lo
ss <loss>=8.132024673179345
[2024-11-25 08:17:23.287] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 23, "duration": 146, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:23 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:23 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:23 INFO 140341878044480] Loss (name: value) total: 8.693167896759816
[11/25/2024 08:17:23 INFO 140341878044480] Loss (name: value) kld: 0.17284984221825234
[11/25/2024 08:17:23 INFO 140341878044480] Loss (name: value) recons: 8.520318173139524
[11/25/2024 08:17:23 INFO 140341878044480] Loss (name: value) logppx: 8.693167896759816
[11/25/2024 08:17:23 INFO 140341878044480] #validation_score (8): 8.693167896759816
[11/25/2024 08:17:23 INFO 140341878044480] patience losses:[8.781716058193108, 8.73130250588441
5, 8.72873996832432, 8.690133080115686, 8.68784430088141] min patience loss:8.68784430088141 cur
rent loss:8.693167896759816 absolute loss difference:0.00532359587840503
[11/25/2024 08:17:23 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count:
1
[11/25/2024 08:17:23 INFO 140341878044480] Timing: train: 1.24s, val: 0.15s, epoch: 1.39s
[11/25/2024 08:17:23 INFO 140341878044480] #progress_metric: host=algo-2, completed 5.3333333333
33333 % of epochs
#metrics {"StartTime": 1732522641.8964226, "EndTime": 1732522643.2884517, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 7, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 8496.0, "count": 1, "min": 8496, "max": 8496},
"Total Batches Seen": {"sum": 288.0, "count": 1, "min": 288, "max": 288}, "Max Records Seen Betw
een Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Re
sets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 16.0, "count": 1,
"min": 16, "max": 16}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min":
1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36,
"max": 36}}}
[11/25/2024 08:17:23 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=76
2.8644189799555 records/second
[11/25/2024 08:17:23 INFO 140341878044480]
[11/25/2024 08:17:23 INFO 140341878044480] # Starting training for epoch 9
[2024-11-25 08:17:24.527] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 26, "duration": 1237, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:24 INFO 140341878044480] # Finished training epoch 9 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:17:24 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:24 INFO 140341878044480] Loss (name: value) total: 8.119157084712276
[11/25/2024 08:17:24 INFO 140341878044480] Loss (name: value) kld: 0.14774430769461172
[11/25/2024 08:17:24 INFO 140341878044480] Loss (name: value) recons: 7.971412757590965
[11/25/2024 08:17:24 INFO 140341878044480] Loss (name: value) logppx: 8.119157084712276
[11/25/2024 08:17:24 INFO 140341878044480] #quality_metric: host=algo-2, epoch=9, train total_lo
ss <loss>=8.119157084712276
[2024-11-25 08:17:24.702] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 26, "duration": 173, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:24 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:24 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:24 INFO 140341878044480] Loss (name: value) total: 8.65587655091897
[11/25/2024 08:17:24 INFO 140341878044480] Loss (name: value) kld: 0.15231032004723183
[11/25/2024 08:17:24 INFO 140341878044480] Loss (name: value) recons: 8.503566135504308
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[11/25/2024 08:17:24 INFO 140341878044480] Loss (name: value) logppx: 8.65587655091897
[11/25/2024 08:17:24 INFO 140341878044480] #validation_score (9): 8.65587655091897
[11/25/2024 08:17:24 INFO 140341878044480] patience losses:[8.731302505884415, 8.72873996832432, 8.690133080115686, 8.68784430088141, 8.693167896759816] min patience loss:8.68784430088141 current loss:8.65587655091897 absolute loss difference:0.03196774996244045
[11/25/2024 08:17:24 INFO 140341878044480] Timing: train: 1.24s, val: 0.18s, epoch: 1.42s
[11/25/2024 08:17:24 INFO 140341878044480] #progress_metric: host=algo-2, completed 6.0 % of epochs
#metrics {"StartTime": 1732522643.2886174, "EndTime": 1732522644.7054963, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 8, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 9558.0, "count": 1, "min": 9558, "max": 9558}, "Total Batches Seen": {"sum": 324.0, "count": 1, "min": 324, "max": 324}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 18.0, "count": 1, "min": 18, "max": 18}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:24 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=749.475475456275 records/second
[11/25/2024 08:17:24 INFO 140341878044480]
[11/25/2024 08:17:24 INFO 140341878044480] # Starting training for epoch 10
[2024-11-25 08:17:25.992] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 29, "duration": 1286, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:25 INFO 140341878044480] # Finished training epoch 10 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:25 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:25 INFO 140341878044480] Loss (name: value) total: 8.123949086224592
[11/25/2024 08:17:25 INFO 140341878044480] Loss (name: value) kld: 0.14441892791677405
[11/25/2024 08:17:25 INFO 140341878044480] Loss (name: value) recons: 7.9795301084165215
[11/25/2024 08:17:25 INFO 140341878044480] Loss (name: value) logppx: 8.123949086224592
[11/25/2024 08:17:25 INFO 140341878044480] #quality_metric: host=algo-2, epoch=10, train total_loss <loss>=8.123949086224592
[2024-11-25 08:17:26.164] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 29, "duration": 171, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:26 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:26 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:26 INFO 140341878044480] Loss (name: value) total: 8.685709948417468
[11/25/2024 08:17:26 INFO 140341878044480] Loss (name: value) kld: 0.14832562850071834
[11/25/2024 08:17:26 INFO 140341878044480] Loss (name: value) recons: 8.537384346203927
[11/25/2024 08:17:26 INFO 140341878044480] Loss (name: value) logppx: 8.685709948417468
[11/25/2024 08:17:26 INFO 140341878044480] #validation_score (10): 8.685709948417468
[11/25/2024 08:17:26 INFO 140341878044480] patience losses:[8.72873996832432, 8.690133080115686, 8.68784430088141, 8.693167896759816, 8.65587655091897] min patience loss:8.65587655091897 current loss:8.685709948417468 absolute loss difference:0.029833397498498115
[11/25/2024 08:17:26 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 1
[11/25/2024 08:17:26 INFO 140341878044480] Timing: train: 1.29s, val: 0.17s, epoch: 1.46s
[11/25/2024 08:17:26 INFO 140341878044480] #progress_metric: host=algo-2, completed 6.666666666666667 % of epochs
#metrics {"StartTime": 1732522644.7057312, "EndTime": 1732522646.1668541, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 9, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 10620.0, "count": 1, "min": 10620, "max": 10620}, "Total Batches Seen": {"sum": 360.0, "count": 1, "min": 360, "max": 360}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 20.0, "count": 1, "min": 20, "max": 20}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}

[11/25/2024 08:17:26 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=726.7847119644892 records/second
[11/25/2024 08:17:26 INFO 140341878044480]
[11/25/2024 08:17:26 INFO 140341878044480] # Starting training for epoch 11
[2024-11-25 08:17:26.660] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 17, "duration": 2293, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:26 INFO 140585769518912] # Finished training epoch 6 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:17:26 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:26 INFO 140585769518912] Loss (name: value) total: 8.286982204096978
[11/25/2024 08:17:26 INFO 140585769518912] Loss (name: value) kld: 0.15823175951908452
[11/25/2024 08:17:26 INFO 140585769518912] Loss (name: value) recons: 8.128750424094044
[11/25/2024 08:17:26 INFO 140585769518912] Loss (name: value) logppx: 8.286982204096978
[11/25/2024 08:17:26 INFO 140585769518912] #quality_metric: host=algo-1, epoch=6, train total_loss <loss>=8.286982204096978
[2024-11-25 08:17:26.786] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 17, "duration": 124, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:26 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:26 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:26 INFO 140585769518912] Loss (name: value) total: 8.62887463691907
[11/25/2024 08:17:26 INFO 140585769518912] Loss (name: value) kld: 0.13740598666362272
[11/25/2024 08:17:26 INFO 140585769518912] Loss (name: value) recons: 8.491468537159456
[11/25/2024 08:17:26 INFO 140585769518912] Loss (name: value) logppx: 8.62887463691907
[11/25/2024 08:17:26 INFO 140585769518912] #validation_score (6): 8.62887463691907
[11/25/2024 08:17:26 INFO 140585769518912] patience losses:[8.797585981320113, 8.70164521046174, 8.67272432767428, 8.661056753305289, 8.660188919458633] min patience loss:8.660188919458633 current loss:8.62887463691907 absolute loss difference:0.031314282539563365
[11/25/2024 08:17:26 INFO 140585769518912] Timing: train: 2.29s, val: 0.13s, epoch: 2.42s
[11/25/2024 08:17:26 INFO 140585769518912] #progress_metric: host=algo-1, completed 4.0 % of epochs
#metrics {"StartTime": 1732522644.366705, "EndTime": 1732522646.7914243, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 5, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 12756.0, "count": 1, "min": 12756, "max": 12756}, "Total Batches Seen": {"sum": 426.0, "count": 1, "min": 426, "max": 426}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 12.0, "count": 1, "min": 12, "max": 12}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:17:26 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=876.7111330469655 records/second
[11/25/2024 08:17:26 INFO 140585769518912]
[11/25/2024 08:17:26 INFO 140585769518912] # Starting training for epoch 7
[2024-11-25 08:17:27.366] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 32, "duration": 1199, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:27 INFO 140341878044480] # Finished training epoch 11 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:27 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:27 INFO 140341878044480] Loss (name: value) total: 8.11145234991003
[11/25/2024 08:17:27 INFO 140341878044480] Loss (name: value) kld: 0.13999237153265212
[11/25/2024 08:17:27 INFO 140341878044480] Loss (name: value) recons: 7.971460010387279
[11/25/2024 08:17:27 INFO 140341878044480] Loss (name: value) logppx: 8.11145234991003
[11/25/2024 08:17:27 INFO 140341878044480] #quality_metric: host=algo-2, epoch=11, train total_loss <loss>=8.11145234991003
[2024-11-25 08:17:27.525] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 32, "duration": 158, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:27 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.

[11/25/2024 08:17:27 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:27 INFO 140341878044480] Loss (name: value) total: 8.664852474897335
[11/25/2024 08:17:27 INFO 140341878044480] Loss (name: value) kld: 0.15339324596600654
[11/25/2024 08:17:27 INFO 140341878044480] Loss (name: value) recons: 8.511459311460838
[11/25/2024 08:17:27 INFO 140341878044480] Loss (name: value) logppx: 8.664852474897335
[11/25/2024 08:17:27 INFO 140341878044480] #validation_score (11): 8.664852474897335
[11/25/2024 08:17:27 INFO 140341878044480] patience losses:[8.690133080115686, 8.68784430088141, 8.693167896759816, 8.65587655091897, 8.685709948417468] min patience loss:8.65587655091897 current loss:8.664852474897335 absolute loss difference:0.00897592397836533
[11/25/2024 08:17:27 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 2
[11/25/2024 08:17:27 INFO 140341878044480] Timing: train: 1.20s, val: 0.16s, epoch: 1.36s
[11/25/2024 08:17:27 INFO 140341878044480] #progress_metric: host=algo-2, completed 7.333333333333333 % of epochs
#metrics {"StartTime": 1732522646.1670222, "EndTime": 1732522647.5264997, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 10, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 11682.0, "count": 1, "min": 11682, "max": 11682}, "Total Batches Seen": {"sum": 396.0, "count": 1, "min": 396, "max": 396}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 22.0, "count": 1, "min": 22, "max": 22}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:27 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=781.1210936938296 records/second
[11/25/2024 08:17:27 INFO 140341878044480]
[11/25/2024 08:17:27 INFO 140341878044480] # Starting training for epoch 12
[2024-11-25 08:17:29.190] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 20, "duration": 2398, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:29 INFO 140585769518912] # Finished training epoch 7 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:17:29 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:29 INFO 140585769518912] Loss (name: value) total: 8.275299280014396
[11/25/2024 08:17:29 INFO 140585769518912] Loss (name: value) kld: 0.15355342016533507
[11/25/2024 08:17:29 INFO 140585769518912] Loss (name: value) recons: 8.121745866229277
[11/25/2024 08:17:29 INFO 140585769518912] Loss (name: value) logppx: 8.275299280014396
[11/25/2024 08:17:29 INFO 140585769518912] #quality_metric: host=algo-1, epoch=7, train total_loss <loss>=8.275299280014396
[2024-11-25 08:17:29.312] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 20, "duration": 119, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:29 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:29 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:29 INFO 140585769518912] Loss (name: value) total: 8.627520125951522
[11/25/2024 08:17:29 INFO 140585769518912] Loss (name: value) kld: 0.1427385965983073
[11/25/2024 08:17:29 INFO 140585769518912] Loss (name: value) recons: 8.484781548915766
[11/25/2024 08:17:29 INFO 140585769518912] Loss (name: value) logppx: 8.627520125951522
[11/25/2024 08:17:29 INFO 140585769518912] #validation_score (7): 8.627520125951522
[11/25/2024 08:17:29 INFO 140585769518912] patience losses:[8.70164521046174, 8.67272432767428, 8.661056753305289, 8.660188919458633, 8.62887463691907] min patience loss:8.62887463691907 current loss:8.627520125951522 absolute loss difference:0.0013545109675483502
[11/25/2024 08:17:29 INFO 140585769518912] Timing: train: 2.40s, val: 0.12s, epoch: 2.52s
[11/25/2024 08:17:29 INFO 140585769518912] #progress_metric: host=algo-1, completed 4.666666666666667 % of epochs
#metrics {"StartTime": 1732522646.791956, "EndTime": 1732522649.3154755, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 6, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 14882.0, "count": 1, "min": 14882, "max": 14882}, "Total Batches Seen": {"sum": 497.0, "count": 1, "min": 497, "max": 497}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Betwee

n Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 14.0, "coun
t": 1, "min": 14, "max": 14}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:17:29 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=84
2.4390658761405 records/second
[11/25/2024 08:17:29 INFO 140585769518912]
[11/25/2024 08:17:29 INFO 140585769518912] # Starting training for epoch 8
[2024-11-25 08:17:28.804] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 35, "duration": 1277, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:28 INFO 140341878044480] # Finished training epoch 12 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:17:28 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:28 INFO 140341878044480] Loss (name: value) total: 8.109033181932237
[11/25/2024 08:17:28 INFO 140341878044480] Loss (name: value) kld: 0.13926447122185318
[11/25/2024 08:17:28 INFO 140341878044480] Loss (name: value) recons: 7.969768757290311
[11/25/2024 08:17:28 INFO 140341878044480] Loss (name: value) logppx: 8.109033181932237
[11/25/2024 08:17:28 INFO 140341878044480] #quality_metric: host=algo-2, epoch=12, train total_l
oss <loss>=8.109033181932237
[2024-11-25 08:17:28.946] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 35, "duration": 141, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:28 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:28 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:28 INFO 140341878044480] Loss (name: value) total: 8.699539654071515
[11/25/2024 08:17:28 INFO 140341878044480] Loss (name: value) kld: 0.16169619010044978
[11/25/2024 08:17:28 INFO 140341878044480] Loss (name: value) recons: 8.537843401004107
[11/25/2024 08:17:28 INFO 140341878044480] Loss (name: value) logppx: 8.699539654071515
[11/25/2024 08:17:28 INFO 140341878044480] #validation_score (12): 8.699539654071515
[11/25/2024 08:17:28 INFO 140341878044480] patience losses:[8.68784430088141, 8.693167896759816,
8.65587655091897, 8.685709948417468, 8.664852474897335] min patience loss:8.65587655091897 curre
nt loss:8.699539654071515 absolute loss difference:0.043663103152544736
[11/25/2024 08:17:28 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count:
3
[11/25/2024 08:17:28 INFO 140341878044480] Timing: train: 1.28s, val: 0.14s, epoch: 1.42s
[11/25/2024 08:17:28 INFO 140341878044480] #progress_metric: host=algo-2, completed 8.0 % of epo
chs
#metrics {"StartTime": 1732522647.5267434, "EndTime": 1732522648.9476035, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 11, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 12744.0, "count": 1, "min": 12744, "max": 1274
4}, "Total Batches Seen": {"sum": 432.0, "count": 1, "min": 432, "max": 432}, "Max Records Seen
Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Betwee
n Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 24.0, "coun
t": 1, "min": 24, "max": 24}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,
"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:17:28 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=74
7.3707922177547 records/second
[11/25/2024 08:17:28 INFO 140341878044480]
[11/25/2024 08:17:28 INFO 140341878044480] # Starting training for epoch 13
[2024-11-25 08:17:30.207] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 38, "duration": 1259, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:30 INFO 140341878044480] # Finished training epoch 13 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:17:30 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:30 INFO 140341878044480] Loss (name: value) total: 8.10129125383165
[11/25/2024 08:17:30 INFO 140341878044480] Loss (name: value) kld: 0.14112252946253176
[11/25/2024 08:17:30 INFO 140341878044480] Loss (name: value) recons: 7.960168789051197
[11/25/2024 08:17:30 INFO 140341878044480] Loss (name: value) logppx: 8.10129125383165

[11/25/2024 08:17:30 INFO 140341878044480] #quality_metric: host=algo-2, epoch=13, train total_loss <loss>=8.10129125383165
[2024-11-25 08:17:30.353] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 38, "duration": 144, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:30 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:30 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:30 INFO 140341878044480] Loss (name: value) total: 8.670704650878907
[11/25/2024 08:17:30 INFO 140341878044480] Loss (name: value) kld: 0.1617650826772054
[11/25/2024 08:17:30 INFO 140341878044480] Loss (name: value) recons: 8.508939772385817
[11/25/2024 08:17:30 INFO 140341878044480] Loss (name: value) logppx: 8.670704650878907
[11/25/2024 08:17:30 INFO 140341878044480] #validation_score (13): 8.670704650878907
[11/25/2024 08:17:30 INFO 140341878044480] patience losses:[8.693167896759816, 8.65587655091897, 8.685709948417468, 8.664852474897335, 8.699539654071515] min patience loss:8.65587655091897 current loss:8.670704650878907 absolute loss difference:0.014828099959936836
[11/25/2024 08:17:30 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 4
[11/25/2024 08:17:30 INFO 140341878044480] Timing: train: 1.26s, val: 0.15s, epoch: 1.41s
[11/25/2024 08:17:30 INFO 140341878044480] #progress_metric: host=algo-2, completed 8.666666666666666 % of epochs
#metrics {"StartTime": 1732522648.9477813, "EndTime": 1732522650.35419, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 12, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 13806.0, "count": 1, "min": 13806, "max": 13806}, "Total Batches Seen": {"sum": 468.0, "count": 1, "min": 468, "max": 468}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 26.0, "count": 1, "min": 26, "max": 26}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:30 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=755.0553445537405 records/second
[11/25/2024 08:17:30 INFO 140341878044480]
[11/25/2024 08:17:30 INFO 140341878044480] # Starting training for epoch 14
[2024-11-25 08:17:31.619] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 41, "duration": 1265, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:31 INFO 140341878044480] # Finished training epoch 14 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:31 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:31 INFO 140341878044480] Loss (name: value) total: 8.085926091229474
[11/25/2024 08:17:31 INFO 140341878044480] Loss (name: value) kld: 0.13876436595563535
[11/25/2024 08:17:31 INFO 140341878044480] Loss (name: value) recons: 7.947161610921224
[11/25/2024 08:17:31 INFO 140341878044480] Loss (name: value) logppx: 8.085926091229474
[11/25/2024 08:17:31 INFO 140341878044480] #quality_metric: host=algo-2, epoch=14, train total_loss <loss>=8.085926091229474
[2024-11-25 08:17:31.681] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 23, "duration": 2365, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:31 INFO 140585769518912] # Finished training epoch 8 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:17:31 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:31 INFO 140585769518912] Loss (name: value) total: 8.278762029370231
[11/25/2024 08:17:31 INFO 140585769518912] Loss (name: value) kld: 0.15598450199539113
[11/25/2024 08:17:31 INFO 140585769518912] Loss (name: value) recons: 8.122777517972418
[11/25/2024 08:17:31 INFO 140585769518912] Loss (name: value) logppx: 8.278762029370231
[11/25/2024 08:17:31 INFO 140585769518912] #quality_metric: host=algo-1, epoch=8, train total_loss <loss>=8.278762029370231
[2024-11-25 08:17:31.808] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 23, "duration": 126, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:31 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.

[11/25/2024 08:17:31 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:31 INFO 140585769518912] Loss (name: value) total: 8.639868750939002
[11/25/2024 08:17:31 INFO 140585769518912] Loss (name: value) kld: 0.14787371769929544
[11/25/2024 08:17:31 INFO 140585769518912] Loss (name: value) recons: 8.491994965382112
[11/25/2024 08:17:31 INFO 140585769518912] Loss (name: value) logppx: 8.639868750939002
[11/25/2024 08:17:31 INFO 140585769518912] #validation_score (8): 8.639868750939002
[11/25/2024 08:17:31 INFO 140585769518912] patience losses:[8.67272432767428, 8.661056753305289, 8.660188919458633, 8.62887463691907, 8.627520125951522] min patience loss:8.627520125951522 current loss:8.639868750939002 absolute loss difference:0.012348624987479795
[11/25/2024 08:17:31 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count: 1
[11/25/2024 08:17:31 INFO 140585769518912] Timing: train: 2.37s, val: 0.13s, epoch: 2.49s
[11/25/2024 08:17:31 INFO 140585769518912] #progress_metric: host=algo-1, completed 5.333333333333333 % of epochs
#metrics {"StartTime": 1732522649.315647, "EndTime": 1732522651.81013, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 7, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 17008.0, "count": 1, "min": 17008, "max": 17008}, "Total Batches Seen": {"sum": 568.0, "count": 1, "min": 568, "max": 568}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 16.0, "count": 1, "min": 16, "max": 16}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:17:31 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=852.2368294090886 records/second
[11/25/2024 08:17:31 INFO 140585769518912]
[11/25/2024 08:17:31 INFO 140585769518912] # Starting training for epoch 9
[2024-11-25 08:17:34.112] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 26, "duration": 2302, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:34 INFO 140585769518912] # Finished training epoch 9 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:17:34 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:34 INFO 140585769518912] Loss (name: value) total: 8.260567943590907
[11/25/2024 08:17:34 INFO 140585769518912] Loss (name: value) kld: 0.14950692172341504
[11/25/2024 08:17:34 INFO 140585769518912] Loss (name: value) recons: 8.1110610245539
[11/25/2024 08:17:34 INFO 140585769518912] Loss (name: value) logppx: 8.260567943590907
[11/25/2024 08:17:34 INFO 140585769518912] #quality_metric: host=algo-1, epoch=9, train total_loss <loss>=8.260567943590907
[2024-11-25 08:17:34.256] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 26, "duration": 143, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:34 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:34 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:34 INFO 140585769518912] Loss (name: value) total: 8.627931643755009
[11/25/2024 08:17:34 INFO 140585769518912] Loss (name: value) kld: 0.15543556152245938
[11/25/2024 08:17:34 INFO 140585769518912] Loss (name: value) recons: 8.472496032714844
[11/25/2024 08:17:34 INFO 140585769518912] Loss (name: value) logppx: 8.627931643755009
[11/25/2024 08:17:34 INFO 140585769518912] #validation_score (9): 8.627931643755009
[11/25/2024 08:17:34 INFO 140585769518912] patience losses:[8.661056753305289, 8.660188919458633, 8.62887463691907, 8.627520125951522, 8.639868750939002] min patience loss:8.627520125951522 current loss:8.627931643755009 absolute loss difference:0.000411517803486916
[11/25/2024 08:17:34 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count: 2
[11/25/2024 08:17:34 INFO 140585769518912] Timing: train: 2.30s, val: 0.14s, epoch: 2.45s
[11/25/2024 08:17:34 INFO 140585769518912] #progress_metric: host=algo-1, completed 6.0 % of epochs
#metrics {"StartTime": 1732522651.8104653, "EndTime": 1732522654.2576723, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 8, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 19134.0, "count": 1, "min": 19134, "max": 1913

4}, "Total Batches Seen": {"sum": 639.0, "count": 1, "min": 639, "max": 639}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Betwee n Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 18.0, "coun t": 1, "min": 18, "max": 18}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi n": 71, "max": 71}}}
[11/25/2024 08:17:34 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=86 8.7020643179833 records/second
[11/25/2024 08:17:34 INFO 140585769518912]
[11/25/2024 08:17:34 INFO 140585769518912] # Starting training for epoch 10
[2024-11-25 08:17:31.756] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va lidation", "epoch": 41, "duration": 135, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:31 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac h of size 30.
[11/25/2024 08:17:31 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:31 INFO 140341878044480] Loss (name: value) total: 8.655931247808994
[11/25/2024 08:17:31 INFO 140341878044480] Loss (name: value) kld: 0.13445531099270552
[11/25/2024 08:17:31 INFO 140341878044480] Loss (name: value) recons: 8.521475923978365
[11/25/2024 08:17:31 INFO 140341878044480] Loss (name: value) logppx: 8.655931247808994
[11/25/2024 08:17:31 INFO 140341878044480] #validation_score (14): 8.655931247808994
[11/25/2024 08:17:31 INFO 140341878044480] patience losses:[8.65587655091897, 8.685709948417468, 8.664852474897335, 8.699539654071515, 8.670704650878907] min patience loss:8.65587655091897 curr ent loss:8.655931247808994 absolute loss difference:5.469689002346456e-05
[11/25/2024 08:17:31 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 5
[11/25/2024 08:17:31 INFO 140341878044480] Timing: train: 1.27s, val: 0.14s, epoch: 1.40s
[11/25/2024 08:17:31 INFO 140341878044480] #progress_metric: host=algo-2, completed 9.3333333333 33334 % of epochs
#metrics {"StartTime": 1732522650.354403, "EndTime": 1732522651.7580364, "Dimensions": {"Algorit hm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 13, "Meta": "training_data_i ter"}, "Metrics": {"Total Records Seen": {"sum": 14868.0, "count": 1, "min": 14868, "max": 1486 8}, "Total Batches Seen": {"sum": 504.0, "count": 1, "min": 504, "max": 504}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Betwee n Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 28.0, "coun t": 1, "min": 28, "max": 28}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi n": 36, "max": 36}}}
[11/25/2024 08:17:31 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=75 6.5397314274699 records/second
[11/25/2024 08:17:31 INFO 140341878044480]
[11/25/2024 08:17:31 INFO 140341878044480] # Starting training for epoch 15
[2024-11-25 08:17:33.042] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr ain", "epoch": 44, "duration": 1283, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:33 INFO 140341878044480] # Finished training epoch 15 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:33 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:33 INFO 140341878044480] Loss (name: value) total: 8.084750592267072
[11/25/2024 08:17:33 INFO 140341878044480] Loss (name: value) kld: 0.13369041482607524
[11/25/2024 08:17:33 INFO 140341878044480] Loss (name: value) recons: 7.951060146755642
[11/25/2024 08:17:33 INFO 140341878044480] Loss (name: value) logppx: 8.084750592267072
[11/25/2024 08:17:33 INFO 140341878044480] #quality_metric: host=algo-2, epoch=15, train total_l oss <loss>=8.084750592267072
[2024-11-25 08:17:33.203] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va lidation", "epoch": 44, "duration": 159, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:33 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac h of size 30.
[11/25/2024 08:17:33 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:33 INFO 140341878044480] Loss (name: value) total: 8.64975820688101
[11/25/2024 08:17:33 INFO 140341878044480] Loss (name: value) kld: 0.1356041620939206

[11/25/2024 08:17:33 INFO 140341878044480] Loss (name: value) recons: 8.514154130984576
[11/25/2024 08:17:33 INFO 140341878044480] Loss (name: value) logppx: 8.64975820688101
[11/25/2024 08:17:33 INFO 140341878044480] #validation_score (15): 8.64975820688101
[11/25/2024 08:17:33 INFO 140341878044480] patience losses:[8.685709948417468, 8.66485247489733
5, 8.699539654071515, 8.670704650878907, 8.655931247808994] min patience loss:8.655931247808994
current loss:8.64975820688101 absolute loss difference:0.006173040927983209
[11/25/2024 08:17:33 INFO 140341878044480] Timing: train: 1.29s, val: 0.16s, epoch: 1.45s
[11/25/2024 08:17:33 INFO 140341878044480] #progress_metric: host=algo-2, completed 10.0 % of ep
ochs
#metrics {"StartTime": 1732522651.758289, "EndTime": 1732522653.2073226, "Dimensions": {"Algorit
hm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 14, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 15930.0, "count": 1, "min": 15930, "max": 1593
0}, "Total Batches Seen": {"sum": 540.0, "count": 1, "min": 540, "max": 540}, "Max Records Seen
Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Betwee
n Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 30.0, "coun
t": 1, "min": 30, "max": 30}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,
"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:17:33 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=73
2.844071159576 records/second
[11/25/2024 08:17:33 INFO 140341878044480]
[11/25/2024 08:17:33 INFO 140341878044480] # Starting training for epoch 16
[2024-11-25 08:17:34.460] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 47, "duration": 1252, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:34 INFO 140341878044480] # Finished training epoch 16 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:17:34 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:34 INFO 140341878044480] Loss (name: value) total: 8.077316051059299
[11/25/2024 08:17:34 INFO 140341878044480] Loss (name: value) kld: 0.1323749303817749
[11/25/2024 08:17:34 INFO 140341878044480] Loss (name: value) recons: 7.9449410756429035
[11/25/2024 08:17:34 INFO 140341878044480] Loss (name: value) logppx: 8.077316051059299
[11/25/2024 08:17:34 INFO 140341878044480] #quality_metric: host=algo-2, epoch=16, train total_l
oss <loss>=8.077316051059299
[2024-11-25 08:17:34.606] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 47, "duration": 144, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:34 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:34 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:34 INFO 140341878044480] Loss (name: value) total: 8.63905479235527
[11/25/2024 08:17:34 INFO 140341878044480] Loss (name: value) kld: 0.155413364752745
[11/25/2024 08:17:34 INFO 140341878044480] Loss (name: value) recons: 8.483641404371996
[11/25/2024 08:17:34 INFO 140341878044480] Loss (name: value) logppx: 8.63905479235527
[11/25/2024 08:17:34 INFO 140341878044480] #validation_score (16): 8.63905479235527
[11/25/2024 08:17:34 INFO 140341878044480] patience losses:[8.664852474897335, 8.69953965407151
5, 8.670704650878907, 8.655931247808994, 8.64975820688101] min patience loss:8.64975820688101 cu
rrent loss:8.63905479235527 absolute loss difference:0.010703414525741195
[11/25/2024 08:17:34 INFO 140341878044480] Timing: train: 1.25s, val: 0.15s, epoch: 1.40s
[11/25/2024 08:17:34 INFO 140341878044480] #progress_metric: host=algo-2, completed 10.666666666
666666 % of epochs
#metrics {"StartTime": 1732522653.2074978, "EndTime": 1732522654.611351, "Dimensions": {"Algorit
hm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 15, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 16992.0, "count": 1, "min": 16992, "max": 1699
2}, "Total Batches Seen": {"sum": 576.0, "count": 1, "min": 576, "max": 576}, "Max Records Seen
Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Betwee
n Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 32.0, "coun
t": 1, "min": 32, "max": 32}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,
"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:17:34 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=75

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6.4337396537728 records/second
[11/25/2024 08:17:34 INFO 140341878044480]
[11/25/2024 08:17:34 INFO 140341878044480] # Starting training for epoch 17
[2024-11-25 08:17:35.920] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 50, "duration": 1308, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:35 INFO 140341878044480] # Finished training epoch 17 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:17:35 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:35 INFO 140341878044480] Loss (name: value) total: 8.085348249364783
[11/25/2024 08:17:35 INFO 140341878044480] Loss (name: value) kld: 0.13392008962454618
[11/25/2024 08:17:35 INFO 140341878044480] Loss (name: value) recons: 7.951428229720504
[11/25/2024 08:17:35 INFO 140341878044480] Loss (name: value) logppx: 8.085348249364783
[11/25/2024 08:17:35 INFO 140341878044480] #quality_metric: host=algo-2, epoch=17, train total_l
oss <loss>=8.085348249364783
[2024-11-25 08:17:36.068] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 50, "duration": 147, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:36 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:36 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:36 INFO 140341878044480] Loss (name: value) total: 8.679798967410356
[11/25/2024 08:17:36 INFO 140341878044480] Loss (name: value) kld: 0.13981830584697233
[11/25/2024 08:17:36 INFO 140341878044480] Loss (name: value) recons: 8.539980844350962
[11/25/2024 08:17:36 INFO 140341878044480] Loss (name: value) logppx: 8.679798967410356
[11/25/2024 08:17:36 INFO 140341878044480] #validation_score (17): 8.679798967410356
[11/25/2024 08:17:36 INFO 140341878044480] patience losses:[8.699539654071515, 8.67070465087890
7, 8.655931247808994, 8.64975820688101, 8.63905479235527] min patience loss:8.63905479235527 cur
rent loss:8.679798967410356 absolute loss difference:0.040744175055086984
[11/25/2024 08:17:36 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count:
1
[11/25/2024 08:17:36 INFO 140341878044480] Timing: train: 1.31s, val: 0.15s, epoch: 1.46s
[11/25/2024 08:17:36 INFO 140341878044480] #progress_metric: host=algo-2, completed 11.333333333
333334 % of epochs
#metrics {"StartTime": 1732522654.6115289, "EndTime": 1732522656.0693784, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 16, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 18054.0, "count": 1, "min": 18054, "max": 1805
4}, "Total Batches Seen": {"sum": 612.0, "count": 1, "min": 612, "max": 612}, "Max Records Seen
Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Betwee
n Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 34.0, "coun
t": 1, "min": 34, "max": 34}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,
"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:17:36 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=72
8.4178401544765 records/second
[11/25/2024 08:17:36 INFO 140341878044480]
[11/25/2024 08:17:36 INFO 140341878044480] # Starting training for epoch 18
[2024-11-25 08:17:36.566] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 29, "duration": 2307, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:36 INFO 140585769518912] # Finished training epoch 10 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:17:36 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:36 INFO 140585769518912] Loss (name: value) total: 8.244426408508014
[11/25/2024 08:17:36 INFO 140585769518912] Loss (name: value) kld: 0.15035406681293612
[11/25/2024 08:17:36 INFO 140585769518912] Loss (name: value) recons: 8.094072354455509
[11/25/2024 08:17:36 INFO 140585769518912] Loss (name: value) logppx: 8.244426408508014
[11/25/2024 08:17:36 INFO 140585769518912] #quality_metric: host=algo-1, epoch=10, train total_l
oss <loss>=8.244426408508014
[2024-11-25 08:17:36.693] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 29, "duration": 126, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:36 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
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h of size 30.
[11/25/2024 08:17:36 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:36 INFO 140585769518912] Loss (name: value) total: 8.61677500406901
[11/25/2024 08:17:36 INFO 140585769518912] Loss (name: value) kld: 0.13060589814797427
[11/25/2024 08:17:36 INFO 140585769518912] Loss (name: value) recons: 8.486169198843148
[11/25/2024 08:17:36 INFO 140585769518912] Loss (name: value) logppx: 8.61677500406901
[11/25/2024 08:17:36 INFO 140585769518912] #validation_score (10): 8.61677500406901
[11/25/2024 08:17:36 INFO 140585769518912] patience losses:[8.660188919458633, 8.62887463691907, 8.627520125951522, 8.639868750939002, 8.627931643755009] min patience loss:8.627520125951522 current loss:8.61677500406901 absolute loss difference:0.0107451218825112
[11/25/2024 08:17:36 INFO 140585769518912] Timing: train: 2.31s, val: 0.13s, epoch: 2.44s
[11/25/2024 08:17:36 INFO 140585769518912] #progress_metric: host=algo-1, completed 6.666666666666667 % of epochs
#metrics {"StartTime": 1732522654.2579014, "EndTime": 1732522656.696844, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 9, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 21260.0, "count": 1, "min": 21260, "max": 21260}, "Total Batches Seen": {"sum": 710.0, "count": 1, "min": 710, "max": 710}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 20.0, "count": 1, "min": 20, "max": 20}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:17:36 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=871.6483061289345 records/second
[11/25/2024 08:17:36 INFO 140585769518912]
[11/25/2024 08:17:36 INFO 140585769518912] # Starting training for epoch 11
[2024-11-25 08:17:37.287] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 53, "duration": 1218, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:37 INFO 140341878044480] # Finished training epoch 18 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:37 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:37 INFO 140341878044480] Loss (name: value) total: 8.071098694977938
[11/25/2024 08:17:37 INFO 140341878044480] Loss (name: value) kld: 0.13328988728699862
[11/25/2024 08:17:37 INFO 140341878044480] Loss (name: value) recons: 7.937808799743652
[11/25/2024 08:17:37 INFO 140341878044480] Loss (name: value) logppx: 8.071098694977938
[11/25/2024 08:17:37 INFO 140341878044480] #quality_metric: host=algo-2, epoch=18, train total_loss <loss>=8.071098694977938
[2024-11-25 08:17:37.425] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 53, "duration": 134, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:37 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:37 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:37 INFO 140341878044480] Loss (name: value) total: 8.635038483448518
[11/25/2024 08:17:37 INFO 140341878044480] Loss (name: value) kld: 0.14172086593432304
[11/25/2024 08:17:37 INFO 140341878044480] Loss (name: value) recons: 8.493317550267928
[11/25/2024 08:17:37 INFO 140341878044480] Loss (name: value) logppx: 8.635038483448518
[11/25/2024 08:17:37 INFO 140341878044480] #validation_score (18): 8.635038483448518
[11/25/2024 08:17:37 INFO 140341878044480] patience losses:[8.670704650878907, 8.655931247808994, 8.64975820688101, 8.63905479235527, 8.679798967410356] min patience loss:8.63905479235527 current loss:8.635038483448518 absolute loss difference:0.004016308906750865
[11/25/2024 08:17:37 INFO 140341878044480] Timing: train: 1.22s, val: 0.14s, epoch: 1.36s
[11/25/2024 08:17:37 INFO 140341878044480] #progress_metric: host=algo-2, completed 12.0 % of epochs
#metrics {"StartTime": 1732522656.069566, "EndTime": 1732522657.4288998, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 17, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 19116.0, "count": 1, "min": 19116, "max": 19116}, "Total Batches Seen": {"sum": 648.0, "count": 1, "min": 648, "max": 648}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 36.0, "coun

t": 1, "min": 36, "max": 36}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:37 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=781.2021933672144 records/second
[11/25/2024 08:17:37 INFO 140341878044480]
[11/25/2024 08:17:37 INFO 140341878044480] # Starting training for epoch 19
[2024-11-25 08:17:39.123] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 32, "duration": 2425, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:39 INFO 140585769518912] # Finished training epoch 11 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:17:39 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:39 INFO 140585769518912] Loss (name: value) total: 8.24281415625917
[11/25/2024 08:17:39 INFO 140585769518912] Loss (name: value) kld: 0.15024336039180486
[11/25/2024 08:17:39 INFO 140585769518912] Loss (name: value) recons: 8.092570782155498
[11/25/2024 08:17:39 INFO 140585769518912] Loss (name: value) logppx: 8.24281415625917
[11/25/2024 08:17:39 INFO 140585769518912] #quality_metric: host=algo-1, epoch=11, train total_loss <loss>=8.24281415625917
[2024-11-25 08:17:39.264] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 32, "duration": 139, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:39 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:39 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:39 INFO 140585769518912] Loss (name: value) total: 8.611398706680689
[11/25/2024 08:17:39 INFO 140585769518912] Loss (name: value) kld: 0.13565847934820713
[11/25/2024 08:17:39 INFO 140585769518912] Loss (name: value) recons: 8.475740325145232
[11/25/2024 08:17:39 INFO 140585769518912] Loss (name: value) logppx: 8.611398706680689
[11/25/2024 08:17:39 INFO 140585769518912] #validation_score (11): 8.611398706680689
[11/25/2024 08:17:39 INFO 140585769518912] patience losses:[8.62887463691907, 8.627520125951522, 8.639868750939002, 8.627931643755009, 8.61677500406901] min patience loss:8.61677500406901 current loss:8.611398706680689 absolute loss difference:0.0053762973883220155
[11/25/2024 08:17:39 INFO 140585769518912] Timing: train: 2.43s, val: 0.14s, epoch: 2.57s
[11/25/2024 08:17:39 INFO 140585769518912] #progress_metric: host=algo-1, completed 7.333333333333333 % of epochs
#metrics {"StartTime": 1732522656.6970327, "EndTime": 1732522659.2685487, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 10, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 23386.0, "count": 1, "min": 23386, "max": 23386}, "Total Batches Seen": {"sum": 781.0, "count": 1, "min": 781, "max": 781}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 22.0, "count": 1, "min": 22, "max": 22}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:17:39 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=826.6172225349313 records/second
[11/25/2024 08:17:39 INFO 140585769518912]
[11/25/2024 08:17:39 INFO 140585769518912] # Starting training for epoch 12
[2024-11-25 08:17:38.701] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 56, "duration": 1272, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:38 INFO 140341878044480] # Finished training epoch 19 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:38 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:38 INFO 140341878044480] Loss (name: value) total: 8.064712241843894
[11/25/2024 08:17:38 INFO 140341878044480] Loss (name: value) kld: 0.13345387754616914
[11/25/2024 08:17:38 INFO 140341878044480] Loss (name: value) recons: 7.9312583711412215
[11/25/2024 08:17:38 INFO 140341878044480] Loss (name: value) logppx: 8.064712241843894
[11/25/2024 08:17:38 INFO 140341878044480] #quality_metric: host=algo-2, epoch=19, train total_loss <loss>=8.064712241843894
[2024-11-25 08:17:38.843] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va

lidation", "epoch": 56, "duration": 140, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:38 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:38 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:38 INFO 140341878044480] Loss (name: value) total: 8.673922181740785
[11/25/2024 08:17:38 INFO 140341878044480] Loss (name: value) kld: 0.12320768710894463
[11/25/2024 08:17:38 INFO 140341878044480] Loss (name: value) recons: 8.550714424328927
[11/25/2024 08:17:38 INFO 140341878044480] Loss (name: value) logppx: 8.673922181740785
[11/25/2024 08:17:38 INFO 140341878044480] #validation_score (19): 8.673922181740785
[11/25/2024 08:17:38 INFO 140341878044480] patience losses:[8.655931247808994, 8.64975820688101,
8.63905479235527, 8.679798967410356, 8.635038483448518] min patience loss:8.635038483448518 curr
ent loss:8.673922181740785 absolute loss difference:0.0388836982922669
[11/25/2024 08:17:38 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count:
1
[11/25/2024 08:17:38 INFO 140341878044480] Timing: train: 1.27s, val: 0.14s, epoch: 1.42s
[11/25/2024 08:17:38 INFO 140341878044480] #progress_metric: host=algo-2, completed 12.666666666
666666 % of epochs
#metrics {"StartTime": 1732522657.4290895, "EndTime": 1732522658.8444054, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 18, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 20178.0, "count": 1, "min": 20178, "max": 2017
8}, "Total Batches Seen": {"sum": 684.0, "count": 1, "min": 684, "max": 684}, "Max Records Seen
Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Betwee
n Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 38.0, "coun
t": 1, "min": 38, "max": 38}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,
"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:17:38 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=75
0.2969365232085 records/second
[11/25/2024 08:17:38 INFO 140341878044480]
[11/25/2024 08:17:38 INFO 140341878044480] # Starting training for epoch 20
[2024-11-25 08:17:40.099] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 59, "duration": 1254, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:40 INFO 140341878044480] # Finished training epoch 20 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:17:40 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:40 INFO 140341878044480] Loss (name: value) total: 8.061023330688476
[11/25/2024 08:17:40 INFO 140341878044480] Loss (name: value) kld: 0.13471527011306197
[11/25/2024 08:17:40 INFO 140341878044480] Loss (name: value) recons: 7.926308045563874
[11/25/2024 08:17:40 INFO 140341878044480] Loss (name: value) logppx: 8.061023330688476
[11/25/2024 08:17:40 INFO 140341878044480] #quality_metric: host=algo-2, epoch=20, train total_l
oss <loss>=8.061023330688476
[2024-11-25 08:17:40.257] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 59, "duration": 154, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:40 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:40 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:40 INFO 140341878044480] Loss (name: value) total: 8.650820727226062
[11/25/2024 08:17:40 INFO 140341878044480] Loss (name: value) kld: 0.14652112997495212
[11/25/2024 08:17:40 INFO 140341878044480] Loss (name: value) recons: 8.50429949638171
[11/25/2024 08:17:40 INFO 140341878044480] Loss (name: value) logppx: 8.650820727226062
[11/25/2024 08:17:40 INFO 140341878044480] #validation_score (20): 8.650820727226062
[11/25/2024 08:17:40 INFO 140341878044480] patience losses:[8.64975820688101, 8.63905479235527,
8.679798967410356, 8.635038483448518, 8.673922181740785] min patience loss:8.635038483448518 cur
rent loss:8.650820727226062 absolute loss difference:0.01578224377754367
[11/25/2024 08:17:40 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count:
2
[11/25/2024 08:17:40 INFO 140341878044480] Timing: train: 1.26s, val: 0.16s, epoch: 1.41s
[11/25/2024 08:17:40 INFO 140341878044480] #progress_metric: host=algo-2, completed 13.333333333
333334 % of epochs

#metrics {"StartTime": 1732522658.844696, "EndTime": 1732522660.258228, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 19, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 21240.0, "count": 1, "min": 21240, "max": 21240}, "Total Batches Seen": {"sum": 720.0, "count": 1, "min": 720, "max": 720}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 40.0, "count": 1, "min": 40, "max": 40}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:40 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=751.2465000809542 records/second
[11/25/2024 08:17:40 INFO 140341878044480]
[11/25/2024 08:17:40 INFO 140341878044480] # Starting training for epoch 21
[2024-11-25 08:17:41.480] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 62, "duration": 1221, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:41 INFO 140341878044480] # Finished training epoch 21 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:41 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:41 INFO 140341878044480] Loss (name: value) total: 8.04680790371365
[11/25/2024 08:17:41 INFO 140341878044480] Loss (name: value) kld: 0.13326588383427374
[11/25/2024 08:17:41 INFO 140341878044480] Loss (name: value) recons: 7.913542026943631
[11/25/2024 08:17:41 INFO 140341878044480] Loss (name: value) logppx: 8.04680790371365
[11/25/2024 08:17:41 INFO 140341878044480] #quality_metric: host=algo-2, epoch=21, train total_loss <loss>=8.04680790371365
[2024-11-25 08:17:41.609] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 62, "duration": 128, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:41 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:41 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:41 INFO 140341878044480] Loss (name: value) total: 8.643484692695813
[11/25/2024 08:17:41 INFO 140341878044480] Loss (name: value) kld: 0.14474965914701804
[11/25/2024 08:17:41 INFO 140341878044480] Loss (name: value) recons: 8.49873496813652
[11/25/2024 08:17:41 INFO 140341878044480] Loss (name: value) logppx: 8.643484692695813
[11/25/2024 08:17:41 INFO 140341878044480] #validation_score (21): 8.643484692695813
[11/25/2024 08:17:41 INFO 140341878044480] patience losses:[8.63905479235527, 8.679798967410356, 8.635038483448518, 8.673922181740785, 8.650820727226062] min patience loss:8.635038483448518 current loss:8.643484692695813 absolute loss difference:0.008446209247294334
[11/25/2024 08:17:41 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 3
[11/25/2024 08:17:41 INFO 140341878044480] Timing: train: 1.22s, val: 0.13s, epoch: 1.35s
[11/25/2024 08:17:41 INFO 140341878044480] #progress_metric: host=algo-2, completed 14.0 % of epochs
#metrics {"StartTime": 1732522660.2584352, "EndTime": 1732522661.6106932, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 20, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 22302.0, "count": 1, "min": 22302, "max": 22302}, "Total Batches Seen": {"sum": 756.0, "count": 1, "min": 756, "max": 756}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 42.0, "count": 1, "min": 42, "max": 42}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:41 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=785.2750225876599 records/second
[11/25/2024 08:17:41 INFO 140341878044480]
[11/25/2024 08:17:41 INFO 140341878044480] # Starting training for epoch 22
[2024-11-25 08:17:41.541] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 35, "duration": 2271, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:41 INFO 140585769518912] # Finished training epoch 12 on 2126 examples from 71 batches, each of size 30.

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[11/25/2024 08:17:41 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:41 INFO 140585769518912] Loss (name: value) total: 8.237764084507042
[11/25/2024 08:17:41 INFO 140585769518912] Loss (name: value) kld: 0.15172624789493186
[11/25/2024 08:17:41 INFO 140585769518912] Loss (name: value) recons: 8.086037821165274
[11/25/2024 08:17:41 INFO 140585769518912] Loss (name: value) logppx: 8.237764084507042
[11/25/2024 08:17:41 INFO 140585769518912] #quality_metric: host=algo-1, epoch=12, train total_l
oss <loss>=8.237764084507042
[2024-11-25 08:17:41.658] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 35, "duration": 116, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:41 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:41 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:41 INFO 140585769518912] Loss (name: value) total: 8.619900004069011
[11/25/2024 08:17:41 INFO 140585769518912] Loss (name: value) kld: 0.14232798234010355
[11/25/2024 08:17:41 INFO 140585769518912] Loss (name: value) recons: 8.477572123209635
[11/25/2024 08:17:41 INFO 140585769518912] Loss (name: value) logppx: 8.619900004069011
[11/25/2024 08:17:41 INFO 140585769518912] #validation_score (12): 8.619900004069011
[11/25/2024 08:17:41 INFO 140585769518912] patience losses:[8.627520125951522, 8.63986875093900
2, 8.627931643755009, 8.61677500406901, 8.611398706680689] min patience loss:8.611398706680689 c
urrent loss:8.619900004069011 absolute loss difference:0.008501297388322726
[11/25/2024 08:17:41 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count:
1
[11/25/2024 08:17:41 INFO 140585769518912] Timing: train: 2.27s, val: 0.12s, epoch: 2.39s
[11/25/2024 08:17:41 INFO 140585769518912] #progress_metric: host=algo-1, completed 8.0 % of epo
chs
#metrics {"StartTime": 1732522659.269264, "EndTime": 1732522661.660379, "Dimensions": {"Algorith
m": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 11, "Meta": "training_data_it
er"}, "Metrics": {"Total Records Seen": {"sum": 25512.0, "count": 1, "min": 25512, "max": 2551
2}, "Total Batches Seen": {"sum": 852.0, "count": 1, "min": 852, "max": 852}, "Max Records Seen
Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Betwee
n Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 24.0, "coun
t": 1, "min": 24, "max": 24}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:17:41 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=88
9.0679651028654 records/second
[11/25/2024 08:17:41 INFO 140585769518912]
[11/25/2024 08:17:41 INFO 140585769518912] # Starting training for epoch 13
[2024-11-25 08:17:44.004] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 38, "duration": 2343, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:44 INFO 140585769518912] # Finished training epoch 13 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:17:44 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:44 INFO 140585769518912] Loss (name: value) total: 8.225326516594686
[11/25/2024 08:17:44 INFO 140585769518912] Loss (name: value) kld: 0.1556452644263075
[11/25/2024 08:17:44 INFO 140585769518912] Loss (name: value) recons: 8.069681215957857
[11/25/2024 08:17:44 INFO 140585769518912] Loss (name: value) logppx: 8.225326516594686
[11/25/2024 08:17:44 INFO 140585769518912] #quality_metric: host=algo-1, epoch=13, train total_l
oss <loss>=8.225326516594686
[2024-11-25 08:17:44.141] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 38, "duration": 136, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:44 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:44 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:44 INFO 140585769518912] Loss (name: value) total: 8.61802970690605
[11/25/2024 08:17:44 INFO 140585769518912] Loss (name: value) kld: 0.13624648803319686
[11/25/2024 08:17:44 INFO 140585769518912] Loss (name: value) recons: 8.481783235990084
[11/25/2024 08:17:44 INFO 140585769518912] Loss (name: value) logppx: 8.61802970690605
[11/25/2024 08:17:44 INFO 140585769518912] #validation_score (13): 8.61802970690605
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[11/25/2024 08:17:44 INFO 140585769518912] patience losses:[8.639868750939002, 8.627931643755009, 8.61677500406901, 8.611398706680689, 8.619900004069011] min patience loss:8.611398706680689 current loss:8.61802970690605 absolute loss difference:0.006631000225361561
[11/25/2024 08:17:44 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count: 2
[11/25/2024 08:17:44 INFO 140585769518912] Timing: train: 2.34s, val: 0.14s, epoch: 2.48s
[11/25/2024 08:17:44 INFO 140585769518912] #progress_metric: host=algo-1, completed 8.666666666666666 % of epochs
#metrics {"StartTime": 1732522661.660578, "EndTime": 1732522664.1425705, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 12, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 27638.0, "count": 1, "min": 27638, "max": 27638}, "Total Batches Seen": {"sum": 923.0, "count": 1, "min": 923, "max": 923}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 26.0, "count": 1, "min": 26, "max": 26}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:17:44 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=856.5325244208234 records/second
[11/25/2024 08:17:44 INFO 140585769518912]
[11/25/2024 08:17:44 INFO 140585769518912] # Starting training for epoch 14
[2024-11-25 08:17:46.504] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 41, "duration": 2361, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:46 INFO 140585769518912] # Finished training epoch 14 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:17:46 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:46 INFO 140585769518912] Loss (name: value) total: 8.203013696804852
[11/25/2024 08:17:46 INFO 140585769518912] Loss (name: value) kld: 0.15781815432606727
[11/25/2024 08:17:46 INFO 140585769518912] Loss (name: value) recons: 8.045195544605523
[11/25/2024 08:17:46 INFO 140585769518912] Loss (name: value) logppx: 8.203013696804852
[11/25/2024 08:17:46 INFO 140585769518912] #quality_metric: host=algo-1, epoch=14, train total_loss <loss>=8.203013696804852
[2024-11-25 08:17:42.847] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 65, "duration": 1236, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:42 INFO 140341878044480] # Finished training epoch 22 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:42 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:42 INFO 140341878044480] Loss (name: value) total: 8.048154491848416
[11/25/2024 08:17:42 INFO 140341878044480] Loss (name: value) kld: 0.13589790021931683
[11/25/2024 08:17:42 INFO 140341878044480] Loss (name: value) recons: 7.912256551671911
[11/25/2024 08:17:42 INFO 140341878044480] Loss (name: value) logppx: 8.048154491848416
[11/25/2024 08:17:42 INFO 140341878044480] #quality_metric: host=algo-2, epoch=22, train total_loss <loss>=8.048154491848416
[2024-11-25 08:17:43.020] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 65, "duration": 171, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:43 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:43 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:43 INFO 140341878044480] Loss (name: value) total: 8.636354064941406
[11/25/2024 08:17:43 INFO 140341878044480] Loss (name: value) kld: 0.13119046810345772
[11/25/2024 08:17:43 INFO 140341878044480] Loss (name: value) recons: 8.50516345684345
[11/25/2024 08:17:43 INFO 140341878044480] Loss (name: value) logppx: 8.636354064941406
[11/25/2024 08:17:43 INFO 140341878044480] #validation_score (22): 8.636354064941406
[11/25/2024 08:17:43 INFO 140341878044480] patience losses:[8.679798967410356, 8.635038483448518, 8.673922181740785, 8.650820727226062, 8.643484692695813] min patience loss:8.635038483448518 current loss:8.636354064941406 absolute loss difference:0.0013155814928875742
[11/25/2024 08:17:43 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 4
[11/25/2024 08:17:43 INFO 140341878044480] Timing: train: 1.24s, val: 0.17s, epoch: 1.41s

[11/25/2024 08:17:43 INFO 140341878044480] #progress_metric: host=algo-2, completed 14.666666666666666 % of epochs
#metrics {"StartTime": 1732522661.6109018, "EndTime": 1732522663.0226576, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 21, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 23364.0, "count": 1, "min": 23364, "max": 23364}, "Total Batches Seen": {"sum": 792.0, "count": 1, "min": 792, "max": 792}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 44.0, "count": 1, "min": 44, "max": 44}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:43 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=752.1745907269953 records/second
[11/25/2024 08:17:43 INFO 140341878044480]
[11/25/2024 08:17:43 INFO 140341878044480] # Starting training for epoch 23
[2024-11-25 08:17:44.250] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 68, "duration": 1227, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:44 INFO 140341878044480] # Finished training epoch 23 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:44 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:44 INFO 140341878044480] Loss (name: value) total: 8.02338892618815
[11/25/2024 08:17:44 INFO 140341878044480] Loss (name: value) kld: 0.13753838031380264
[11/25/2024 08:17:44 INFO 140341878044480] Loss (name: value) recons: 7.885850616737648
[11/25/2024 08:17:44 INFO 140341878044480] Loss (name: value) logppx: 8.02338892618815
[11/25/2024 08:17:44 INFO 140341878044480] #quality_metric: host=algo-2, epoch=23, train total_loss <loss>=8.02338892618815
[2024-11-25 08:17:44.390] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 68, "duration": 138, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:44 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:44 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:44 INFO 140341878044480] Loss (name: value) total: 8.610359544020433
[11/25/2024 08:17:44 INFO 140341878044480] Loss (name: value) kld: 0.13423329010987894
[11/25/2024 08:17:44 INFO 140341878044480] Loss (name: value) recons: 8.476126216008113
[11/25/2024 08:17:44 INFO 140341878044480] Loss (name: value) logppx: 8.610359544020433
[11/25/2024 08:17:44 INFO 140341878044480] #validation_score (23): 8.610359544020433
[11/25/2024 08:17:44 INFO 140341878044480] patience losses:[8.635038483448518, 8.673922181740785, 8.650820727226062, 8.643484692695813, 8.636354064941406] min patience loss:8.635038483448518 current loss:8.610359544020433 absolute loss difference:0.0246789394280853
[11/25/2024 08:17:44 INFO 140341878044480] Timing: train: 1.23s, val: 0.14s, epoch: 1.37s
[11/25/2024 08:17:44 INFO 140341878044480] #progress_metric: host=algo-2, completed 15.333333333333334 % of epochs
#metrics {"StartTime": 1732522663.0230746, "EndTime": 1732522664.393168, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 22, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 24426.0, "count": 1, "min": 24426, "max": 24426}, "Total Batches Seen": {"sum": 828.0, "count": 1, "min": 828, "max": 828}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 46.0, "count": 1, "min": 46, "max": 46}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:44 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=775.0356643180214 records/second
[11/25/2024 08:17:44 INFO 140341878044480]
[11/25/2024 08:17:44 INFO 140341878044480] # Starting training for epoch 24
[2024-11-25 08:17:45.648] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 71, "duration": 1254, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:45 INFO 140341878044480] # Finished training epoch 24 on 1062 examples from 36 batches, each of size 30.

[11/25/2024 08:17:45 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:45 INFO 140341878044480] Loss (name: value) total: 8.015335966039586
[11/25/2024 08:17:45 INFO 140341878044480] Loss (name: value) kld: 0.1371549736570429
[11/25/2024 08:17:45 INFO 140341878044480] Loss (name: value) recons: 7.878180948893229
[11/25/2024 08:17:45 INFO 140341878044480] Loss (name: value) logppx: 8.015335966039586
[11/25/2024 08:17:45 INFO 140341878044480] #quality_metric: host=algo-2, epoch=24, train total_loss <loss>=8.015335966039586
[2024-11-25 08:17:45.816] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 71, "duration": 167, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:45 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:45 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:45 INFO 140341878044480] Loss (name: value) total: 8.624796784229767
[11/25/2024 08:17:45 INFO 140341878044480] Loss (name: value) kld: 0.13750788920964951
[11/25/2024 08:17:45 INFO 140341878044480] Loss (name: value) recons: 8.487288763584235
[11/25/2024 08:17:45 INFO 140341878044480] Loss (name: value) logppx: 8.624796784229767
[11/25/2024 08:17:45 INFO 140341878044480] #validation_score (24): 8.624796784229767
[11/25/2024 08:17:45 INFO 140341878044480] patience losses:[8.673922181740785, 8.650820727226062, 8.643484692695813, 8.636354064941406, 8.610359544020433] min patience loss:8.610359544020433 current loss:8.624796784229767 absolute loss difference:0.014437240209334234
[11/25/2024 08:17:45 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 1
[11/25/2024 08:17:45 INFO 140341878044480] Timing: train: 1.26s, val: 0.17s, epoch: 1.43s
[11/25/2024 08:17:45 INFO 140341878044480] #progress_metric: host=algo-2, completed 16.0 % of epochs
#metrics {"StartTime": 1732522664.3933449, "EndTime": 1732522665.8196118, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 23, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 25488.0, "count": 1, "min": 25488, "max": 25488}, "Total Batches Seen": {"sum": 864.0, "count": 1, "min": 864, "max": 864}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 48.0, "count": 1, "min": 48, "max": 48}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:45 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=744.418238514944 records/second
[11/25/2024 08:17:45 INFO 140341878044480]
[11/25/2024 08:17:45 INFO 140341878044480] # Starting training for epoch 25
[2024-11-25 08:17:46.639] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 41, "duration": 133, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:46 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:46 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:46 INFO 140585769518912] Loss (name: value) total: 8.5879637498122
[11/25/2024 08:17:46 INFO 140585769518912] Loss (name: value) kld: 0.13349951413961558
[11/25/2024 08:17:46 INFO 140585769518912] Loss (name: value) recons: 8.454464291303585
[11/25/2024 08:17:46 INFO 140585769518912] Loss (name: value) logppx: 8.5879637498122
[11/25/2024 08:17:46 INFO 140585769518912] #validation_score (14): 8.5879637498122
[11/25/2024 08:17:46 INFO 140585769518912] patience losses:[8.627931643755009, 8.61677500406901, 8.611398706680689, 8.619900004069011, 8.61802970690605] min patience loss:8.611398706680689 current loss:8.5879637498122 absolute loss difference:0.0234349568684884
[11/25/2024 08:17:46 INFO 140585769518912] Timing: train: 2.36s, val: 0.14s, epoch: 2.50s
[11/25/2024 08:17:46 INFO 140585769518912] #progress_metric: host=algo-1, completed 9.333333333333334 % of epochs
#metrics {"StartTime": 1732522664.142815, "EndTime": 1732522666.6431975, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 13, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 29764.0, "count": 1, "min": 29764, "max": 29764}, "Total Batches Seen": {"sum": 994.0, "count": 1, "min": 994, "max": 994}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Betwee

n Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 28.0, "coun
t": 1, "min": 28, "max": 28}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:17:46 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=85
0.2248590759655 records/second
[11/25/2024 08:17:46 INFO 140585769518912]
[11/25/2024 08:17:46 INFO 140585769518912] # Starting training for epoch 15
[2024-11-25 08:17:47.018] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 74, "duration": 1197, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:47 INFO 140341878044480] # Finished training epoch 25 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:17:47 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:47 INFO 140341878044480] Loss (name: value) total: 7.988865414372197
[11/25/2024 08:17:47 INFO 140341878044480] Loss (name: value) kld: 0.14172967738575407
[11/25/2024 08:17:47 INFO 140341878044480] Loss (name: value) recons: 7.847135748686614
[11/25/2024 08:17:47 INFO 140341878044480] Loss (name: value) logppx: 7.988865414372197
[11/25/2024 08:17:47 INFO 140341878044480] #quality_metric: host=algo-2, epoch=25, train total_l
oss <loss>=7.988865414372197
[2024-11-25 08:17:47.186] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 74, "duration": 166, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:47 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:47 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:47 INFO 140341878044480] Loss (name: value) total: 8.608509865785257
[11/25/2024 08:17:47 INFO 140341878044480] Loss (name: value) kld: 0.1358324075356508
[11/25/2024 08:17:47 INFO 140341878044480] Loss (name: value) recons: 8.472677651429787
[11/25/2024 08:17:47 INFO 140341878044480] Loss (name: value) logppx: 8.608509865785257
[11/25/2024 08:17:47 INFO 140341878044480] #validation_score (25): 8.608509865785257
[11/25/2024 08:17:47 INFO 140341878044480] patience losses:[8.650820727226062, 8.64348469269581
3, 8.636354064941406, 8.610359544020433, 8.624796784229767] min patience loss:8.610359544020433
current loss:8.608509865785257 absolute loss difference:0.0018496782351764551
[11/25/2024 08:17:47 INFO 140341878044480] Timing: train: 1.20s, val: 0.17s, epoch: 1.37s
[11/25/2024 08:17:47 INFO 140341878044480] #progress_metric: host=algo-2, completed 16.666666666
666668 % of epochs
#metrics {"StartTime": 1732522665.8203049, "EndTime": 1732522667.1925368, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 24, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 26550.0, "count": 1, "min": 26550, "max": 2655
0}, "Total Batches Seen": {"sum": 900.0, "count": 1, "min": 900, "max": 900}, "Max Records Seen
Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Betwee
n Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 50.0, "coun
t": 1, "min": 50, "max": 50}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,
"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:17:47 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=77
3.7281864138544 records/second
[11/25/2024 08:17:47 INFO 140341878044480]
[11/25/2024 08:17:47 INFO 140341878044480] # Starting training for epoch 26
[2024-11-25 08:17:48.460] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 77, "duration": 1264, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:48 INFO 140341878044480] # Finished training epoch 26 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:17:48 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:48 INFO 140341878044480] Loss (name: value) total: 7.979308446248372
[11/25/2024 08:17:48 INFO 140341878044480] Loss (name: value) kld: 0.14341106017430624
[11/25/2024 08:17:48 INFO 140341878044480] Loss (name: value) recons: 7.835897375036169
[11/25/2024 08:17:48 INFO 140341878044480] Loss (name: value) logppx: 7.979308446248372
[11/25/2024 08:17:48 INFO 140341878044480] #quality_metric: host=algo-2, epoch=26, train total_l
oss <loss>=7.979308446248372

[2024-11-25 08:17:48.607] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 77, "duration": 145, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:48 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:48 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:48 INFO 140341878044480] Loss (name: value) total: 8.646962209848256
[11/25/2024 08:17:48 INFO 140341878044480] Loss (name: value) kld: 0.14373146631778816
[11/25/2024 08:17:48 INFO 140341878044480] Loss (name: value) recons: 8.503230676895534
[11/25/2024 08:17:48 INFO 140341878044480] Loss (name: value) logppx: 8.646962209848256
[11/25/2024 08:17:48 INFO 140341878044480] #validation_score (26): 8.646962209848256
[11/25/2024 08:17:48 INFO 140341878044480] patience losses:[8.643484692695813, 8.63635406494140
6, 8.610359544020433, 8.624796784229767, 8.608509865785257] min patience loss:8.608509865785257
current loss:8.646962209848256 absolute loss difference:0.0384523440629998
[11/25/2024 08:17:48 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count:
1
[11/25/2024 08:17:48 INFO 140341878044480] Timing: train: 1.27s, val: 0.15s, epoch: 1.42s
[11/25/2024 08:17:48 INFO 140341878044480] #progress_metric: host=algo-2, completed 17.333333333
333332 % of epochs
#metrics {"StartTime": 1732522667.1931872, "EndTime": 1732522668.6089683, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 25, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 27612.0, "count": 1, "min": 27612, "max": 2761
2}, "Total Batches Seen": {"sum": 936.0, "count": 1, "min": 936, "max": 936}, "Max Records Seen
Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Betwee
n Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 52.0, "coun
t": 1, "min": 52, "max": 52}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,
"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:17:48 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=75
0.0325142278582 records/second
[11/25/2024 08:17:48 INFO 140341878044480]
[11/25/2024 08:17:48 INFO 140341878044480] # Starting training for epoch 27
[2024-11-25 08:17:48.970] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 44, "duration": 2327, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:48 INFO 140585769518912] # Finished training epoch 15 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:17:48 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:48 INFO 140585769518912] Loss (name: value) total: 8.178431200197604
[11/25/2024 08:17:48 INFO 140585769518912] Loss (name: value) kld: 0.1609296997388204
[11/25/2024 08:17:48 INFO 140585769518912] Loss (name: value) recons: 8.017501494358402
[11/25/2024 08:17:48 INFO 140585769518912] Loss (name: value) logppx: 8.178431200197604
[11/25/2024 08:17:48 INFO 140585769518912] #quality_metric: host=algo-1, epoch=15, train total_l
oss <loss>=8.178431200197604
[2024-11-25 08:17:49.096] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 44, "duration": 123, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:49 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:49 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:49 INFO 140585769518912] Loss (name: value) total: 8.581209896772336
[11/25/2024 08:17:49 INFO 140585769518912] Loss (name: value) kld: 0.12620674402285845
[11/25/2024 08:17:49 INFO 140585769518912] Loss (name: value) recons: 8.455003200433193
[11/25/2024 08:17:49 INFO 140585769518912] Loss (name: value) logppx: 8.581209896772336
[11/25/2024 08:17:49 INFO 140585769518912] #validation_score (15): 8.581209896772336
[11/25/2024 08:17:49 INFO 140585769518912] patience losses:[8.61677500406901, 8.611398706680689,
8.619900004069011, 8.61802970690605, 8.5879637498122] min patience loss:8.5879637498122 current
loss:8.581209896772336 absolute loss difference:0.00675385303986431
[11/25/2024 08:17:49 INFO 140585769518912] Timing: train: 2.33s, val: 0.13s, epoch: 2.46s
[11/25/2024 08:17:49 INFO 140585769518912] #progress_metric: host=algo-1, completed 10.0 % of ep
ochs
#metrics {"StartTime": 1732522666.6434484, "EndTime": 1732522669.0998507, "Dimensions": {"Algori

thm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 14, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 31890.0, "count": 1, "min": 31890, "max": 31890}, "Total Batches Seen": {"sum": 1065.0, "count": 1, "min": 1065, "max": 1065}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 30.0, "count": 1, "min": 30, "max": 30}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:17:49 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=865.4424202249622 records/second
[11/25/2024 08:17:49 INFO 140585769518912]
[11/25/2024 08:17:49 INFO 140585769518912] # Starting training for epoch 16
[2024-11-25 08:17:49.826] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 80, "duration": 1217, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:49 INFO 140341878044480] # Finished training epoch 27 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:49 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:49 INFO 140341878044480] Loss (name: value) total: 7.958843796341507
[11/25/2024 08:17:49 INFO 140341878044480] Loss (name: value) kld: 0.14532401164372763
[11/25/2024 08:17:49 INFO 140341878044480] Loss (name: value) recons: 7.813519823992694
[11/25/2024 08:17:49 INFO 140341878044480] Loss (name: value) logppx: 7.958843796341507
[11/25/2024 08:17:49 INFO 140341878044480] #quality_metric: host=algo-2, epoch=27, train total_loss <loss>=7.958843796341507
[2024-11-25 08:17:50.002] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 80, "duration": 174, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:50 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:50 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:50 INFO 140341878044480] Loss (name: value) total: 8.60243397248097
[11/25/2024 08:17:50 INFO 140341878044480] Loss (name: value) kld: 0.1361275654572707
[11/25/2024 08:17:50 INFO 140341878044480] Loss (name: value) recons: 8.466306559244792
[11/25/2024 08:17:50 INFO 140341878044480] Loss (name: value) logppx: 8.60243397248097
[11/25/2024 08:17:50 INFO 140341878044480] #validation_score (27): 8.60243397248097
[11/25/2024 08:17:50 INFO 140341878044480] patience losses:[8.636354064941406, 8.610359544020433, 8.624796784229767, 8.608509865785257, 8.646962209848256] min patience loss:8.608509865785257 current loss:8.60243397248097 absolute loss difference:0.006075893304286595
[11/25/2024 08:17:50 INFO 140341878044480] Timing: train: 1.22s, val: 0.18s, epoch: 1.40s
[11/25/2024 08:17:50 INFO 140341878044480] #progress_metric: host=algo-2, completed 18.0 % of epochs
#metrics {"StartTime": 1732522668.6093755, "EndTime": 1732522670.0060341, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 26, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 28674.0, "count": 1, "min": 28674, "max": 28674}, "Total Batches Seen": {"sum": 972.0, "count": 1, "min": 972, "max": 972}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 54.0, "count": 1, "min": 54, "max": 54}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:50 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=760.3127599073973 records/second
[11/25/2024 08:17:50 INFO 140341878044480]
[11/25/2024 08:17:50 INFO 140341878044480] # Starting training for epoch 28
[2024-11-25 08:17:51.485] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 47, "duration": 2385, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:51 INFO 140585769518912] # Finished training epoch 16 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:17:51 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:51 INFO 140585769518912] Loss (name: value) total: 8.168388724886755
[11/25/2024 08:17:51 INFO 140585769518912] Loss (name: value) kld: 0.16634898924491776

[11/25/2024 08:17:51 INFO 140585769518912] Loss (name: value) recons: 8.002039799220125
[11/25/2024 08:17:51 INFO 140585769518912] Loss (name: value) logppx: 8.168388724886755
[11/25/2024 08:17:51 INFO 140585769518912] #quality_metric: host=algo-1, epoch=16, train total_loss <loss>=8.168388724886755
[2024-11-25 08:17:51.214] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 83, "duration": 1206, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:51 INFO 140341878044480] # Finished training epoch 28 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:51 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:51 INFO 140341878044480] Loss (name: value) total: 7.942847802903917
[11/25/2024 08:17:51 INFO 140341878044480] Loss (name: value) kld: 0.1502133826414744
[11/25/2024 08:17:51 INFO 140341878044480] Loss (name: value) recons: 7.7926344059131765
[11/25/2024 08:17:51 INFO 140341878044480] Loss (name: value) logppx: 7.942847802903917
[11/25/2024 08:17:51 INFO 140341878044480] #quality_metric: host=algo-2, epoch=28, train total_loss <loss>=7.942847802903917
[2024-11-25 08:17:51.382] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 83, "duration": 165, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:51 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:51 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:51 INFO 140341878044480] Loss (name: value) total: 8.631751740284455
[11/25/2024 08:17:51 INFO 140341878044480] Loss (name: value) kld: 0.13054090952261901
[11/25/2024 08:17:51 INFO 140341878044480] Loss (name: value) recons: 8.50121076534956
[11/25/2024 08:17:51 INFO 140341878044480] Loss (name: value) logppx: 8.631751740284455
[11/25/2024 08:17:51 INFO 140341878044480] #validation_score (28): 8.631751740284455
[11/25/2024 08:17:51 INFO 140341878044480] patience losses:[8.610359544020433, 8.624796784229767, 8.608509865785257, 8.646962209848256, 8.60243397248097] min patience loss:8.60243397248097 current loss:8.631751740284455 absolute loss difference:0.029317767803485495
[11/25/2024 08:17:51 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 1
[11/25/2024 08:17:51 INFO 140341878044480] Timing: train: 1.21s, val: 0.17s, epoch: 1.38s
[11/25/2024 08:17:51 INFO 140341878044480] #progress_metric: host=algo-2, completed 18.666666666666668 % of epochs
#metrics {"StartTime": 1732522670.0063043, "EndTime": 1732522671.3839362, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 27, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 29736.0, "count": 1, "min": 29736, "max": 29736}, "Total Batches Seen": {"sum": 1008.0, "count": 1, "min": 1008, "max": 1008}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 56.0, "count": 1, "min": 56, "max": 56}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:51 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=770.8088317974612 records/second
[11/25/2024 08:17:51 INFO 140341878044480]
[11/25/2024 08:17:51 INFO 140341878044480] # Starting training for epoch 29
[2024-11-25 08:17:51.640] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 47, "duration": 153, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:51 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:51 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:51 INFO 140585769518912] Loss (name: value) total: 8.584236105894432
[11/25/2024 08:17:51 INFO 140585769518912] Loss (name: value) kld: 0.13281766634721023
[11/25/2024 08:17:51 INFO 140585769518912] Loss (name: value) recons: 8.45141840225611
[11/25/2024 08:17:51 INFO 140585769518912] Loss (name: value) logppx: 8.584236105894432
[11/25/2024 08:17:51 INFO 140585769518912] #validation_score (16): 8.584236105894432
[11/25/2024 08:17:51 INFO 140585769518912] patience losses:[8.611398706680689, 8.619900004069011, 8.61802970690605, 8.5879637498122, 8.581209896772336] min patience loss:8.581209896772336 current loss:8.584236105894432 absolute loss difference:0.0030262091220958354

[11/25/2024 08:17:51 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count: 1
[11/25/2024 08:17:51 INFO 140585769518912] Timing: train: 2.39s, val: 0.15s, epoch: 2.54s
[11/25/2024 08:17:51 INFO 140585769518912] #progress_metric: host=algo-1, completed 10.666666666666666 % of epochs
#metrics {"StartTime": 1732522669.100145, "EndTime": 1732522671.641682, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 15, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 34016.0, "count": 1, "min": 34016, "max": 34016}, "Total Batches Seen": {"sum": 1136.0, "count": 1, "min": 1136, "max": 1136}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 32.0, "count": 1, "min": 32, "max": 32}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:17:51 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=836.4612656786825 records/second
[11/25/2024 08:17:51 INFO 140585769518912]
[11/25/2024 08:17:51 INFO 140585769518912] # Starting training for epoch 17
[2024-11-25 08:17:52.619] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 86, "duration": 1235, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:52 INFO 140341878044480] # Finished training epoch 29 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:52 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:52 INFO 140341878044480] Loss (name: value) total: 7.92971024689851
[11/25/2024 08:17:52 INFO 140341878044480] Loss (name: value) kld: 0.150716863517408
[11/25/2024 08:17:52 INFO 140341878044480] Loss (name: value) recons: 7.778993359318486
[11/25/2024 08:17:52 INFO 140341878044480] Loss (name: value) logppx: 7.92971024689851
[11/25/2024 08:17:52 INFO 140341878044480] #quality_metric: host=algo-2, epoch=29, train total_loss <loss>=7.92971024689851
[2024-11-25 08:17:54.017] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 50, "duration": 2375, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:54 INFO 140585769518912] # Finished training epoch 17 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:17:54 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:54 INFO 140585769518912] Loss (name: value) total: 8.158534613237695
[11/25/2024 08:17:54 INFO 140585769518912] Loss (name: value) kld: 0.1668855496975178
[11/25/2024 08:17:54 INFO 140585769518912] Loss (name: value) recons: 7.991649086822367
[11/25/2024 08:17:54 INFO 140585769518912] Loss (name: value) logppx: 8.158534613237695
[11/25/2024 08:17:54 INFO 140585769518912] #quality_metric: host=algo-1, epoch=17, train total_loss <loss>=8.158534613237695
[2024-11-25 08:17:54.138] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 50, "duration": 118, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:54 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:54 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:54 INFO 140585769518912] Loss (name: value) total: 8.57996360583183
[11/25/2024 08:17:54 INFO 140585769518912] Loss (name: value) kld: 0.1366627418077909
[11/25/2024 08:17:54 INFO 140585769518912] Loss (name: value) recons: 8.44330072647486
[11/25/2024 08:17:54 INFO 140585769518912] Loss (name: value) logppx: 8.57996360583183
[11/25/2024 08:17:54 INFO 140585769518912] #validation_score (17): 8.57996360583183
[11/25/2024 08:17:54 INFO 140585769518912] patience losses:[8.619900004069011, 8.61802970690605, 8.5879637498122, 8.581209896772336, 8.584236105894432] min patience loss:8.581209896772336 current loss:8.57996360583183 absolute loss difference:0.0012462909405055456
[11/25/2024 08:17:54 INFO 140585769518912] Timing: train: 2.38s, val: 0.12s, epoch: 2.50s
[11/25/2024 08:17:54 INFO 140585769518912] #progress_metric: host=algo-1, completed 11.333333333333334 % of epochs
#metrics {"StartTime": 1732522671.6419556, "EndTime": 1732522674.1424668, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 16, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 36142.0, "count": 1, "min": 36142, "max": 3614

2}, "Total Batches Seen": {"sum": 1207.0, "count": 1, "min": 1207, "max": 1207}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 34.0, "cou
nt": 1, "min": 34, "max": 34}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:17:54 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=85
0.1820578220915 records/second
[11/25/2024 08:17:54 INFO 140585769518912]
[11/25/2024 08:17:54 INFO 140585769518912] # Starting training for epoch 18
[2024-11-25 08:17:56.410] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 53, "duration": 2267, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:56 INFO 140585769518912] # Finished training epoch 18 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:17:56 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:56 INFO 140585769518912] Loss (name: value) total: 8.14282411387269
[11/25/2024 08:17:56 INFO 140585769518912] Loss (name: value) kld: 0.16826463809035752
[11/25/2024 08:17:56 INFO 140585769518912] Loss (name: value) recons: 7.9745594436573874
[11/25/2024 08:17:56 INFO 140585769518912] Loss (name: value) logppx: 8.14282411387269
[11/25/2024 08:17:56 INFO 140585769518912] #quality_metric: host=algo-1, epoch=18, train total_l
oss <loss>=8.14282411387269
[2024-11-25 08:17:52.787] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 86, "duration": 167, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:52 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:17:52 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:52 INFO 140341878044480] Loss (name: value) total: 8.60989016019381
[11/25/2024 08:17:52 INFO 140341878044480] Loss (name: value) kld: 0.1394132436850132
[11/25/2024 08:17:52 INFO 140341878044480] Loss (name: value) recons: 8.470476942795974
[11/25/2024 08:17:52 INFO 140341878044480] Loss (name: value) logppx: 8.60989016019381
[11/25/2024 08:17:52 INFO 140341878044480] #validation_score (29): 8.60989016019381
[11/25/2024 08:17:52 INFO 140341878044480] patience losses:[8.624796784229767, 8.60850986578525
7, 8.646962209848256, 8.60243397248097, 8.631751740284455] min patience loss:8.60243397248097 cu
rrent loss:8.60989016019381 absolute loss difference:0.00745618771284029
[11/25/2024 08:17:52 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count:
2
[11/25/2024 08:17:52 INFO 140341878044480] Timing: train: 1.24s, val: 0.17s, epoch: 1.40s
[11/25/2024 08:17:52 INFO 140341878044480] #progress_metric: host=algo-2, completed 19.333333333
333332 % of epochs
#metrics {"StartTime": 1732522671.3841927, "EndTime": 1732522672.7885513, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 28, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 30798.0, "count": 1, "min": 30798, "max": 3079
8}, "Total Batches Seen": {"sum": 1044.0, "count": 1, "min": 1044, "max": 1044}, "Max Records Se
en Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Bet
ween Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 58.0, "cou
nt": 1, "min": 58, "max": 58}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,
"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:17:52 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=75
6.1366072001485 records/second
[11/25/2024 08:17:52 INFO 140341878044480]
[11/25/2024 08:17:52 INFO 140341878044480] # Starting training for epoch 30
[2024-11-25 08:17:54.023] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 89, "duration": 1234, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:54 INFO 140341878044480] # Finished training epoch 30 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:17:54 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:54 INFO 140341878044480] Loss (name: value) total: 7.910006395975748
[11/25/2024 08:17:54 INFO 140341878044480] Loss (name: value) kld: 0.15825818644629586

[11/25/2024 08:17:54 INFO 140341878044480] Loss (name: value) recons: 7.7517481909857855
[11/25/2024 08:17:54 INFO 140341878044480] Loss (name: value) logppx: 7.910006395975748
[11/25/2024 08:17:54 INFO 140341878044480] #quality_metric: host=algo-2, epoch=30, train total_loss <loss>=7.910006395975748
[2024-11-25 08:17:54.146] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 89, "duration": 119, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:54 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:54 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:54 INFO 140341878044480] Loss (name: value) total: 8.581779166979667
[11/25/2024 08:17:54 INFO 140341878044480] Loss (name: value) kld: 0.1366627418077909
[11/25/2024 08:17:54 INFO 140341878044480] Loss (name: value) recons: 8.445116522373297
[11/25/2024 08:17:54 INFO 140341878044480] Loss (name: value) logppx: 8.581779166979667
[11/25/2024 08:17:54 INFO 140341878044480] #validation_score (30): 8.581779166979667
[11/25/2024 08:17:54 INFO 140341878044480] patience losses:[8.608509865785257, 8.646962209848256, 8.60243397248097, 8.631751740284455, 8.60989016019381] min patience loss:8.60243397248097 current loss:8.581779166979667 absolute loss difference:0.020654805501303386
[11/25/2024 08:17:54 INFO 140341878044480] Timing: train: 1.24s, val: 0.12s, epoch: 1.36s
[11/25/2024 08:17:54 INFO 140341878044480] #progress_metric: host=algo-2, completed 20.0 % of epochs
#metrics {"StartTime": 1732522672.788827, "EndTime": 1732522674.149703, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 29, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 31860.0, "count": 1, "min": 31860, "max": 31860}, "Total Batches Seen": {"sum": 1080.0, "count": 1, "min": 1080, "max": 1080}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 60.0, "count": 1, "min": 60, "max": 60}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:54 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=780.3147128890514 records/second
[11/25/2024 08:17:54 INFO 140341878044480]
[11/25/2024 08:17:54 INFO 140341878044480] # Starting training for epoch 31
[2024-11-25 08:17:55.426] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 92, "duration": 1275, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:55 INFO 140341878044480] # Finished training epoch 31 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:55 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:55 INFO 140341878044480] Loss (name: value) total: 7.904053433736165
[11/25/2024 08:17:55 INFO 140341878044480] Loss (name: value) kld: 0.15475937790340846
[11/25/2024 08:17:55 INFO 140341878044480] Loss (name: value) recons: 7.749294047885471
[11/25/2024 08:17:55 INFO 140341878044480] Loss (name: value) logppx: 7.904053433736165
[11/25/2024 08:17:55 INFO 140341878044480] #quality_metric: host=algo-2, epoch=31, train total_loss <loss>=7.904053433736165
[2024-11-25 08:17:55.599] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 92, "duration": 172, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:55 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:55 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:55 INFO 140341878044480] Loss (name: value) total: 8.600942171536959
[11/25/2024 08:17:55 INFO 140341878044480] Loss (name: value) kld: 0.14359684601808206
[11/25/2024 08:17:55 INFO 140341878044480] Loss (name: value) recons: 8.457345346304086
[11/25/2024 08:17:55 INFO 140341878044480] Loss (name: value) logppx: 8.600942171536959
[11/25/2024 08:17:55 INFO 140341878044480] #validation_score (31): 8.600942171536959
[11/25/2024 08:17:55 INFO 140341878044480] patience losses:[8.646962209848256, 8.60243397248097, 8.631751740284455, 8.60989016019381, 8.581779166979667] min patience loss:8.581779166979667 current loss:8.600942171536959 absolute loss difference:0.01916300455729214
[11/25/2024 08:17:55 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 1

[11/25/2024 08:17:55 INFO 140341878044480] Timing: train: 1.28s, val: 0.17s, epoch: 1.45s
[11/25/2024 08:17:55 INFO 140341878044480] #progress_metric: host=algo-2, completed 20.666666666666668 % of epochs
#metrics {"StartTime": 1732522674.149931, "EndTime": 1732522675.6005933, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 30, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 32922.0, "count": 1, "min": 32922, "max": 32922}, "Total Batches Seen": {"sum": 1116.0, "count": 1, "min": 1116, "max": 1116}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 62.0, "count": 1, "min": 62, "max": 62}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:55 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=732.0136839951587 records/second
[11/25/2024 08:17:55 INFO 140341878044480]
[11/25/2024 08:17:55 INFO 140341878044480] # Starting training for epoch 32
[2024-11-25 08:17:56.560] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 53, "duration": 148, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:56 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:56 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:56 INFO 140585769518912] Loss (name: value) total: 8.567583915514824
[11/25/2024 08:17:56 INFO 140585769518912] Loss (name: value) kld: 0.14360063137152257
[11/25/2024 08:17:56 INFO 140585769518912] Loss (name: value) recons: 8.423983177771936
[11/25/2024 08:17:56 INFO 140585769518912] Loss (name: value) logppx: 8.567583915514824
[11/25/2024 08:17:56 INFO 140585769518912] #validation_score (18): 8.567583915514824
[11/25/2024 08:17:56 INFO 140585769518912] patience losses:[8.61802970690605, 8.5879637498122, 8.581209896772336, 8.584236105894432, 8.57996360583183] min patience loss:8.57996360583183 current loss:8.567583915514824 absolute loss difference:0.012379690317006364
[11/25/2024 08:17:56 INFO 140585769518912] Timing: train: 2.27s, val: 0.15s, epoch: 2.42s
[11/25/2024 08:17:56 INFO 140585769518912] #progress_metric: host=algo-1, completed 12.0 % of epochs
#metrics {"StartTime": 1732522674.1427095, "EndTime": 1732522676.563673, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 17, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 38268.0, "count": 1, "min": 38268, "max": 38268}, "Total Batches Seen": {"sum": 1278.0, "count": 1, "min": 1278, "max": 1278}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:17:56 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=878.1141548657835 records/second
[11/25/2024 08:17:56 INFO 140585769518912]
[11/25/2024 08:17:56 INFO 140585769518912] # Starting training for epoch 19
[2024-11-25 08:17:56.801] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 95, "duration": 1200, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:56 INFO 140341878044480] # Finished training epoch 32 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:56 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:56 INFO 140341878044480] Loss (name: value) total: 7.89285686634205
[11/25/2024 08:17:56 INFO 140341878044480] Loss (name: value) kld: 0.1608103897836473
[11/25/2024 08:17:56 INFO 140341878044480] Loss (name: value) recons: 7.732046402825249
[11/25/2024 08:17:56 INFO 140341878044480] Loss (name: value) logppx: 7.89285686634205
[11/25/2024 08:17:56 INFO 140341878044480] #quality_metric: host=algo-2, epoch=32, train total_loss <loss>=7.89285686634205
[2024-11-25 08:17:56.971] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 95, "duration": 169, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:56 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac

h of size 30.
[11/25/2024 08:17:56 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:56 INFO 140341878044480] Loss (name: value) total: 8.56432131253756
[11/25/2024 08:17:56 INFO 140341878044480] Loss (name: value) kld: 0.13683568025246645
[11/25/2024 08:17:56 INFO 140341878044480] Loss (name: value) recons: 8.427485617613181
[11/25/2024 08:17:56 INFO 140341878044480] Loss (name: value) logppx: 8.56432131253756
[11/25/2024 08:17:56 INFO 140341878044480] #validation_score (32): 8.56432131253756
[11/25/2024 08:17:56 INFO 140341878044480] patience losses:[8.60243397248097, 8.631751740284455, 8.60989016019381, 8.581779166979667, 8.600942171536959] min patience loss:8.581779166979667 current loss:8.56432131253756 absolute loss difference:0.01745785444210668
[11/25/2024 08:17:56 INFO 140341878044480] Timing: train: 1.20s, val: 0.17s, epoch: 1.37s
[11/25/2024 08:17:56 INFO 140341878044480] #progress_metric: host=algo-2, completed 21.333333333333332 % of epochs
#metrics {"StartTime": 1732522675.600839, "EndTime": 1732522676.975329, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 31, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 33984.0, "count": 1, "min": 33984, "max": 33984}, "Total Batches Seen": {"sum": 1152.0, "count": 1, "min": 1152, "max": 1152}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 64.0, "count": 1, "min": 64, "max": 64}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:56 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=772.5791806137098 records/second
[11/25/2024 08:17:56 INFO 140341878044480]
[11/25/2024 08:17:56 INFO 140341878044480] # Starting training for epoch 33
[2024-11-25 08:17:58.315] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 98, "duration": 1339, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:58 INFO 140341878044480] # Finished training epoch 33 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:58 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:58 INFO 140341878044480] Loss (name: value) total: 7.895701373064959
[11/25/2024 08:17:58 INFO 140341878044480] Loss (name: value) kld: 0.16307091072753624
[11/25/2024 08:17:58 INFO 140341878044480] Loss (name: value) recons: 7.7326304117838545
[11/25/2024 08:17:58 INFO 140341878044480] Loss (name: value) logppx: 7.895701373064959
[11/25/2024 08:17:58 INFO 140341878044480] #quality_metric: host=algo-2, epoch=33, train total_loss <loss>=7.895701373064959
[2024-11-25 08:17:58.487] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 98, "duration": 171, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:58 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:58 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:58 INFO 140341878044480] Loss (name: value) total: 8.621568024464143
[11/25/2024 08:17:58 INFO 140341878044480] Loss (name: value) kld: 0.16127815735645784
[11/25/2024 08:17:58 INFO 140341878044480] Loss (name: value) recons: 8.460290018717448
[11/25/2024 08:17:58 INFO 140341878044480] Loss (name: value) logppx: 8.621568024464143
[11/25/2024 08:17:58 INFO 140341878044480] #validation_score (33): 8.621568024464143
[11/25/2024 08:17:58 INFO 140341878044480] patience losses:[8.631751740284455, 8.60989016019381, 8.581779166979667, 8.600942171536959, 8.56432131253756] min patience loss:8.56432131253756 current loss:8.621568024464143 absolute loss difference:0.057246711926582705
[11/25/2024 08:17:58 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 1
[11/25/2024 08:17:58 INFO 140341878044480] Timing: train: 1.34s, val: 0.17s, epoch: 1.51s
[11/25/2024 08:17:58 INFO 140341878044480] #progress_metric: host=algo-2, completed 22.0 % of epochs
#metrics {"StartTime": 1732522676.9755788, "EndTime": 1732522678.4886642, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 32, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 35046.0, "count": 1, "min": 35046, "max": 35046}, "Total Batches Seen": {"sum": 1188.0, "count": 1, "min": 1188, "max": 1188}, "Max Records Se

en Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 66.0, "count": 1, "min": 66, "max": 66}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:58 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=701.8146400489687 records/second
[11/25/2024 08:17:58 INFO 140341878044480]
[11/25/2024 08:17:58 INFO 140341878044480] # Starting training for epoch 34
[2024-11-25 08:17:58.937] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 56, "duration": 2372, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:17:58 INFO 140585769518912] # Finished training epoch 19 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:17:58 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:17:58 INFO 140585769518912] Loss (name: value) total: 8.12557577213771
[11/25/2024 08:17:58 INFO 140585769518912] Loss (name: value) kld: 0.17206082461585462
[11/25/2024 08:17:58 INFO 140585769518912] Loss (name: value) recons: 7.953515001753686
[11/25/2024 08:17:58 INFO 140585769518912] Loss (name: value) logppx: 8.12557577213771
[11/25/2024 08:17:58 INFO 140585769518912] #quality_metric: host=algo-1, epoch=19, train total_loss <loss>=8.12557577213771
[2024-11-25 08:17:59.105] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 56, "duration": 166, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:59 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:59 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:17:59 INFO 140585769518912] Loss (name: value) total: 8.575931333884215
[11/25/2024 08:17:59 INFO 140585769518912] Loss (name: value) kld: 0.16853821338751376
[11/25/2024 08:17:59 INFO 140585769518912] Loss (name: value) recons: 8.407393157176482
[11/25/2024 08:17:59 INFO 140585769518912] Loss (name: value) logppx: 8.575931333884215
[11/25/2024 08:17:59 INFO 140585769518912] #validation_score (19): 8.575931333884215
[11/25/2024 08:17:59 INFO 140585769518912] patience losses:[8.5879637498122, 8.581209896772336, 8.584236105894432, 8.57996360583183, 8.567583915514824] min patience loss:8.567583915514824 current loss:8.575931333884215 absolute loss difference:0.008347418369391235
[11/25/2024 08:17:59 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count: 1
[11/25/2024 08:17:59 INFO 140585769518912] Timing: train: 2.37s, val: 0.17s, epoch: 2.54s
[11/25/2024 08:17:59 INFO 140585769518912] #progress_metric: host=algo-1, completed 12.666666666666666 % of epochs
#metrics {"StartTime": 1732522676.563956, "EndTime": 1732522679.1063976, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 18, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 40394.0, "count": 1, "min": 40394, "max": 40394}, "Total Batches Seen": {"sum": 1349.0, "count": 1, "min": 1349, "max": 1349}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 38.0, "count": 1, "min": 38, "max": 38}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:17:59 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=836.163758908589 records/second
[11/25/2024 08:17:59 INFO 140585769518912]
[11/25/2024 08:17:59 INFO 140585769518912] # Starting training for epoch 20
[2024-11-25 08:17:59.785] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 101, "duration": 1296, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:17:59 INFO 140341878044480] # Finished training epoch 34 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:17:59 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:17:59 INFO 140341878044480] Loss (name: value) total: 7.880503499066388
[11/25/2024 08:17:59 INFO 140341878044480] Loss (name: value) kld: 0.16497457557254366
[11/25/2024 08:17:59 INFO 140341878044480] Loss (name: value) recons: 7.715528954399956

[11/25/2024 08:17:59 INFO 140341878044480] Loss (name: value) logppx: 7.880503499066388
[11/25/2024 08:17:59 INFO 140341878044480] #quality_metric: host=algo-2, epoch=34, train total_loss <loss>=7.880503499066388
[2024-11-25 08:17:59.949] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 101, "duration": 162, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:17:59 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:17:59 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:17:59 INFO 140341878044480] Loss (name: value) total: 8.579971352601662
[11/25/2024 08:17:59 INFO 140341878044480] Loss (name: value) kld: 0.1473381831095769
[11/25/2024 08:17:59 INFO 140341878044480] Loss (name: value) recons: 8.432633072290665
[11/25/2024 08:17:59 INFO 140341878044480] Loss (name: value) logppx: 8.579971352601662
[11/25/2024 08:17:59 INFO 140341878044480] #validation_score (34): 8.579971352601662
[11/25/2024 08:17:59 INFO 140341878044480] patience losses:[8.60989016019381, 8.581779166979667, 8.600942171536959, 8.56432131253756, 8.621568024464143] min patience loss:8.56432131253756 current loss:8.579971352601662 absolute loss difference:0.0156500400641022
[11/25/2024 08:17:59 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 2
[11/25/2024 08:17:59 INFO 140341878044480] Timing: train: 1.30s, val: 0.16s, epoch: 1.46s
[11/25/2024 08:17:59 INFO 140341878044480] #progress_metric: host=algo-2, completed 22.666666666666668 % of epochs
#metrics {"StartTime": 1732522678.4889207, "EndTime": 1732522679.9521892, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 33, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 36108.0, "count": 1, "min": 36108, "max": 36108}, "Total Batches Seen": {"sum": 1224.0, "count": 1, "min": 1224, "max": 1224}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 68.0, "count": 1, "min": 68, "max": 68}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:17:59 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=725.7131065291928 records/second
[11/25/2024 08:17:59 INFO 140341878044480]
[11/25/2024 08:17:59 INFO 140341878044480] # Starting training for epoch 35
[2024-11-25 08:18:01.303] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 104, "duration": 1350, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:01 INFO 140341878044480] # Finished training epoch 35 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:18:01 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:01 INFO 140341878044480] Loss (name: value) total: 7.864503337718823
[11/25/2024 08:18:01 INFO 140341878044480] Loss (name: value) kld: 0.1670685397254096
[11/25/2024 08:18:01 INFO 140341878044480] Loss (name: value) recons: 7.697434870402018
[11/25/2024 08:18:01 INFO 140341878044480] Loss (name: value) logppx: 7.864503337718823
[11/25/2024 08:18:01 INFO 140341878044480] #quality_metric: host=algo-2, epoch=35, train total_loss <loss>=7.864503337718823
[2024-11-25 08:18:01.481] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 104, "duration": 177, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:01 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:01 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:18:01 INFO 140341878044480] Loss (name: value) total: 8.6252200395633
[11/25/2024 08:18:01 INFO 140341878044480] Loss (name: value) kld: 0.14762045114468306
[11/25/2024 08:18:01 INFO 140341878044480] Loss (name: value) recons: 8.477599471654647
[11/25/2024 08:18:01 INFO 140341878044480] Loss (name: value) logppx: 8.6252200395633
[11/25/2024 08:18:01 INFO 140341878044480] #validation_score (35): 8.6252200395633
[11/25/2024 08:18:01 INFO 140341878044480] patience losses:[8.581779166979667, 8.600942171536959, 8.56432131253756, 8.621568024464143, 8.579971352601662] min patience loss:8.56432131253756 current loss:8.6252200395633 absolute loss difference:0.06089872702574084
[11/25/2024 08:18:01 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count:

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3
[11/25/2024 08:18:01 INFO 140341878044480] Timing: train: 1.35s, val: 0.18s, epoch: 1.53s
[11/25/2024 08:18:01 INFO 140341878044480] #progress_metric: host=algo-2, completed 23.333333333
333332 % of epochs
#metrics {"StartTime": 1732522679.9524379, "EndTime": 1732522681.4849296, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 34, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 37170.0, "count": 1, "min": 37170, "max": 3717
0}, "Total Batches Seen": {"sum": 1260.0, "count": 1, "min": 1260, "max": 1260}, "Max Records Se
en Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Bet
ween Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 70.0, "cou
nt": 1, "min": 70, "max": 70}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,
"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:18:01 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=69
2.793562224417 records/second
[11/25/2024 08:18:01 INFO 140341878044480]
[11/25/2024 08:18:01 INFO 140341878044480] # Starting training for epoch 36
[2024-11-25 08:18:01.608] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 59, "duration": 2501, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:01 INFO 140585769518912] # Finished training epoch 20 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:01 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:01 INFO 140585769518912] Loss (name: value) total: 8.123871422709433
[11/25/2024 08:18:01 INFO 140585769518912] Loss (name: value) kld: 0.17538973669490904
[11/25/2024 08:18:01 INFO 140585769518912] Loss (name: value) recons: 7.948481678850774
[11/25/2024 08:18:01 INFO 140585769518912] Loss (name: value) logppx: 8.123871422709433
[11/25/2024 08:18:01 INFO 140585769518912] #quality_metric: host=algo-1, epoch=20, train total_l
oss <loss>=8.123871422709433
[2024-11-25 08:18:01.730] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 59, "duration": 120, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:01 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:01 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:01 INFO 140585769518912] Loss (name: value) total: 8.570055604592348
[11/25/2024 08:18:01 INFO 140585769518912] Loss (name: value) kld: 0.15087951757969
[11/25/2024 08:18:01 INFO 140585769518912] Loss (name: value) recons: 8.419175994090544
[11/25/2024 08:18:01 INFO 140585769518912] Loss (name: value) logppx: 8.570055604592348
[11/25/2024 08:18:01 INFO 140585769518912] #validation_score (20): 8.570055604592348
[11/25/2024 08:18:01 INFO 140585769518912] patience losses:[8.581209896772336, 8.58423610589443
2, 8.57996360583183, 8.567583915514824, 8.575931333884215] min patience loss:8.567583915514824 c
urrent loss:8.570055604592348 absolute loss difference:0.00247168907752382
[11/25/2024 08:18:01 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count:
2
[11/25/2024 08:18:01 INFO 140585769518912] Timing: train: 2.50s, val: 0.12s, epoch: 2.63s
[11/25/2024 08:18:01 INFO 140585769518912] #progress_metric: host=algo-1, completed 13.333333333
333334 % of epochs
#metrics {"StartTime": 1732522679.106652, "EndTime": 1732522681.7334607, "Dimensions": {"Algorit
hm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 19, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 42520.0, "count": 1, "min": 42520, "max": 4252
0}, "Total Batches Seen": {"sum": 1420.0, "count": 1, "min": 1420, "max": 1420}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 40.0, "cou
nt": 1, "min": 40, "max": 40}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:18:01 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=80
9.306715516822 records/second
[11/25/2024 08:18:01 INFO 140585769518912]
[11/25/2024 08:18:01 INFO 140585769518912] # Starting training for epoch 21
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[2024-11-25 08:18:04.845] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 62, "duration": 3110, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:04 INFO 140585769518912] # Finished training epoch 21 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:04 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:04 INFO 140585769518912] Loss (name: value) total: 8.121212080834617
[11/25/2024 08:18:04 INFO 140585769518912] Loss (name: value) kld: 0.17529158043749454
[11/25/2024 08:18:04 INFO 140585769518912] Loss (name: value) recons: 7.945920501852259
[11/25/2024 08:18:04 INFO 140585769518912] Loss (name: value) logppx: 8.121212080834617
[11/25/2024 08:18:04 INFO 140585769518912] #quality_metric: host=algo-1, epoch=21, train total_loss <loss>=8.121212080834617
[2024-11-25 08:18:05.006] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 62, "duration": 160, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:05 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:05 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:05 INFO 140585769518912] Loss (name: value) total: 8.564024274777143
[11/25/2024 08:18:05 INFO 140585769518912] Loss (name: value) kld: 0.14830244137690618
[11/25/2024 08:18:05 INFO 140585769518912] Loss (name: value) recons: 8.415721834622897
[11/25/2024 08:18:05 INFO 140585769518912] Loss (name: value) logppx: 8.564024274777143
[11/25/2024 08:18:05 INFO 140585769518912] #validation_score (21): 8.564024274777143
[11/25/2024 08:18:05 INFO 140585769518912] patience losses:[8.584236105894432, 8.57996360583183, 8.567583915514824, 8.575931333884215, 8.570055604592348] min patience loss:8.567583915514824 current loss:8.564024274777143 absolute loss difference:0.0035596407376807804
[11/25/2024 08:18:05 INFO 140585769518912] Timing: train: 3.11s, val: 0.16s, epoch: 3.28s
[11/25/2024 08:18:05 INFO 140585769518912] #progress_metric: host=algo-1, completed 14.0 % of epochs
#metrics {"StartTime": 1732522681.7338822, "EndTime": 1732522685.010662, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 20, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 44646.0, "count": 1, "min": 44646, "max": 44646}, "Total Batches Seen": {"sum": 1491.0, "count": 1, "min": 1491, "max": 1491}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 42.0, "count": 1, "min": 42, "max": 42}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:05 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=648.7823906075712 records/second
[11/25/2024 08:18:05 INFO 140585769518912]
[11/25/2024 08:18:05 INFO 140585769518912] # Starting training for epoch 22
[2024-11-25 08:18:03.259] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 107, "duration": 1773, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:03 INFO 140341878044480] # Finished training epoch 36 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:18:03 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:03 INFO 140341878044480] Loss (name: value) total: 7.857088993213795
[11/25/2024 08:18:03 INFO 140341878044480] Loss (name: value) kld: 0.16534576680925156
[11/25/2024 08:18:03 INFO 140341878044480] Loss (name: value) recons: 7.691743200796622
[11/25/2024 08:18:03 INFO 140341878044480] Loss (name: value) logppx: 7.857088993213795
[11/25/2024 08:18:03 INFO 140341878044480] #quality_metric: host=algo-2, epoch=36, train total_loss <loss>=7.857088993213795
[2024-11-25 08:18:03.431] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 107, "duration": 169, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:03 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:03 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:18:03 INFO 140341878044480] Loss (name: value) total: 8.592526205992087
[11/25/2024 08:18:03 INFO 140341878044480] Loss (name: value) kld: 0.16204749254079964
[11/25/2024 08:18:03 INFO 140341878044480] Loss (name: value) recons: 8.430478922526042

[11/25/2024 08:18:03 INFO 140341878044480] Loss (name: value) logppx: 8.592526205992087
[11/25/2024 08:18:03 INFO 140341878044480] #validation_score (36): 8.592526205992087
[11/25/2024 08:18:03 INFO 140341878044480] patience losses:[8.600942171536959, 8.56432131253756, 8.621568024464143, 8.579971352601662, 8.6252200395633] min patience loss:8.56432131253756 current loss:8.592526205992087 absolute loss difference:0.028204893454526925
[11/25/2024 08:18:03 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 4
[11/25/2024 08:18:03 INFO 140341878044480] Timing: train: 1.78s, val: 0.17s, epoch: 1.95s
[11/25/2024 08:18:03 INFO 140341878044480] #progress_metric: host=algo-2, completed 24.0 % of epochs
#metrics {"StartTime": 1732522681.485669, "EndTime": 1732522683.4318824, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 35, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 38232.0, "count": 1, "min": 38232, "max": 38232}, "Total Batches Seen": {"sum": 1296.0, "count": 1, "min": 1296, "max": 1296}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 72.0, "count": 1, "min": 72, "max": 72}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:18:03 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=545.6386155296314 records/second
[11/25/2024 08:18:03 INFO 140341878044480]
[11/25/2024 08:18:03 INFO 140341878044480] # Starting training for epoch 37
[2024-11-25 08:18:04.733] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 110, "duration": 1301, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:04 INFO 140341878044480] # Finished training epoch 37 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:18:04 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:04 INFO 140341878044480] Loss (name: value) total: 7.8312705428512
[11/25/2024 08:18:04 INFO 140341878044480] Loss (name: value) kld: 0.16822710434595745
[11/25/2024 08:18:04 INFO 140341878044480] Loss (name: value) recons: 7.663043460139522
[11/25/2024 08:18:04 INFO 140341878044480] Loss (name: value) logppx: 7.8312705428512
[11/25/2024 08:18:04 INFO 140341878044480] #quality_metric: host=algo-2, epoch=37, train total_loss <loss>=7.8312705428512
[2024-11-25 08:18:04.904] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 110, "duration": 168, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:04 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:04 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:18:04 INFO 140341878044480] Loss (name: value) total: 8.608894778520632
[11/25/2024 08:18:04 INFO 140341878044480] Loss (name: value) kld: 0.14936548135219477
[11/25/2024 08:18:04 INFO 140341878044480] Loss (name: value) recons: 8.459529270269933
[11/25/2024 08:18:04 INFO 140341878044480] Loss (name: value) logppx: 8.608894778520632
[11/25/2024 08:18:04 INFO 140341878044480] #validation_score (37): 8.608894778520632
[11/25/2024 08:18:04 INFO 140341878044480] patience losses:[8.56432131253756, 8.621568024464143, 8.579971352601662, 8.6252200395633, 8.592526205992087] min patience loss:8.56432131253756 current loss:8.608894778520632 absolute loss difference:0.044573465983072325
[11/25/2024 08:18:04 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 5
[11/25/2024 08:18:04 INFO 140341878044480] Timing: train: 1.30s, val: 0.17s, epoch: 1.47s
[11/25/2024 08:18:04 INFO 140341878044480] #progress_metric: host=algo-2, completed 24.666666666666668 % of epochs
#metrics {"StartTime": 1732522683.432074, "EndTime": 1732522684.9054046, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 36, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 39294.0, "count": 1, "min": 39294, "max": 39294}, "Total Batches Seen": {"sum": 1332.0, "count": 1, "min": 1332, "max": 1332}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 74.0, "count": 1, "min": 74, "max": 74}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,

"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:18:04 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=72
0.7639638636701 records/second
[11/25/2024 08:18:04 INFO 140341878044480]
[11/25/2024 08:18:04 INFO 140341878044480] # Starting training for epoch 38
[2024-11-25 08:18:06.213] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 113, "duration": 1307, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:06 INFO 140341878044480] # Finished training epoch 38 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:18:06 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:06 INFO 140341878044480] Loss (name: value) total: 7.831514528062608
[11/25/2024 08:18:06 INFO 140341878044480] Loss (name: value) kld: 0.16244413918919035
[11/25/2024 08:18:06 INFO 140341878044480] Loss (name: value) recons: 7.669070385120533
[11/25/2024 08:18:06 INFO 140341878044480] Loss (name: value) logppx: 7.831514528062608
[11/25/2024 08:18:06 INFO 140341878044480] #quality_metric: host=algo-2, epoch=38, train total_l
oss <loss>=7.831514528062608
[2024-11-25 08:18:06.359] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 113, "duration": 145, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:06 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:06 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:18:06 INFO 140341878044480] Loss (name: value) total: 8.571189567370292
[11/25/2024 08:18:06 INFO 140341878044480] Loss (name: value) kld: 0.13890104844019963
[11/25/2024 08:18:06 INFO 140341878044480] Loss (name: value) recons: 8.432288497533554
[11/25/2024 08:18:06 INFO 140341878044480] Loss (name: value) logppx: 8.571189567370292
[11/25/2024 08:18:06 INFO 140341878044480] #validation_score (38): 8.571189567370292
[11/25/2024 08:18:06 INFO 140341878044480] patience losses:[8.621568024464143, 8.57997135260166
2, 8.6252200395633, 8.592526205992087, 8.608894778520632] min patience loss:8.579971352601662 cu
rrent loss:8.571189567370292 absolute loss difference:0.00878178523137052
[11/25/2024 08:18:06 INFO 140341878044480] Timing: train: 1.31s, val: 0.15s, epoch: 1.46s
[11/25/2024 08:18:06 INFO 140341878044480] #progress_metric: host=algo-2, completed 25.333333333
333332 % of epochs
#metrics {"StartTime": 1732522684.9055886, "EndTime": 1732522686.3613029, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 37, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 40356.0, "count": 1, "min": 40356, "max": 4035
6}, "Total Batches Seen": {"sum": 1368.0, "count": 1, "min": 1368, "max": 1368}, "Max Records Se
en Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Bet
ween Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 76.0, "cou
nt": 1, "min": 76, "max": 76}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,
"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:18:06 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=72
9.467229210716 records/second
[11/25/2024 08:18:06 INFO 140341878044480]
[11/25/2024 08:18:06 INFO 140341878044480] # Starting training for epoch 39
[2024-11-25 08:18:07.341] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 65, "duration": 2330, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:07 INFO 140585769518912] # Finished training epoch 22 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:07 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:07 INFO 140585769518912] Loss (name: value) total: 8.105666089841458
[11/25/2024 08:18:07 INFO 140585769518912] Loss (name: value) kld: 0.17528362979351636
[11/25/2024 08:18:07 INFO 140585769518912] Loss (name: value) recons: 7.930382484113666
[11/25/2024 08:18:07 INFO 140585769518912] Loss (name: value) logppx: 8.105666089841458
[11/25/2024 08:18:07 INFO 140585769518912] #quality_metric: host=algo-1, epoch=22, train total_l
oss <loss>=8.105666089841458
[2024-11-25 08:18:07.470] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 65, "duration": 126, "num_examples": 14, "num_bytes": 125284}

[11/25/2024 08:18:07 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:07 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:07 INFO 140585769518912] Loss (name: value) total: 8.554291319235777
[11/25/2024 08:18:07 INFO 140585769518912] Loss (name: value) kld: 0.15395147739312587
[11/25/2024 08:18:07 INFO 140585769518912] Loss (name: value) recons: 8.400339840619992
[11/25/2024 08:18:07 INFO 140585769518912] Loss (name: value) logppx: 8.554291319235777
[11/25/2024 08:18:07 INFO 140585769518912] #validation_score (22): 8.554291319235777
[11/25/2024 08:18:07 INFO 140585769518912] patience losses:[8.57996360583183, 8.567583915514824,
8.575931333884215, 8.570055604592348, 8.564024274777143] min patience loss:8.564024274777143 cur
rent loss:8.554291319235777 absolute loss difference:0.00973295554136655
[11/25/2024 08:18:07 INFO 140585769518912] Timing: train: 2.33s, val: 0.13s, epoch: 2.46s
[11/25/2024 08:18:07 INFO 140585769518912] #progress_metric: host=algo-1, completed 14.666666666
666666 % of epochs
#metrics {"StartTime": 1732522685.0109136, "EndTime": 1732522687.473873, "Dimensions": {"Algorit
hm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 21, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 46772.0, "count": 1, "min": 46772, "max": 4677
2}, "Total Batches Seen": {"sum": 1562.0, "count": 1, "min": 1562, "max": 1562}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 44.0, "cou
nt": 1, "min": 44, "max": 44}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:18:07 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=86
3.1414647140656 records/second
[11/25/2024 08:18:07 INFO 140585769518912]
[11/25/2024 08:18:07 INFO 140585769518912] # Starting training for epoch 23
[2024-11-25 08:18:07.576] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 116, "duration": 1214, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:07 INFO 140341878044480] # Finished training epoch 39 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:18:07 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:07 INFO 140341878044480] Loss (name: value) total: 7.820807894953975
[11/25/2024 08:18:07 INFO 140341878044480] Loss (name: value) kld: 0.1675431646682598
[11/25/2024 08:18:07 INFO 140341878044480] Loss (name: value) recons: 7.653264794526277
[11/25/2024 08:18:07 INFO 140341878044480] Loss (name: value) logppx: 7.820807894953975
[11/25/2024 08:18:07 INFO 140341878044480] #quality_metric: host=algo-2, epoch=39, train total_l
oss <loss>=7.820807894953975
[2024-11-25 08:18:07.751] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 116, "duration": 173, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:07 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:07 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:18:07 INFO 140341878044480] Loss (name: value) total: 8.559135358761518
[11/25/2024 08:18:07 INFO 140341878044480] Loss (name: value) kld: 0.150829754731594
[11/25/2024 08:18:07 INFO 140341878044480] Loss (name: value) recons: 8.40830571101262
[11/25/2024 08:18:07 INFO 140341878044480] Loss (name: value) logppx: 8.559135358761518
[11/25/2024 08:18:07 INFO 140341878044480] #validation_score (39): 8.559135358761518
[11/25/2024 08:18:07 INFO 140341878044480] patience losses:[8.579971352601662, 8.6252200395633,
8.592526205992087, 8.608894778520632, 8.571189567370292] min patience loss:8.571189567370292 cur
rent loss:8.559135358761518 absolute loss difference:0.01205420860877382
[11/25/2024 08:18:07 INFO 140341878044480] Timing: train: 1.22s, val: 0.18s, epoch: 1.39s
[11/25/2024 08:18:07 INFO 140341878044480] #progress_metric: host=algo-2, completed 26.0 % of ep
ochs
#metrics {"StartTime": 1732522686.361666, "EndTime": 1732522687.756031, "Dimensions": {"Algorith
m": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 38, "Meta": "training_data_it
er"}, "Metrics": {"Total Records Seen": {"sum": 41418.0, "count": 1, "min": 41418, "max": 4141
8}, "Total Batches Seen": {"sum": 1404.0, "count": 1, "min": 1404, "max": 1404}, "Max Records Se
en Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Bet

ween Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 78.0, "count": 1, "min": 78, "max": 78}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:18:07 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=761.5605406619754 records/second
[11/25/2024 08:18:07 INFO 140341878044480]
[11/25/2024 08:18:07 INFO 140341878044480] # Starting training for epoch 40
[2024-11-25 08:18:08.999] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 119, "duration": 1243, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:08 INFO 140341878044480] # Finished training epoch 40 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:18:09 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:09 INFO 140341878044480] Loss (name: value) total: 7.823871118051034
[11/25/2024 08:18:09 INFO 140341878044480] Loss (name: value) kld: 0.16670750401638174
[11/25/2024 08:18:09 INFO 140341878044480] Loss (name: value) recons: 7.657163612930863
[11/25/2024 08:18:09 INFO 140341878044480] Loss (name: value) logppx: 7.823871118051034
[11/25/2024 08:18:09 INFO 140341878044480] #quality_metric: host=algo-2, epoch=40, train total_loss <loss>=7.823871118051034
[2024-11-25 08:18:09.149] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 119, "duration": 148, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:09 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:09 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:18:09 INFO 140341878044480] Loss (name: value) total: 8.577278684958433
[11/25/2024 08:18:09 INFO 140341878044480] Loss (name: value) kld: 0.1516038430042756
[11/25/2024 08:18:09 INFO 140341878044480] Loss (name: value) recons: 8.425674751477365
[11/25/2024 08:18:09 INFO 140341878044480] Loss (name: value) logppx: 8.577278684958433
[11/25/2024 08:18:09 INFO 140341878044480] #validation_score (40): 8.577278684958433
[11/25/2024 08:18:09 INFO 140341878044480] patience losses:[8.6252200395633, 8.592526205992087, 8.608894778520632, 8.571189567370292, 8.559135358761518] min patience loss:8.559135358761518 current loss:8.577278684958433 absolute loss difference:0.018143326196915055
[11/25/2024 08:18:09 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 1
[11/25/2024 08:18:09 INFO 140341878044480] Timing: train: 1.24s, val: 0.15s, epoch: 1.40s
[11/25/2024 08:18:09 INFO 140341878044480] #progress_metric: host=algo-2, completed 26.666666666666668 % of epochs
#metrics {"StartTime": 1732522687.756267, "EndTime": 1732522689.1515086, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 39, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 42480.0, "count": 1, "min": 42480, "max": 42480}, "Total Batches Seen": {"sum": 1440.0, "count": 1, "min": 1440, "max": 1440}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 80.0, "count": 1, "min": 80, "max": 80}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:18:09 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=761.0849421106706 records/second
[11/25/2024 08:18:09 INFO 140341878044480]
[11/25/2024 08:18:09 INFO 140341878044480] # Starting training for epoch 41
[2024-11-25 08:18:09.848] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 68, "duration": 2374, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:09 INFO 140585769518912] # Finished training epoch 23 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:09 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:09 INFO 140585769518912] Loss (name: value) total: 8.090220441504822
[11/25/2024 08:18:09 INFO 140585769518912] Loss (name: value) kld: 0.17901590609214676
[11/25/2024 08:18:09 INFO 140585769518912] Loss (name: value) recons: 7.911204543136095
[11/25/2024 08:18:09 INFO 140585769518912] Loss (name: value) logppx: 8.090220441504822

[11/25/2024 08:18:09 INFO 140585769518912] #quality_metric: host=algo-1, epoch=23, train total_loss <loss>=8.090220441504822
[2024-11-25 08:18:09.986] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 68, "duration": 137, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:09 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:09 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:09 INFO 140585769518912] Loss (name: value) total: 8.54251216008113
[11/25/2024 08:18:09 INFO 140585769518912] Loss (name: value) kld: 0.14545719990363487
[11/25/2024 08:18:09 INFO 140585769518912] Loss (name: value) recons: 8.397054936335637
[11/25/2024 08:18:09 INFO 140585769518912] Loss (name: value) logppx: 8.54251216008113
[11/25/2024 08:18:09 INFO 140585769518912] #validation_score (23): 8.54251216008113
[11/25/2024 08:18:09 INFO 140585769518912] patience losses:[8.567583915514824, 8.57593133388421 5, 8.570055604592348, 8.564024274777143, 8.554291319235777] min patience loss:8.554291319235777 current loss:8.54251216008113 absolute loss difference:0.011779159154647445
[11/25/2024 08:18:09 INFO 140585769518912] Timing: train: 2.38s, val: 0.14s, epoch: 2.52s
[11/25/2024 08:18:09 INFO 140585769518912] #progress_metric: host=algo-1, completed 15.333333333 333334 % of epochs
#metrics {"StartTime": 1732522687.4741354, "EndTime": 1732522689.991666, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 22, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 48898.0, "count": 1, "min": 48898, "max": 4889 8}, "Total Batches Seen": {"sum": 1633.0, "count": 1, "min": 1633, "max": 1633}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 46.0, "count": 1, "min": 46, "max": 46}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:09 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=844.3589829199185 records/second
[11/25/2024 08:18:09 INFO 140585769518912]
[11/25/2024 08:18:09 INFO 140585769518912] # Starting training for epoch 24
[2024-11-25 08:18:10.423] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 122, "duration": 1271, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:10 INFO 140341878044480] # Finished training epoch 41 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:18:10 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:10 INFO 140341878044480] Loss (name: value) total: 7.809362072414822
[11/25/2024 08:18:10 INFO 140341878044480] Loss (name: value) kld: 0.16781835909242984
[11/25/2024 08:18:10 INFO 140341878044480] Loss (name: value) recons: 7.641543755707917
[11/25/2024 08:18:10 INFO 140341878044480] Loss (name: value) logppx: 7.809362072414822
[11/25/2024 08:18:10 INFO 140341878044480] #quality_metric: host=algo-2, epoch=41, train total_loss <loss>=7.809362072414822
[2024-11-25 08:18:10.583] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 122, "duration": 158, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:10 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:10 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:18:10 INFO 140341878044480] Loss (name: value) total: 8.539548511994191
[11/25/2024 08:18:10 INFO 140341878044480] Loss (name: value) kld: 0.14884652418968006
[11/25/2024 08:18:10 INFO 140341878044480] Loss (name: value) recons: 8.390702037322216
[11/25/2024 08:18:10 INFO 140341878044480] Loss (name: value) logppx: 8.539548511994191
[11/25/2024 08:18:10 INFO 140341878044480] #validation_score (41): 8.539548511994191
[11/25/2024 08:18:10 INFO 140341878044480] patience losses:[8.592526205992087, 8.60889477852063 2, 8.571189567370292, 8.559135358761518, 8.577278684958433] min patience loss:8.559135358761518 current loss:8.539548511994191 absolute loss difference:0.019586846767326804
[11/25/2024 08:18:10 INFO 140341878044480] Timing: train: 1.27s, val: 0.16s, epoch: 1.43s
[11/25/2024 08:18:10 INFO 140341878044480] #progress_metric: host=algo-2, completed 27.333333333 333332 % of epochs
#metrics {"StartTime": 1732522689.1518364, "EndTime": 1732522690.5862255, "Dimensions": {"Algori

thm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 40, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 43542.0, "count": 1, "min": 43542, "max": 43542}, "Total Batches Seen": {"sum": 1476.0, "count": 1, "min": 1476, "max": 1476}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 82.0, "count": 1, "min": 82, "max": 82}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:18:10 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=740.3203915444586 records/second
[11/25/2024 08:18:10 INFO 140341878044480]
[11/25/2024 08:18:10 INFO 140341878044480] # Starting training for epoch 42
[2024-11-25 08:18:12.353] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 71, "duration": 2360, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:12 INFO 140585769518912] # Finished training epoch 24 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:12 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:12 INFO 140585769518912] Loss (name: value) total: 8.07851600467879
[11/25/2024 08:18:12 INFO 140585769518912] Loss (name: value) kld: 0.17755263702410487
[11/25/2024 08:18:12 INFO 140585769518912] Loss (name: value) recons: 7.900963352543648
[11/25/2024 08:18:12 INFO 140585769518912] Loss (name: value) logppx: 8.07851600467879
[11/25/2024 08:18:12 INFO 140585769518912] #quality_metric: host=algo-1, epoch=24, train total_loss <loss>=8.07851600467879
[2024-11-25 08:18:12.487] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 71, "duration": 133, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:12 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:12 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:12 INFO 140585769518912] Loss (name: value) total: 8.533516008425982
[11/25/2024 08:18:12 INFO 140585769518912] Loss (name: value) kld: 0.15122223022656564
[11/25/2024 08:18:12 INFO 140585769518912] Loss (name: value) recons: 8.382293818547176
[11/25/2024 08:18:12 INFO 140585769518912] Loss (name: value) logppx: 8.533516008425982
[11/25/2024 08:18:12 INFO 140585769518912] #validation_score (24): 8.533516008425982
[11/25/2024 08:18:12 INFO 140585769518912] patience losses:[8.575931333884215, 8.57005560459234, 8.564024274777143, 8.554291319235777, 8.54251216008113] min patience loss:8.54251216008113 current loss:8.533516008425982 absolute loss difference:0.008996151655146889
[11/25/2024 08:18:12 INFO 140585769518912] Timing: train: 2.36s, val: 0.14s, epoch: 2.50s
[11/25/2024 08:18:12 INFO 140585769518912] #progress_metric: host=algo-1, completed 16.0 % of epochs
#metrics {"StartTime": 1732522689.9922683, "EndTime": 1732522692.4908998, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 23, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 51024.0, "count": 1, "min": 51024, "max": 51024}, "Total Batches Seen": {"sum": 1704.0, "count": 1, "min": 1704, "max": 1704}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 48.0, "count": 1, "min": 48, "max": 48}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:12 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=850.8285885433852 records/second
[11/25/2024 08:18:12 INFO 140585769518912]
[11/25/2024 08:18:12 INFO 140585769518912] # Starting training for epoch 25
[2024-11-25 08:18:11.886] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 125, "duration": 1299, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:11 INFO 140341878044480] # Finished training epoch 42 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:18:11 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:11 INFO 140341878044480] Loss (name: value) total: 7.803143812108923
[11/25/2024 08:18:11 INFO 140341878044480] Loss (name: value) kld: 0.16752870700977468

[11/25/2024 08:18:11 INFO 140341878044480] Loss (name: value) recons: 7.635615115695529
[11/25/2024 08:18:11 INFO 140341878044480] Loss (name: value) logppx: 7.803143812108923
[11/25/2024 08:18:11 INFO 140341878044480] #quality_metric: host=algo-2, epoch=42, train total_loss <loss>=7.803143812108923
[2024-11-25 08:18:12.068] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 125, "duration": 181, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:12 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:12 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:18:12 INFO 140341878044480] Loss (name: value) total: 8.616630006447817
[11/25/2024 08:18:12 INFO 140341878044480] Loss (name: value) kld: 0.1604771974759224
[11/25/2024 08:18:12 INFO 140341878044480] Loss (name: value) recons: 8.456152930626502
[11/25/2024 08:18:12 INFO 140341878044480] Loss (name: value) logppx: 8.616630006447817
[11/25/2024 08:18:12 INFO 140341878044480] #validation_score (42): 8.616630006447817
[11/25/2024 08:18:12 INFO 140341878044480] patience losses:[8.608894778520632, 8.571189567370292, 8.559135358761518, 8.577278684958433, 8.539548511994191] min patience loss:8.539548511994191 current loss:8.616630006447817 absolute loss difference:0.07708149445362622
[11/25/2024 08:18:12 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 1
[11/25/2024 08:18:12 INFO 140341878044480] Timing: train: 1.30s, val: 0.18s, epoch: 1.48s
[11/25/2024 08:18:12 INFO 140341878044480] #progress_metric: host=algo-2, completed 28.0 % of epochs
#metrics {"StartTime": 1732522690.5864747, "EndTime": 1732522692.070756, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 41, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 44604.0, "count": 1, "min": 44604, "max": 44604}, "Total Batches Seen": {"sum": 1512.0, "count": 1, "min": 1512, "max": 1512}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 84.0, "count": 1, "min": 84, "max": 84}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:18:12 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=715.4226399778612 records/second
[11/25/2024 08:18:12 INFO 140341878044480]
[11/25/2024 08:18:12 INFO 140341878044480] # Starting training for epoch 43
[2024-11-25 08:18:14.933] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 74, "duration": 2441, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:14 INFO 140585769518912] # Finished training epoch 25 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:14 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:14 INFO 140585769518912] Loss (name: value) total: 8.077912000199438
[11/25/2024 08:18:14 INFO 140585769518912] Loss (name: value) kld: 0.17985037358154154
[11/25/2024 08:18:14 INFO 140585769518912] Loss (name: value) recons: 7.898061646654012
[11/25/2024 08:18:14 INFO 140585769518912] Loss (name: value) logppx: 8.077912000199438
[11/25/2024 08:18:14 INFO 140585769518912] #quality_metric: host=algo-1, epoch=25, train total_loss <loss>=8.077912000199438
[2024-11-25 08:18:15.080] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 74, "duration": 146, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:15 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:15 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:15 INFO 140585769518912] Loss (name: value) total: 8.554236778846153
[11/25/2024 08:18:15 INFO 140585769518912] Loss (name: value) kld: 0.16100355845231276
[11/25/2024 08:18:15 INFO 140585769518912] Loss (name: value) recons: 8.393233313927283
[11/25/2024 08:18:15 INFO 140585769518912] Loss (name: value) logppx: 8.554236778846153
[11/25/2024 08:18:15 INFO 140585769518912] #validation_score (25): 8.554236778846153
[11/25/2024 08:18:15 INFO 140585769518912] patience losses:[8.570055604592348, 8.564024274777143, 8.554291319235777, 8.54251216008113, 8.533516008425982] min patience loss:8.533516008425982 current loss:8.554236778846153 absolute loss difference:0.020720770420171064

[11/25/2024 08:18:15 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count: 1
[11/25/2024 08:18:15 INFO 140585769518912] Timing: train: 2.44s, val: 0.15s, epoch: 2.59s
[11/25/2024 08:18:15 INFO 140585769518912] #progress_metric: host=algo-1, completed 16.666666666666668 % of epochs
#metrics {"StartTime": 1732522692.49108, "EndTime": 1732522695.081992, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 24, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 53150.0, "count": 1, "min": 53150, "max": 53150}, "Total Batches Seen": {"sum": 1775.0, "count": 1, "min": 1775, "max": 1775}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 50.0, "count": 1, "min": 50, "max": 50}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:15 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=820.5208091061153 records/second
[11/25/2024 08:18:15 INFO 140585769518912]
[11/25/2024 08:18:15 INFO 140585769518912] # Starting training for epoch 26
[2024-11-25 08:18:13.294] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 128, "duration": 1223, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:13 INFO 140341878044480] # Finished training epoch 43 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:18:13 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:13 INFO 140341878044480] Loss (name: value) total: 7.794974291766131
[11/25/2024 08:18:13 INFO 140341878044480] Loss (name: value) kld: 0.16780620680914984
[11/25/2024 08:18:13 INFO 140341878044480] Loss (name: value) recons: 7.627168054933901
[11/25/2024 08:18:13 INFO 140341878044480] Loss (name: value) logppx: 7.794974291766131
[11/25/2024 08:18:13 INFO 140341878044480] #quality_metric: host=algo-2, epoch=43, train total_loss <loss>=7.794974291766131
[2024-11-25 08:18:13.457] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 128, "duration": 156, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:13 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:13 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:18:13 INFO 140341878044480] Loss (name: value) total: 8.575491137382311
[11/25/2024 08:18:13 INFO 140341878044480] Loss (name: value) kld: 0.15670713644761305
[11/25/2024 08:18:13 INFO 140341878044480] Loss (name: value) recons: 8.418784156212439
[11/25/2024 08:18:13 INFO 140341878044480] Loss (name: value) logppx: 8.575491137382311
[11/25/2024 08:18:13 INFO 140341878044480] #validation_score (43): 8.575491137382311
[11/25/2024 08:18:13 INFO 140341878044480] patience losses:[8.571189567370292, 8.559135358761518, 8.577278684958433, 8.539548511994191, 8.616630006447817] min patience loss:8.539548511994191 current loss:8.575491137382311 absolute loss difference:0.03594262538812032
[11/25/2024 08:18:13 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 2
[11/25/2024 08:18:13 INFO 140341878044480] Timing: train: 1.23s, val: 0.16s, epoch: 1.39s
[11/25/2024 08:18:13 INFO 140341878044480] #progress_metric: host=algo-2, completed 28.666666666666668 % of epochs
#metrics {"StartTime": 1732522692.0710638, "EndTime": 1732522693.4598348, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 42, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 45666.0, "count": 1, "min": 45666, "max": 45666}, "Total Batches Seen": {"sum": 1548.0, "count": 1, "min": 1548, "max": 1548}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 86.0, "count": 1, "min": 86, "max": 86}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:18:13 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=764.5891040044218 records/second
[11/25/2024 08:18:13 INFO 140341878044480]

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[11/25/2024 08:18:13 INFO 140341878044480] # Starting training for epoch 44
[2024-11-25 08:18:14.737] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 131, "duration": 1276, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:14 INFO 140341878044480] # Finished training epoch 44 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:18:14 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:14 INFO 140341878044480] Loss (name: value) total: 7.777844527915672
[11/25/2024 08:18:14 INFO 140341878044480] Loss (name: value) kld: 0.17235701547728643
[11/25/2024 08:18:14 INFO 140341878044480] Loss (name: value) recons: 7.60548750559489
[11/25/2024 08:18:14 INFO 140341878044480] Loss (name: value) logppx: 7.777844527915672
[11/25/2024 08:18:14 INFO 140341878044480] #quality_metric: host=algo-2, epoch=44, train total_l
oss <loss>=7.777844527915672
[2024-11-25 08:18:14.890] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 131, "duration": 151, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:14 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:14 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:18:14 INFO 140341878044480] Loss (name: value) total: 8.589154835236378
[11/25/2024 08:18:14 INFO 140341878044480] Loss (name: value) kld: 0.14866179013863587
[11/25/2024 08:18:14 INFO 140341878044480] Loss (name: value) recons: 8.44049322666266
[11/25/2024 08:18:14 INFO 140341878044480] Loss (name: value) logppx: 8.589154835236378
[11/25/2024 08:18:14 INFO 140341878044480] #validation_score (44): 8.589154835236378
[11/25/2024 08:18:14 INFO 140341878044480] patience losses:[8.559135358761518, 8.57727868495843
3, 8.539548511994191, 8.616630006447817, 8.575491137382311] min patience loss:8.539548511994191
current loss:8.589154835236378 absolute loss difference:0.0496063232421875
[11/25/2024 08:18:14 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count:
3
[11/25/2024 08:18:14 INFO 140341878044480] Timing: train: 1.28s, val: 0.15s, epoch: 1.43s
[11/25/2024 08:18:14 INFO 140341878044480] #progress_metric: host=algo-2, completed 29.333333333
333332 % of epochs
#metrics {"StartTime": 1732522693.460265, "EndTime": 1732522694.8915098, "Dimensions": {"Algorit
hm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 43, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 46728.0, "count": 1, "min": 46728, "max": 4672
8}, "Total Batches Seen": {"sum": 1584.0, "count": 1, "min": 1584, "max": 1584}, "Max Records Se
en Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Bet
ween Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 88.0, "cou
nt": 1, "min": 88, "max": 88}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,
"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:18:14 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=74
1.9462692653062 records/second
[11/25/2024 08:18:14 INFO 140341878044480]
[11/25/2024 08:18:14 INFO 140341878044480] # Starting training for epoch 45
[2024-11-25 08:18:16.060] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 134, "duration": 1168, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:16 INFO 140341878044480] # Finished training epoch 45 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:18:16 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:16 INFO 140341878044480] Loss (name: value) total: 7.773784693965205
[11/25/2024 08:18:16 INFO 140341878044480] Loss (name: value) kld: 0.1717027227083842
[11/25/2024 08:18:16 INFO 140341878044480] Loss (name: value) recons: 7.602081969932273
[11/25/2024 08:18:16 INFO 140341878044480] Loss (name: value) logppx: 7.773784693965205
[11/25/2024 08:18:16 INFO 140341878044480] #quality_metric: host=algo-2, epoch=45, train total_l
oss <loss>=7.773784693965205
[2024-11-25 08:18:16.221] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 134, "duration": 159, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:16 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:16 INFO 140341878044480] Metrics for Inference:
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[11/25/2024 08:18:16 INFO 140341878044480] Loss (name: value) total: 8.567869450495794
[11/25/2024 08:18:16 INFO 140341878044480] Loss (name: value) kld: 0.1498252416268373
[11/25/2024 08:18:16 INFO 140341878044480] Loss (name: value) recons: 8.418044065817808
[11/25/2024 08:18:16 INFO 140341878044480] Loss (name: value) logppx: 8.567869450495794
[11/25/2024 08:18:16 INFO 140341878044480] #validation_score (45): 8.567869450495794
[11/25/2024 08:18:16 INFO 140341878044480] patience losses:[8.577278684958433, 8.53954851199419
1, 8.616630006447817, 8.575491137382311, 8.589154835236378] min patience loss:8.539548511994191
current loss:8.567869450495794 absolute loss difference:0.028320938501602555
[11/25/2024 08:18:16 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count:
4
[11/25/2024 08:18:16 INFO 140341878044480] Timing: train: 1.17s, val: 0.16s, epoch: 1.33s
[11/25/2024 08:18:16 INFO 140341878044480] #progress_metric: host=algo-2, completed 30.0 % of ep
ochs
#metrics {"StartTime": 1732522694.8917994, "EndTime": 1732522696.2229176, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 44, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 47790.0, "count": 1, "min": 47790, "max": 4779
0}, "Total Batches Seen": {"sum": 1620.0, "count": 1, "min": 1620, "max": 1620}, "Max Records Se
en Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Bet
ween Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 90.0, "cou
nt": 1, "min": 90, "max": 90}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1,
"min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "mi
n": 36, "max": 36}}}
[11/25/2024 08:18:16 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=79
7.7580802015049 records/second
[11/25/2024 08:18:16 INFO 140341878044480]
[11/25/2024 08:18:16 INFO 140341878044480] # Starting training for epoch 46
[2024-11-25 08:18:17.459] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 77, "duration": 2377, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:17 INFO 140585769518912] # Finished training epoch 26 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:17 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:17 INFO 140585769518912] Loss (name: value) total: 8.07055108155443
[11/25/2024 08:18:17 INFO 140585769518912] Loss (name: value) kld: 0.182027624806328
[11/25/2024 08:18:17 INFO 140585769518912] Loss (name: value) recons: 7.888523463576052
[11/25/2024 08:18:17 INFO 140585769518912] Loss (name: value) logppx: 8.07055108155443
[11/25/2024 08:18:17 INFO 140585769518912] #quality_metric: host=algo-1, epoch=26, train total_l
oss <loss>=8.07055108155443
[2024-11-25 08:18:17.512] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 137, "duration": 1288, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:17 INFO 140341878044480] # Finished training epoch 46 on 1062 examples from 36
batches, each of size 30.
[11/25/2024 08:18:17 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:17 INFO 140341878044480] Loss (name: value) total: 7.753574025189435
[11/25/2024 08:18:17 INFO 140341878044480] Loss (name: value) kld: 0.1744471894370185
[11/25/2024 08:18:17 INFO 140341878044480] Loss (name: value) recons: 7.579126803080241
[11/25/2024 08:18:17 INFO 140341878044480] Loss (name: value) logppx: 7.753574025189435
[11/25/2024 08:18:17 INFO 140341878044480] #quality_metric: host=algo-2, epoch=46, train total_l
oss <loss>=7.753574025189435
[2024-11-25 08:18:17.640] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 137, "duration": 125, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:17 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:17 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:18:17 INFO 140341878044480] Loss (name: value) total: 8.553899989983975
[11/25/2024 08:18:17 INFO 140341878044480] Loss (name: value) kld: 0.15807671302404158
[11/25/2024 08:18:17 INFO 140341878044480] Loss (name: value) recons: 8.395823317307693
[11/25/2024 08:18:17 INFO 140341878044480] Loss (name: value) logppx: 8.553899989983975
[11/25/2024 08:18:17 INFO 140341878044480] #validation_score (46): 8.553899989983975
[11/25/2024 08:18:17 INFO 140341878044480] patience losses:[8.539548511994191, 8.61663000644781

7, 8.575491137382311, 8.589154835236378, 8.567869450495794] min patience loss:8.539548511994191 current loss:8.553899989983975 absolute loss difference:0.0143514779897842
[11/25/2024 08:18:17 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 5
[11/25/2024 08:18:17 INFO 140341878044480] Timing: train: 1.29s, val: 0.13s, epoch: 1.42s
[11/25/2024 08:18:17 INFO 140341878044480] #progress_metric: host=algo-2, completed 30.666666666666668 % of epochs
#metrics {"StartTime": 1732522696.2231412, "EndTime": 1732522697.6418333, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 45, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 48852.0, "count": 1, "min": 48852, "max": 48852}, "Total Batches Seen": {"sum": 1656.0, "count": 1, "min": 1656, "max": 1656}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 92.0, "count": 1, "min": 92, "max": 92}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:18:17 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=748.5164188444583 records/second
[11/25/2024 08:18:17 INFO 140341878044480]
[11/25/2024 08:18:17 INFO 140341878044480] # Starting training for epoch 47
[2024-11-25 08:18:17.578] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 77, "duration": 117, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:17 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:17 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:17 INFO 140585769518912] Loss (name: value) total: 8.55500758244441
[11/25/2024 08:18:17 INFO 140585769518912] Loss (name: value) kld: 0.16530361542334923
[11/25/2024 08:18:17 INFO 140585769518912] Loss (name: value) recons: 8.389703916892028
[11/25/2024 08:18:17 INFO 140585769518912] Loss (name: value) logppx: 8.55500758244441
[11/25/2024 08:18:17 INFO 140585769518912] #validation_score (26): 8.55500758244441
[11/25/2024 08:18:17 INFO 140585769518912] patience losses:[8.564024274777143, 8.554291319235777, 8.54251216008113, 8.533516008425982, 8.554236778846153] min patience loss:8.533516008425982 current loss:8.55500758244441 absolute loss difference:0.021491574018428494
[11/25/2024 08:18:17 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count: 2
[11/25/2024 08:18:17 INFO 140585769518912] Timing: train: 2.38s, val: 0.12s, epoch: 2.50s
[11/25/2024 08:18:17 INFO 140585769518912] #progress_metric: host=algo-1, completed 17.333333333333332 % of epochs
#metrics {"StartTime": 1732522695.0822506, "EndTime": 1732522697.5797698, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 25, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 55276.0, "count": 1, "min": 55276, "max": 55276}, "Total Batches Seen": {"sum": 1846.0, "count": 1, "min": 1846, "max": 1846}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 52.0, "count": 1, "min": 52, "max": 52}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:17 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=851.1987781502722 records/second
[11/25/2024 08:18:17 INFO 140585769518912]
[11/25/2024 08:18:17 INFO 140585769518912] # Starting training for epoch 27
[2024-11-25 08:18:18.893] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 140, "duration": 1251, "num_examples": 36, "num_bytes": 555736}
[11/25/2024 08:18:18 INFO 140341878044480] # Finished training epoch 47 on 1062 examples from 36 batches, each of size 30.
[11/25/2024 08:18:18 INFO 140341878044480] Metrics for Training:
[11/25/2024 08:18:18 INFO 140341878044480] Loss (name: value) total: 7.749429441381384
[11/25/2024 08:18:18 INFO 140341878044480] Loss (name: value) kld: 0.1700862741028821
[11/25/2024 08:18:18 INFO 140341878044480] Loss (name: value) recons: 7.579343152929235

[11/25/2024 08:18:18 INFO 140341878044480] Loss (name: value) logppx: 7.749429441381384
[11/25/2024 08:18:18 INFO 140341878044480] #quality_metric: host=algo-2, epoch=47, train total_loss <loss>=7.749429441381384
[2024-11-25 08:18:19.039] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 140, "duration": 143, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:19 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:19 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:18:19 INFO 140341878044480] Loss (name: value) total: 8.563382897010216
[11/25/2024 08:18:19 INFO 140341878044480] Loss (name: value) kld: 0.1528072259364984
[11/25/2024 08:18:19 INFO 140341878044480] Loss (name: value) recons: 8.410575592823518
[11/25/2024 08:18:19 INFO 140341878044480] Loss (name: value) logppx: 8.563382897010216
[11/25/2024 08:18:19 INFO 140341878044480] #validation_score (47): 8.563382897010216
[11/25/2024 08:18:19 INFO 140341878044480] patience losses:[8.616630006447817, 8.575491137382311, 8.589154835236378, 8.567869450495794, 8.553899989983975] min patience loss:8.553899989983975 current loss:8.563382897010216 absolute loss difference:0.009482907026240994
[11/25/2024 08:18:19 INFO 140341878044480] Bad epoch: loss has not improved (enough). Bad count: 6
[11/25/2024 08:18:19 INFO 140341878044480] Bad epochs exceeded patience. Stopping training early!
[11/25/2024 08:18:19 INFO 140341878044480] Timing: train: 1.25s, val: 0.15s, epoch: 1.40s
[11/25/2024 08:18:19 INFO 140341878044480] Early stop condition met. Stopping training.
[11/25/2024 08:18:19 INFO 140341878044480] #progress_metric: host=algo-2, completed 100 % epochs #metrics {"StartTime": 1732522697.6421256, "EndTime": 1732522699.0404117, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-2", "Operation": "training", "epoch": 46, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 49914.0, "count": 1, "min": 49914, "max": 49914}, "Total Batches Seen": {"sum": 1692.0, "count": 1, "min": 1692, "max": 1692}, "Max Records Seen Between Resets": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Max Batches Seen Between Resets": {"sum": 36.0, "count": 1, "min": 36, "max": 36}, "Reset Count": {"sum": 94.0, "count": 1, "min": 94, "max": 94}, "Number of Records Since Last Reset": {"sum": 1062.0, "count": 1, "min": 1062, "max": 1062}, "Number of Batches Since Last Reset": {"sum": 36.0, "count": 1, "min": 36, "max": 36}}}
[11/25/2024 08:18:19 INFO 140341878044480] #throughput_metric: host=algo-2, train throughput=759.4328482541155 records/second
[2024-11-25 08:18:19.794] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 80, "duration": 2214, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:19 INFO 140585769518912] # Finished training epoch 27 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:19 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:19 INFO 140585769518912] Loss (name: value) total: 8.047129442098555
[11/25/2024 08:18:19 INFO 140585769518912] Loss (name: value) kld: 0.1814910843898433
[11/25/2024 08:18:19 INFO 140585769518912] Loss (name: value) recons: 7.865638367558869
[11/25/2024 08:18:19 INFO 140585769518912] Loss (name: value) logppx: 8.047129442098555
[11/25/2024 08:18:19 INFO 140585769518912] #quality_metric: host=algo-1, epoch=27, train total_loss <loss>=8.047129442098555
[2024-11-25 08:18:19.908] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 80, "duration": 111, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:19 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:19 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:19 INFO 140585769518912] Loss (name: value) total: 8.527825497358274
[11/25/2024 08:18:19 INFO 140585769518912] Loss (name: value) kld: 0.1402679742910923
[11/25/2024 08:18:19 INFO 140585769518912] Loss (name: value) recons: 8.387557592147436
[11/25/2024 08:18:19 INFO 140585769518912] Loss (name: value) logppx: 8.527825497358274
[11/25/2024 08:18:19 INFO 140585769518912] #validation_score (27): 8.527825497358274
[11/25/2024 08:18:19 INFO 140585769518912] patience losses:[8.554291319235777, 8.54251216008113, 8.533516008425982, 8.554236778846153, 8.55500758244441] min patience loss:8.533516008425982 current loss:8.527825497358274 absolute loss difference:0.00569051106770857
[11/25/2024 08:18:19 INFO 140585769518912] Timing: train: 2.22s, val: 0.12s, epoch: 2.33s

[11/25/2024 08:18:19 INFO 140585769518912] #progress_metric: host=algo-1, completed 18.0 % of epochs
#metrics {"StartTime": 1732522697.580012, "EndTime": 1732522699.91256, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 26, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 57402.0, "count": 1, "min": 57402, "max": 57402}, "Total Batches Seen": {"sum": 1917.0, "count": 1, "min": 1917, "max": 1917}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 54.0, "count": 1, "min": 54, "max": 54}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:19 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=911.4024318673023 records/second
[11/25/2024 08:18:19 INFO 140585769518912]
[11/25/2024 08:18:19 INFO 140585769518912] # Starting training for epoch 28
[2024-11-25 08:18:21.885] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 83, "duration": 1972, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:21 INFO 140585769518912] # Finished training epoch 28 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:21 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:21 INFO 140585769518912] Loss (name: value) total: 7.991828474304485
[11/25/2024 08:18:21 INFO 140585769518912] Loss (name: value) kld: 0.18552680261817897
[11/25/2024 08:18:21 INFO 140585769518912] Loss (name: value) recons: 7.8063017079527945
[11/25/2024 08:18:21 INFO 140585769518912] Loss (name: value) logppx: 7.991828474304485
[11/25/2024 08:18:21 INFO 140585769518912] #quality_metric: host=algo-1, epoch=28, train total_loss <loss>=7.991828474304485
[2024-11-25 08:18:22.040] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 83, "duration": 152, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:22 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:22 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:22 INFO 140585769518912] Loss (name: value) total: 8.521417236328125
[11/25/2024 08:18:22 INFO 140585769518912] Loss (name: value) kld: 0.15419135582752716
[11/25/2024 08:18:22 INFO 140585769518912] Loss (name: value) recons: 8.367225803473056
[11/25/2024 08:18:22 INFO 140585769518912] Loss (name: value) logppx: 8.521417236328125
[11/25/2024 08:18:22 INFO 140585769518912] #validation_score (28): 8.521417236328125
[11/25/2024 08:18:22 INFO 140585769518912] patience losses:[8.54251216008113, 8.533516008425982, 8.554236778846153, 8.55500758244441, 8.527825497358274] min patience loss:8.527825497358274 current loss:8.521417236328125 absolute loss difference:0.006408261030149021
[11/25/2024 08:18:22 INFO 140585769518912] Timing: train: 1.97s, val: 0.16s, epoch: 2.13s
[11/25/2024 08:18:22 INFO 140585769518912] #progress_metric: host=algo-1, completed 18.666666666666668 % of epochs
#metrics {"StartTime": 1732522699.9127932, "EndTime": 1732522702.0440297, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 27, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 59528.0, "count": 1, "min": 59528, "max": 59528}, "Total Batches Seen": {"sum": 1988.0, "count": 1, "min": 1988, "max": 1988}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 56.0, "count": 1, "min": 56, "max": 56}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:22 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=997.4978688864583 records/second
[11/25/2024 08:18:22 INFO 140585769518912]
[11/25/2024 08:18:22 INFO 140585769518912] # Starting training for epoch 29
[2024-11-25 08:18:23.959] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 86, "duration": 1914, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:23 INFO 140585769518912] # Finished training epoch 29 on 2126 examples from 71 batches, each of size 30.

[11/25/2024 08:18:23 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:23 INFO 140585769518912] Loss (name: value) total: 7.954724207058759
[11/25/2024 08:18:23 INFO 140585769518912] Loss (name: value) kld: 0.18847504311324284
[11/25/2024 08:18:23 INFO 140585769518912] Loss (name: value) recons: 7.766249113127659
[11/25/2024 08:18:23 INFO 140585769518912] Loss (name: value) logppx: 7.954724207058759
[11/25/2024 08:18:23 INFO 140585769518912] #quality_metric: host=algo-1, epoch=29, train total_loss <loss>=7.954724207058759
[2024-11-25 08:18:24.085] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 86, "duration": 124, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:24 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:24 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:24 INFO 140585769518912] Loss (name: value) total: 8.509837928185096
[11/25/2024 08:18:24 INFO 140585769518912] Loss (name: value) kld: 0.1607179195452959
[11/25/2024 08:18:24 INFO 140585769518912] Loss (name: value) recons: 8.349120115622496
[11/25/2024 08:18:24 INFO 140585769518912] Loss (name: value) logppx: 8.509837928185096
[11/25/2024 08:18:24 INFO 140585769518912] #validation_score (29): 8.509837928185096
[11/25/2024 08:18:24 INFO 140585769518912] patience losses:[8.533516008425982, 8.554236778846153, 8.55500758244441, 8.527825497358274, 8.521417236328125] min patience loss:8.521417236328125 current loss:8.509837928185096 absolute loss difference:0.011579308143028655
[11/25/2024 08:18:24 INFO 140585769518912] Timing: train: 1.92s, val: 0.13s, epoch: 2.04s
[11/25/2024 08:18:24 INFO 140585769518912] #progress_metric: host=algo-1, completed 19.333333333333332 % of epochs
#metrics {"StartTime": 1732522702.0441854, "EndTime": 1732522704.0888362, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 28, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 61654.0, "count": 1, "min": 61654, "max": 61654}, "Total Batches Seen": {"sum": 2059.0, "count": 1, "min": 2059, "max": 2059}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 58.0, "count": 1, "min": 58, "max": 58}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:24 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=1039.7309510905814 records/second
[11/25/2024 08:18:24 INFO 140585769518912]
[11/25/2024 08:18:24 INFO 140585769518912] # Starting training for epoch 30
[2024-11-25 08:18:25.992] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 89, "duration": 1903, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:25 INFO 140585769518912] # Finished training epoch 30 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:25 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:25 INFO 140585769518912] Loss (name: value) total: 7.932726241277417
[11/25/2024 08:18:25 INFO 140585769518912] Loss (name: value) kld: 0.19129584014695575
[11/25/2024 08:18:25 INFO 140585769518912] Loss (name: value) recons: 7.741430406167473
[11/25/2024 08:18:25 INFO 140585769518912] Loss (name: value) logppx: 7.932726241277417
[11/25/2024 08:18:25 INFO 140585769518912] #quality_metric: host=algo-1, epoch=30, train total_loss <loss>=7.932726241277417
[2024-11-25 08:18:26.111] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 89, "duration": 115, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:26 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:26 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:26 INFO 140585769518912] Loss (name: value) total: 8.49710677709335
[11/25/2024 08:18:26 INFO 140585769518912] Loss (name: value) kld: 0.16696590521396734
[11/25/2024 08:18:26 INFO 140585769518912] Loss (name: value) recons: 8.330140920785757
[11/25/2024 08:18:26 INFO 140585769518912] Loss (name: value) logppx: 8.49710677709335
[11/25/2024 08:18:26 INFO 140585769518912] #validation_score (30): 8.49710677709335
[11/25/2024 08:18:26 INFO 140585769518912] patience losses:[8.554236778846153, 8.55500758244441, 8.527825497358274, 8.521417236328125, 8.509837928185096] min patience loss:8.509837928185096 cur

rent loss:8.49710677709335 absolute loss difference:0.01273115109174583
[11/25/2024 08:18:26 INFO 140585769518912] Timing: train: 1.91s, val: 0.12s, epoch: 2.03s
[11/25/2024 08:18:26 INFO 140585769518912] #progress_metric: host=algo-1, completed 20.0 % of ep
ochs
#metrics {"StartTime": 1732522704.0891092, "EndTime": 1732522706.115888, "Dimensions": {"Algorit
hm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 29, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 63780.0, "count": 1, "min": 63780, "max": 6378
0}, "Total Batches Seen": {"sum": 2130.0, "count": 1, "min": 2130, "max": 2130}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 60.0, "cou
nt": 1, "min": 60, "max": 60}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:18:26 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=104
8.8855840564418 records/second
[11/25/2024 08:18:26 INFO 140585769518912]
[11/25/2024 08:18:26 INFO 140585769518912] # Starting training for epoch 31
[2024-11-25 08:18:28.039] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 92, "duration": 1923, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:28 INFO 140585769518912] # Finished training epoch 31 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:28 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:28 INFO 140585769518912] Loss (name: value) total: 7.914855699136224
[11/25/2024 08:18:28 INFO 140585769518912] Loss (name: value) kld: 0.1928620842141165
[11/25/2024 08:18:28 INFO 140585769518912] Loss (name: value) recons: 7.721993638875898
[11/25/2024 08:18:28 INFO 140585769518912] Loss (name: value) logppx: 7.914855699136224
[11/25/2024 08:18:28 INFO 140585769518912] #quality_metric: host=algo-1, epoch=31, train total_l
oss <loss>=7.914855699136224
[2024-11-25 08:18:28.155] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 92, "duration": 113, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:28 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:28 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:28 INFO 140585769518912] Loss (name: value) total: 8.481966967460437
[11/25/2024 08:18:28 INFO 140585769518912] Loss (name: value) kld: 0.15714410574008256
[11/25/2024 08:18:28 INFO 140585769518912] Loss (name: value) recons: 8.324822880671574
[11/25/2024 08:18:28 INFO 140585769518912] Loss (name: value) logppx: 8.481966967460437
[11/25/2024 08:18:28 INFO 140585769518912] #validation_score (31): 8.481966967460437
[11/25/2024 08:18:28 INFO 140585769518912] patience losses:[8.55500758244441, 8.527825497358274,
8.521417236328125, 8.509837928185096, 8.49710677709335] min patience loss:8.49710677709335 curre
nt loss:8.481966967460437 absolute loss difference:0.01513980963291317
[11/25/2024 08:18:28 INFO 140585769518912] Timing: train: 1.93s, val: 0.12s, epoch: 2.04s
[11/25/2024 08:18:28 INFO 140585769518912] #progress_metric: host=algo-1, completed 20.666666666
666668 % of epochs
#metrics {"StartTime": 1732522706.116132, "EndTime": 1732522708.1589947, "Dimensions": {"Algorit
hm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 30, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 65906.0, "count": 1, "min": 65906, "max": 6590
6}, "Total Batches Seen": {"sum": 2201.0, "count": 1, "min": 2201, "max": 2201}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 62.0, "cou
nt": 1, "min": 62, "max": 62}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:18:28 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=104
0.6130585405144 records/second
[11/25/2024 08:18:28 INFO 140585769518912]
[11/25/2024 08:18:28 INFO 140585769518912] # Starting training for epoch 32
[2024-11-25 08:18:30.105] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 95, "duration": 1946, "num_examples": 71, "num_bytes": 833232}

```
[11/25/2024 08:18:30 INFO 140585769518912] # Finished training epoch 32 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:30 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:30 INFO 140585769518912] Loss (name: value) total: 7.901750419509243
[11/25/2024 08:18:30 INFO 140585769518912] Loss (name: value) kld: 0.19453216595269146
[11/25/2024 08:18:30 INFO 140585769518912] Loss (name: value) recons: 7.7072182597129
[11/25/2024 08:18:30 INFO 140585769518912] Loss (name: value) logppx: 7.901750419509243
[11/25/2024 08:18:30 INFO 140585769518912] #quality_metric: host=algo-1, epoch=32, train total_l
oss <loss>=7.901750419509243
[2024-11-25 08:18:30.215] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 95, "duration": 107, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:30 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:30 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:30 INFO 140585769518912] Loss (name: value) total: 8.489356525127704
[11/25/2024 08:18:30 INFO 140585769518912] Loss (name: value) kld: 0.17517199149498572
[11/25/2024 08:18:30 INFO 140585769518912] Loss (name: value) recons: 8.314184531187399
[11/25/2024 08:18:30 INFO 140585769518912] Loss (name: value) logppx: 8.489356525127704
[11/25/2024 08:18:30 INFO 140585769518912] #validation_score (32): 8.489356525127704
[11/25/2024 08:18:30 INFO 140585769518912] patience losses:[8.527825497358274, 8.52141723632812
5, 8.509837928185096, 8.49710677709335, 8.481966967460437] min patience loss:8.481966967460437 c
urrent loss:8.489356525127704 absolute loss difference:0.0073895576672668994
[11/25/2024 08:18:30 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count:
1
[11/25/2024 08:18:30 INFO 140585769518912] Timing: train: 1.95s, val: 0.11s, epoch: 2.06s
[11/25/2024 08:18:30 INFO 140585769518912] #progress_metric: host=algo-1, completed 21.333333333
333332 % of epochs
#metrics {"StartTime": 1732522708.1592603, "EndTime": 1732522710.2162654, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 31, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 68032.0, "count": 1, "min": 68032, "max": 6803
2}, "Total Batches Seen": {"sum": 2272.0, "count": 1, "min": 2272, "max": 2272}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 64.0, "cou
nt": 1, "min": 64, "max": 64}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:18:30 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=103
3.4798298466926 records/second
[11/25/2024 08:18:30 INFO 140585769518912]
[11/25/2024 08:18:30 INFO 140585769518912] # Starting training for epoch 33
[2024-11-25 08:18:32.200] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 98, "duration": 1983, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:32 INFO 140585769518912] # Finished training epoch 33 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:32 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:32 INFO 140585769518912] Loss (name: value) total: 7.889999303683429
[11/25/2024 08:18:32 INFO 140585769518912] Loss (name: value) kld: 0.1973818689444815
[11/25/2024 08:18:32 INFO 140585769518912] Loss (name: value) recons: 7.6926174253365245
[11/25/2024 08:18:32 INFO 140585769518912] Loss (name: value) logppx: 7.889999303683429
[11/25/2024 08:18:32 INFO 140585769518912] #quality_metric: host=algo-1, epoch=33, train total_l
oss <loss>=7.889999303683429
[2024-11-25 08:18:32.311] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 98, "duration": 108, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:32 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:32 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:32 INFO 140585769518912] Loss (name: value) total: 8.486211140950521
[11/25/2024 08:18:32 INFO 140585769518912] Loss (name: value) kld: 0.16923842552380683
[11/25/2024 08:18:32 INFO 140585769518912] Loss (name: value) recons: 8.31697270320012
```

[11/25/2024 08:18:32 INFO 140585769518912] Loss (name: value) logppx: 8.486211140950521
[11/25/2024 08:18:32 INFO 140585769518912] #validation_score (33): 8.486211140950521
[11/25/2024 08:18:32 INFO 140585769518912] patience losses:[8.521417236328125, 8.50983792818509
6, 8.49710677709335, 8.481966967460437, 8.489356525127704] min patience loss:8.481966967460437 c
urrent loss:8.486211140950521 absolute loss difference:0.004244173490084435
[11/25/2024 08:18:32 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count:
2
[11/25/2024 08:18:32 INFO 140585769518912] Timing: train: 1.99s, val: 0.11s, epoch: 2.10s
[11/25/2024 08:18:32 INFO 140585769518912] #progress_metric: host=algo-1, completed 22.0 % of ep
ochs
#metrics {"StartTime": 1732522710.216465, "EndTime": 1732522712.3119636, "Dimensions": {"Algorit
hm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 32, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 70158.0, "count": 1, "min": 70158, "max": 7015
8}, "Total Batches Seen": {"sum": 2343.0, "count": 1, "min": 2343, "max": 2343}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 66.0, "cou
nt": 1, "min": 66, "max": 66}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:18:32 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=101
4.499944195673 records/second
[11/25/2024 08:18:32 INFO 140585769518912]
[11/25/2024 08:18:32 INFO 140585769518912] # Starting training for epoch 34
[2024-11-25 08:18:34.286] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 101, "duration": 1973, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:34 INFO 140585769518912] # Finished training epoch 34 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:34 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:34 INFO 140585769518912] Loss (name: value) total: 7.880194743698191
[11/25/2024 08:18:34 INFO 140585769518912] Loss (name: value) kld: 0.19994706234461826
[11/25/2024 08:18:34 INFO 140585769518912] Loss (name: value) recons: 7.68024765516111
[11/25/2024 08:18:34 INFO 140585769518912] Loss (name: value) logppx: 7.880194743698191
[11/25/2024 08:18:34 INFO 140585769518912] #quality_metric: host=algo-1, epoch=34, train total_l
oss <loss>=7.880194743698191
[2024-11-25 08:18:34.397] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 101, "duration": 109, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:34 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:34 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:34 INFO 140585769518912] Loss (name: value) total: 8.480758666992188
[11/25/2024 08:18:34 INFO 140585769518912] Loss (name: value) kld: 0.1753392696380615
[11/25/2024 08:18:34 INFO 140585769518912] Loss (name: value) recons: 8.305419413248698
[11/25/2024 08:18:34 INFO 140585769518912] Loss (name: value) logppx: 8.480758666992188
[11/25/2024 08:18:34 INFO 140585769518912] #validation_score (34): 8.480758666992188
[11/25/2024 08:18:34 INFO 140585769518912] patience losses:[8.509837928185096, 8.49710677709335,
8.481966967460437, 8.489356525127704, 8.486211140950521] min patience loss:8.481966967460437 cur
rent loss:8.480758666992188 absolute loss difference:0.0012083004682494902
[11/25/2024 08:18:34 INFO 140585769518912] Timing: train: 1.97s, val: 0.11s, epoch: 2.09s
[11/25/2024 08:18:34 INFO 140585769518912] #progress_metric: host=algo-1, completed 22.666666666
666668 % of epochs
#metrics {"StartTime": 1732522712.3121524, "EndTime": 1732522714.4003322, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 33, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 72284.0, "count": 1, "min": 72284, "max": 7228
4}, "Total Batches Seen": {"sum": 2414.0, "count": 1, "min": 2414, "max": 2414}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 68.0, "cou
nt": 1, "min": 68, "max": 68}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}

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[11/25/2024 08:18:34 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=101
8.0569185897228 records/second
[11/25/2024 08:18:34 INFO 140585769518912]
[11/25/2024 08:18:34 INFO 140585769518912] # Starting training for epoch 35
[2024-11-25 08:18:36.349] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 104, "duration": 1949, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:36 INFO 140585769518912] # Finished training epoch 35 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:36 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:36 INFO 140585769518912] Loss (name: value) total: 7.871388738927707
[11/25/2024 08:18:36 INFO 140585769518912] Loss (name: value) kld: 0.20123267073026846
[11/25/2024 08:18:36 INFO 140585769518912] Loss (name: value) recons: 7.670156043683979
[11/25/2024 08:18:36 INFO 140585769518912] Loss (name: value) logppx: 7.871388738927707
[11/25/2024 08:18:36 INFO 140585769518912] #quality_metric: host=algo-1, epoch=35, train total_l
oss <loss>=7.871388738927707
[2024-11-25 08:18:36.460] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 104, "duration": 109, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:36 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:36 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:36 INFO 140585769518912] Loss (name: value) total: 8.475882584009415
[11/25/2024 08:18:36 INFO 140585769518912] Loss (name: value) kld: 0.17783348010136532
[11/25/2024 08:18:36 INFO 140585769518912] Loss (name: value) recons: 8.298048987755408
[11/25/2024 08:18:36 INFO 140585769518912] Loss (name: value) logppx: 8.475882584009415
[11/25/2024 08:18:36 INFO 140585769518912] #validation_score (35): 8.475882584009415
[11/25/2024 08:18:36 INFO 140585769518912] patience losses:[8.49710677709335, 8.481966967460437,
8.489356525127704, 8.486211140950521, 8.480758666992188] min patience loss:8.480758666992188 cur
rent loss:8.475882584009415 absolute loss difference:0.00487608298277209
[11/25/2024 08:18:36 INFO 140585769518912] Timing: train: 1.95s, val: 0.11s, epoch: 2.06s
[11/25/2024 08:18:36 INFO 140585769518912] #progress_metric: host=algo-1, completed 23.333333333
333332 % of epochs
#metrics {"StartTime": 1732522714.4005244, "EndTime": 1732522716.4643323, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 34, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 74410.0, "count": 1, "min": 74410, "max": 7441
0}, "Total Batches Seen": {"sum": 2485.0, "count": 1, "min": 2485, "max": 2485}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 70.0, "cou
nt": 1, "min": 70, "max": 70}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:18:36 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=103
0.0892651045403 records/second
[11/25/2024 08:18:36 INFO 140585769518912]
[11/25/2024 08:18:36 INFO 140585769518912] # Starting training for epoch 36
[2024-11-25 08:18:38.351] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 107, "duration": 1887, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:38 INFO 140585769518912] # Finished training epoch 36 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:38 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:38 INFO 140585769518912] Loss (name: value) total: 7.857845130884591
[11/25/2024 08:18:38 INFO 140585769518912] Loss (name: value) kld: 0.2012859880644391
[11/25/2024 08:18:38 INFO 140585769518912] Loss (name: value) recons: 7.656559130171655
[11/25/2024 08:18:38 INFO 140585769518912] Loss (name: value) logppx: 7.857845130884591
[11/25/2024 08:18:38 INFO 140585769518912] #quality_metric: host=algo-1, epoch=36, train total_l
oss <loss>=7.857845130884591
[2024-11-25 08:18:38.461] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 107, "duration": 108, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:38 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
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[11/25/2024 08:18:38 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:38 INFO 140585769518912] Loss (name: value) total: 8.468110461112781
[11/25/2024 08:18:38 INFO 140585769518912] Loss (name: value) kld: 0.17364279429117838
[11/25/2024 08:18:38 INFO 140585769518912] Loss (name: value) recons: 8.29446759346204
[11/25/2024 08:18:38 INFO 140585769518912] Loss (name: value) logppx: 8.468110461112781
[11/25/2024 08:18:38 INFO 140585769518912] #validation_score (36): 8.468110461112781
[11/25/2024 08:18:38 INFO 140585769518912] patience losses:[8.481966967460437, 8.48935652512770
4, 8.486211140950521, 8.480758666992188, 8.475882584009415] min patience loss:8.475882584009415
current loss:8.468110461112781 absolute loss difference:0.007772122896634315
[11/25/2024 08:18:38 INFO 140585769518912] Timing: train: 1.89s, val: 0.11s, epoch: 2.00s
[11/25/2024 08:18:38 INFO 140585769518912] #progress_metric: host=algo-1, completed 24.0 % of ep
ochs
#metrics {"StartTime": 1732522716.464481, "EndTime": 1732522718.4647322, "Dimensions": {"Algorit
hm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 35, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 76536.0, "count": 1, "min": 76536, "max": 7653
6}, "Total Batches Seen": {"sum": 2556.0, "count": 1, "min": 2556, "max": 2556}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 72.0, "cou
nt": 1, "min": 72, "max": 72}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:18:38 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=106
2.8107148161012 records/second
[11/25/2024 08:18:38 INFO 140585769518912]
[11/25/2024 08:18:38 INFO 140585769518912] # Starting training for epoch 37
[2024-11-25 08:18:40.460] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 110, "duration": 1995, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:40 INFO 140585769518912] # Finished training epoch 37 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:40 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:40 INFO 140585769518912] Loss (name: value) total: 7.850812777666978
[11/25/2024 08:18:40 INFO 140585769518912] Loss (name: value) kld: 0.20401741988222363
[11/25/2024 08:18:40 INFO 140585769518912] Loss (name: value) recons: 7.646795339091843
[11/25/2024 08:18:40 INFO 140585769518912] Loss (name: value) logppx: 7.850812777666978
[11/25/2024 08:18:40 INFO 140585769518912] #quality_metric: host=algo-1, epoch=37, train total_l
oss <loss>=7.850812777666978
[2024-11-25 08:18:40.570] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 110, "duration": 106, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:40 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:40 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:40 INFO 140585769518912] Loss (name: value) total: 8.470429131923577
[11/25/2024 08:18:40 INFO 140585769518912] Loss (name: value) kld: 0.1859680481446095
[11/25/2024 08:18:40 INFO 140585769518912] Loss (name: value) recons: 8.284461075220353
[11/25/2024 08:18:40 INFO 140585769518912] Loss (name: value) logppx: 8.470429131923577
[11/25/2024 08:18:40 INFO 140585769518912] #validation_score (37): 8.470429131923577
[11/25/2024 08:18:40 INFO 140585769518912] patience losses:[8.489356525127704, 8.48621114095052
1, 8.480758666992188, 8.475882584009415, 8.468110461112781] min patience loss:8.468110461112781
current loss:8.470429131923577 absolute loss difference:0.002318670810796064
[11/25/2024 08:18:40 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count:
1
[11/25/2024 08:18:40 INFO 140585769518912] Timing: train: 2.00s, val: 0.11s, epoch: 2.11s
[11/25/2024 08:18:40 INFO 140585769518912] #progress_metric: host=algo-1, completed 24.666666666
666668 % of epochs
#metrics {"StartTime": 1732522718.4649508, "EndTime": 1732522720.5712762, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 36, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 78662.0, "count": 1, "min": 78662, "max": 7866
2}, "Total Batches Seen": {"sum": 2627.0, "count": 1, "min": 2627, "max": 2627}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet

ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 74.0, "count": 1, "min": 74, "max": 74}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:40 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=1009.2860054636941 records/second
[11/25/2024 08:18:40 INFO 140585769518912]
[11/25/2024 08:18:40 INFO 140585769518912] # Starting training for epoch 38
[2024-11-25 08:18:42.579] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 113, "duration": 2007, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:42 INFO 140585769518912] # Finished training epoch 38 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:42 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:42 INFO 140585769518912] Loss (name: value) total: 7.846425245401445
[11/25/2024 08:18:42 INFO 140585769518912] Loss (name: value) kld: 0.2082470607309834
[11/25/2024 08:18:42 INFO 140585769518912] Loss (name: value) recons: 7.638178156463193
[11/25/2024 08:18:42 INFO 140585769518912] Loss (name: value) logppx: 7.846425245401445
[11/25/2024 08:18:42 INFO 140585769518912] #quality_metric: host=algo-1, epoch=38, train total_loss <loss>=7.846425245401445
[2024-11-25 08:18:42.692] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 113, "duration": 111, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:42 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:42 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:42 INFO 140585769518912] Loss (name: value) total: 8.465345216408753
[11/25/2024 08:18:42 INFO 140585769518912] Loss (name: value) kld: 0.18400581922286596
[11/25/2024 08:18:42 INFO 140585769518912] Loss (name: value) recons: 8.281339322603666
[11/25/2024 08:18:42 INFO 140585769518912] Loss (name: value) logppx: 8.465345216408753
[11/25/2024 08:18:42 INFO 140585769518912] #validation_score (38): 8.465345216408753
[11/25/2024 08:18:42 INFO 140585769518912] patience losses:[8.486211140950521, 8.480758666992188, 8.475882584009415, 8.468110461112781, 8.470429131923577] min patience loss:8.468110461112781 current loss:8.465345216408753 absolute loss difference:0.002765244704027836
[11/25/2024 08:18:42 INFO 140585769518912] Timing: train: 2.01s, val: 0.12s, epoch: 2.12s
[11/25/2024 08:18:42 INFO 140585769518912] #progress_metric: host=algo-1, completed 25.333333333333332 % of epochs
#metrics {"StartTime": 1732522720.5715065, "EndTime": 1732522722.6957655, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 37, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 80788.0, "count": 1, "min": 80788, "max": 80788}, "Total Batches Seen": {"sum": 2698.0, "count": 1, "min": 2698, "max": 2698}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 76.0, "count": 1, "min": 76, "max": 76}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:42 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=1000.5246955538645 records/second
[11/25/2024 08:18:42 INFO 140585769518912]
[11/25/2024 08:18:42 INFO 140585769518912] # Starting training for epoch 39
[2024-11-25 08:18:44.620] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 116, "duration": 1923, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:44 INFO 140585769518912] # Finished training epoch 39 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:44 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:44 INFO 140585769518912] Loss (name: value) total: 7.838280125291135
[11/25/2024 08:18:44 INFO 140585769518912] Loss (name: value) kld: 0.209286071325132
[11/25/2024 08:18:44 INFO 140585769518912] Loss (name: value) recons: 7.628994084747744
[11/25/2024 08:18:44 INFO 140585769518912] Loss (name: value) logppx: 7.838280125291135
[11/25/2024 08:18:44 INFO 140585769518912] #quality_metric: host=algo-1, epoch=39, train total_loss <loss>=7.838280125291135

[2024-11-25 08:18:44.741] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 116, "duration": 119, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:44 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:44 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:44 INFO 140585769518912] Loss (name: value) total: 8.469520216721754
[11/25/2024 08:18:44 INFO 140585769518912] Loss (name: value) kld: 0.18552938241225023
[11/25/2024 08:18:44 INFO 140585769518912] Loss (name: value) recons: 8.283990869766626
[11/25/2024 08:18:44 INFO 140585769518912] Loss (name: value) logppx: 8.469520216721754
[11/25/2024 08:18:44 INFO 140585769518912] #validation_score (39): 8.469520216721754
[11/25/2024 08:18:44 INFO 140585769518912] patience losses:[8.480758666992188, 8.47588258400941
5, 8.468110461112781, 8.470429131923577, 8.465345216408753] min patience loss:8.465345216408753
current loss:8.469520216721754 absolute loss difference:0.00417500031300122
[11/25/2024 08:18:44 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count:
1
[11/25/2024 08:18:44 INFO 140585769518912] Timing: train: 1.92s, val: 0.12s, epoch: 2.05s
[11/25/2024 08:18:44 INFO 140585769518912] #progress_metric: host=algo-1, completed 26.0 % of epochs
#metrics {"StartTime": 1732522722.6964948, "EndTime": 1732522724.7430813, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 38, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 82914.0, "count": 1, "min": 82914, "max": 82914}, "Total Batches Seen": {"sum": 2769.0, "count": 1, "min": 2769, "max": 2769}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 78.0, "count": 1, "min": 78, "max": 78}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:44 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=1038.739488824665 records/second
[11/25/2024 08:18:44 INFO 140585769518912]
[11/25/2024 08:18:44 INFO 140585769518912] # Starting training for epoch 40
[2024-11-25 08:18:46.684] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 119, "duration": 1940, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:46 INFO 140585769518912] # Finished training epoch 40 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:46 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:46 INFO 140585769518912] Loss (name: value) total: 7.832438974873001
[11/25/2024 08:18:46 INFO 140585769518912] Loss (name: value) kld: 0.21109104727355527
[11/25/2024 08:18:46 INFO 140585769518912] Loss (name: value) recons: 7.6213479127122765
[11/25/2024 08:18:46 INFO 140585769518912] Loss (name: value) logppx: 7.832438974873001
[11/25/2024 08:18:46 INFO 140585769518912] #quality_metric: host=algo-1, epoch=40, train total_loss <loss>=7.832438974873001
[2024-11-25 08:18:46.823] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 119, "duration": 137, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:46 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:46 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:46 INFO 140585769518912] Loss (name: value) total: 8.455599584334935
[11/25/2024 08:18:46 INFO 140585769518912] Loss (name: value) kld: 0.1839231931246244
[11/25/2024 08:18:46 INFO 140585769518912] Loss (name: value) recons: 8.271676440116687
[11/25/2024 08:18:46 INFO 140585769518912] Loss (name: value) logppx: 8.455599584334935
[11/25/2024 08:18:46 INFO 140585769518912] #validation_score (40): 8.455599584334935
[11/25/2024 08:18:46 INFO 140585769518912] patience losses:[8.475882584009415, 8.46811046111278
1, 8.470429131923577, 8.465345216408753, 8.469520216721754] min patience loss:8.465345216408753
current loss:8.455599584334935 absolute loss difference:0.009745632073817845
[11/25/2024 08:18:46 INFO 140585769518912] Timing: train: 1.94s, val: 0.14s, epoch: 2.08s
[11/25/2024 08:18:46 INFO 140585769518912] #progress_metric: host=algo-1, completed 26.666666666666668 % of epochs
#metrics {"StartTime": 1732522724.7434504, "EndTime": 1732522726.8282375, "Dimensions": {"Algori

thm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 39, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 85040.0, "count": 1, "min": 85040, "max": 85040}, "Total Batches Seen": {"sum": 2840.0, "count": 1, "min": 2840, "max": 2840}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 80.0, "count": 1, "min": 80, "max": 80}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:46 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=1019.7045944448219 records/second
[11/25/2024 08:18:46 INFO 140585769518912]
[11/25/2024 08:18:46 INFO 140585769518912] # Starting training for epoch 41
[2024-11-25 08:18:48.820] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 122, "duration": 1991, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:48 INFO 140585769518912] # Finished training epoch 41 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:48 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:48 INFO 140585769518912] Loss (name: value) total: 7.82531240400574
[11/25/2024 08:18:48 INFO 140585769518912] Loss (name: value) kld: 0.2136580038518413
[11/25/2024 08:18:48 INFO 140585769518912] Loss (name: value) recons: 7.611654405190911
[11/25/2024 08:18:48 INFO 140585769518912] Loss (name: value) logppx: 7.82531240400574
[11/25/2024 08:18:48 INFO 140585769518912] #quality_metric: host=algo-1, epoch=41, train total_loss <loss>=7.82531240400574
[2024-11-25 08:18:48.969] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 122, "duration": 147, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:48 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:48 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:48 INFO 140585769518912] Loss (name: value) total: 8.458394720615484
[11/25/2024 08:18:48 INFO 140585769518912] Loss (name: value) kld: 0.19118817158234425
[11/25/2024 08:18:48 INFO 140585769518912] Loss (name: value) recons: 8.267206475673579
[11/25/2024 08:18:48 INFO 140585769518912] Loss (name: value) logppx: 8.458394720615484
[11/25/2024 08:18:48 INFO 140585769518912] #validation_score (41): 8.458394720615484
[11/25/2024 08:18:48 INFO 140585769518912] patience losses:[8.468110461112781, 8.47042913192357, 8.465345216408753, 8.469520216721754, 8.455599584334935] min patience loss:8.455599584334935 current loss:8.458394720615484 absolute loss difference:0.0027951362805485047
[11/25/2024 08:18:48 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count: 1
[11/25/2024 08:18:48 INFO 140585769518912] Timing: train: 1.99s, val: 0.15s, epoch: 2.14s
[11/25/2024 08:18:48 INFO 140585769518912] #progress_metric: host=algo-1, completed 27.333333333333332 % of epochs
#metrics {"StartTime": 1732522726.8285167, "EndTime": 1732522728.9705677, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 40, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 87166.0, "count": 1, "min": 87166, "max": 87166}, "Total Batches Seen": {"sum": 2911.0, "count": 1, "min": 2911, "max": 2911}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 82.0, "count": 1, "min": 82, "max": 82}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:48 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=992.4427650019054 records/second
[11/25/2024 08:18:48 INFO 140585769518912]
[11/25/2024 08:18:48 INFO 140585769518912] # Starting training for epoch 42
[2024-11-25 08:18:50.893] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 125, "duration": 1921, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:50 INFO 140585769518912] # Finished training epoch 42 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:50 INFO 140585769518912] Metrics for Training:

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[11/25/2024 08:18:50 INFO 140585769518912] Loss (name: value) total: 7.816518033166447
[11/25/2024 08:18:50 INFO 140585769518912] Loss (name: value) kld: 0.21253523748245598
[11/25/2024 08:18:50 INFO 140585769518912] Loss (name: value) recons: 7.60398280900409
[11/25/2024 08:18:50 INFO 140585769518912] Loss (name: value) logppx: 7.816518033166447
[11/25/2024 08:18:50 INFO 140585769518912] #quality_metric: host=algo-1, epoch=42, train total_l
oss <loss>=7.816518033166447
[2024-11-25 08:18:51.005] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 125, "duration": 110, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:51 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:51 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:51 INFO 140585769518912] Loss (name: value) total: 8.443158428485576
[11/25/2024 08:18:51 INFO 140585769518912] Loss (name: value) kld: 0.17851505157275077
[11/25/2024 08:18:51 INFO 140585769518912] Loss (name: value) recons: 8.264643233861678
[11/25/2024 08:18:51 INFO 140585769518912] Loss (name: value) logppx: 8.443158428485576
[11/25/2024 08:18:51 INFO 140585769518912] #validation_score (42): 8.443158428485576
[11/25/2024 08:18:51 INFO 140585769518912] patience losses:[8.470429131923577, 8.46534521640875
3, 8.469520216721754, 8.455599584334935, 8.458394720615484] min patience loss:8.455599584334935
current loss:8.443158428485576 absolute loss difference:0.01244115584935912
[11/25/2024 08:18:51 INFO 140585769518912] Timing: train: 1.92s, val: 0.11s, epoch: 2.04s
[11/25/2024 08:18:51 INFO 140585769518912] #progress_metric: host=algo-1, completed 28.0 % of ep
ochs
#metrics {"StartTime": 1732522728.970941, "EndTime": 1732522731.0084746, "Dimensions": {"Algorit
hm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 41, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 89292.0, "count": 1, "min": 89292, "max": 8929
2}, "Total Batches Seen": {"sum": 2982.0, "count": 1, "min": 2982, "max": 2982}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 84.0, "cou
nt": 1, "min": 84, "max": 84}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:18:51 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=104
3.3625001506466 records/second
[11/25/2024 08:18:51 INFO 140585769518912]
[11/25/2024 08:18:51 INFO 140585769518912] # Starting training for epoch 43
[2024-11-25 08:18:52.872] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 128, "duration": 1863, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:52 INFO 140585769518912] # Finished training epoch 43 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:52 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:52 INFO 140585769518912] Loss (name: value) total: 7.814932408579079
[11/25/2024 08:18:52 INFO 140585769518912] Loss (name: value) kld: 0.21346515724916412
[11/25/2024 08:18:52 INFO 140585769518912] Loss (name: value) recons: 7.601467207787742
[11/25/2024 08:18:52 INFO 140585769518912] Loss (name: value) logppx: 7.814932408579079
[11/25/2024 08:18:52 INFO 140585769518912] #quality_metric: host=algo-1, epoch=43, train total_l
oss <loss>=7.814932408579079
[2024-11-25 08:18:52.994] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 128, "duration": 120, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:52 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:52 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:52 INFO 140585769518912] Loss (name: value) total: 8.461282035632012
[11/25/2024 08:18:52 INFO 140585769518912] Loss (name: value) kld: 0.1891405606881166
[11/25/2024 08:18:52 INFO 140585769518912] Loss (name: value) recons: 8.272141520182291
[11/25/2024 08:18:52 INFO 140585769518912] Loss (name: value) logppx: 8.461282035632012
[11/25/2024 08:18:52 INFO 140585769518912] #validation_score (43): 8.461282035632012
[11/25/2024 08:18:52 INFO 140585769518912] patience losses:[8.465345216408753, 8.46952021672175
4, 8.455599584334935, 8.458394720615484, 8.443158428485576] min patience loss:8.443158428485576
current loss:8.461282035632012 absolute loss difference:0.01812360714643546
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[11/25/2024 08:18:52 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count: 1
[11/25/2024 08:18:52 INFO 140585769518912] Timing: train: 1.86s, val: 0.12s, epoch: 1.99s
[11/25/2024 08:18:52 INFO 140585769518912] #progress_metric: host=algo-1, completed 28.666666666666668 % of epochs
#metrics {"StartTime": 1732522731.0086606, "EndTime": 1732522732.9956348, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 42, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 91418.0, "count": 1, "min": 91418, "max": 91418}, "Total Batches Seen": {"sum": 3053.0, "count": 1, "min": 3053, "max": 3053}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 86.0, "count": 1, "min": 86, "max": 86}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:52 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=1069.9109349261491 records/second
[11/25/2024 08:18:52 INFO 140585769518912]
[11/25/2024 08:18:52 INFO 140585769518912] # Starting training for epoch 44
[2024-11-25 08:18:54.953] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 131, "duration": 1957, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:54 INFO 140585769518912] # Finished training epoch 44 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:18:54 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:54 INFO 140585769518912] Loss (name: value) total: 7.80816269995461
[11/25/2024 08:18:54 INFO 140585769518912] Loss (name: value) kld: 0.21577201997730094
[11/25/2024 08:18:54 INFO 140585769518912] Loss (name: value) recons: 7.592390642479552
[11/25/2024 08:18:54 INFO 140585769518912] Loss (name: value) logppx: 7.80816269995461
[11/25/2024 08:18:54 INFO 140585769518912] #quality_metric: host=algo-1, epoch=44, train total_loss <loss>=7.80816269995461
[2024-11-25 08:18:55.097] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 131, "duration": 141, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:55 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:18:55 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:55 INFO 140585769518912] Loss (name: value) total: 8.453645911583534
[11/25/2024 08:18:55 INFO 140585769518912] Loss (name: value) kld: 0.18971181893960024
[11/25/2024 08:18:55 INFO 140585769518912] Loss (name: value) recons: 8.263934208796574
[11/25/2024 08:18:55 INFO 140585769518912] Loss (name: value) logppx: 8.453645911583534
[11/25/2024 08:18:55 INFO 140585769518912] #validation_score (44): 8.453645911583534
[11/25/2024 08:18:55 INFO 140585769518912] patience losses:[8.469520216721754, 8.455599584334935, 8.458394720615484, 8.443158428485576, 8.461282035632012] min patience loss:8.443158428485576 current loss:8.453645911583534 absolute loss difference:0.01048748309795755
[11/25/2024 08:18:55 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count: 2
[11/25/2024 08:18:55 INFO 140585769518912] Timing: train: 1.96s, val: 0.14s, epoch: 2.10s
[11/25/2024 08:18:55 INFO 140585769518912] #progress_metric: host=algo-1, completed 29.333333333333332 % of epochs
#metrics {"StartTime": 1732522732.9958467, "EndTime": 1732522735.0981684, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 43, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 93544.0, "count": 1, "min": 93544, "max": 93544}, "Total Batches Seen": {"sum": 3124.0, "count": 1, "min": 3124, "max": 3124}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 88.0, "count": 1, "min": 88, "max": 88}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:18:55 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=1011.2104423629493 records/second
[11/25/2024 08:18:55 INFO 140585769518912]

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[11/25/2024 08:18:55 INFO 140585769518912] # Starting training for epoch 45
[2024-11-25 08:18:57.077] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 134, "duration": 1978, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:57 INFO 140585769518912] # Finished training epoch 45 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:57 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:57 INFO 140585769518912] Loss (name: value) total: 7.801339607059676
[11/25/2024 08:18:57 INFO 140585769518912] Loss (name: value) kld: 0.213627372661107
[11/25/2024 08:18:57 INFO 140585769518912] Loss (name: value) recons: 7.587712226115482
[11/25/2024 08:18:57 INFO 140585769518912] Loss (name: value) logppx: 7.801339607059676
[11/25/2024 08:18:57 INFO 140585769518912] #quality_metric: host=algo-1, epoch=45, train total_l
oss <loss>=7.801339607059676
[2024-11-25 08:18:57.188] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 134, "duration": 109, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:57 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:57 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:18:57 INFO 140585769518912] Loss (name: value) total: 8.444342314891326
[11/25/2024 08:18:57 INFO 140585769518912] Loss (name: value) kld: 0.1885515958834917
[11/25/2024 08:18:57 INFO 140585769518912] Loss (name: value) recons: 8.25579082782452
[11/25/2024 08:18:57 INFO 140585769518912] Loss (name: value) logppx: 8.444342314891326
[11/25/2024 08:18:57 INFO 140585769518912] #validation_score (45): 8.444342314891326
[11/25/2024 08:18:57 INFO 140585769518912] patience losses:[8.455599584334935, 8.45839472061548
4, 8.443158428485576, 8.461282035632012, 8.453645911583534] min patience loss:8.443158428485576
current loss:8.444342314891326 absolute loss difference:0.0011838864057498455
[11/25/2024 08:18:57 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count:
3
[11/25/2024 08:18:57 INFO 140585769518912] Timing: train: 1.98s, val: 0.11s, epoch: 2.09s
[11/25/2024 08:18:57 INFO 140585769518912] #progress_metric: host=algo-1, completed 30.0 % of ep
ochs
#metrics {"StartTime": 1732522735.0983968, "EndTime": 1732522737.1890917, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 44, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 95670.0, "count": 1, "min": 95670, "max": 9567
0}, "Total Batches Seen": {"sum": 3195.0, "count": 1, "min": 3195, "max": 3195}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 90.0, "cou
nt": 1, "min": 90, "max": 90}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:18:57 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=101
6.8285651470686 records/second
[11/25/2024 08:18:57 INFO 140585769518912]
[11/25/2024 08:18:57 INFO 140585769518912] # Starting training for epoch 46
[2024-11-25 08:18:59.179] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 137, "duration": 1989, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:18:59 INFO 140585769518912] # Finished training epoch 46 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:18:59 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:18:59 INFO 140585769518912] Loss (name: value) total: 7.801379401695001
[11/25/2024 08:18:59 INFO 140585769518912] Loss (name: value) kld: 0.22013071064658007
[11/25/2024 08:18:59 INFO 140585769518912] Loss (name: value) recons: 7.581248653214862
[11/25/2024 08:18:59 INFO 140585769518912] Loss (name: value) logppx: 7.801379401695001
[11/25/2024 08:18:59 INFO 140585769518912] #quality_metric: host=algo-1, epoch=46, train total_l
oss <loss>=7.801379401695001
[2024-11-25 08:18:59.310] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 137, "duration": 129, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:18:59 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:18:59 INFO 140585769518912] Metrics for Inference:
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[11/25/2024 08:18:59 INFO 140585769518912] Loss (name: value) total: 8.452487260867388
[11/25/2024 08:18:59 INFO 140585769518912] Loss (name: value) kld: 0.19285939045441455
[11/25/2024 08:18:59 INFO 140585769518912] Loss (name: value) recons: 8.259627865522337
[11/25/2024 08:18:59 INFO 140585769518912] Loss (name: value) logppx: 8.452487260867388
[11/25/2024 08:18:59 INFO 140585769518912] #validation_score (46): 8.452487260867388
[11/25/2024 08:18:59 INFO 140585769518912] patience losses:[8.458394720615484, 8.44315842848557
6, 8.461282035632012, 8.453645911583534, 8.444342314891326] min patience loss:8.443158428485576
current loss:8.452487260867388 absolute loss difference:0.00932883238181148
[11/25/2024 08:18:59 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count:
4
[11/25/2024 08:18:59 INFO 140585769518912] Timing: train: 1.99s, val: 0.13s, epoch: 2.12s
[11/25/2024 08:18:59 INFO 140585769518912] #progress_metric: host=algo-1, completed 30.666666666
666668 % of epochs
#metrics {"StartTime": 1732522737.189315, "EndTime": 1732522739.3115447, "Dimensions": {"Algorit
hm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 45, "Meta": "training_data_i
ter"}, "Metrics": {"Total Records Seen": {"sum": 97796.0, "count": 1, "min": 97796, "max": 9779
6}, "Total Batches Seen": {"sum": 3266.0, "count": 1, "min": 3266, "max": 3266}, "Max Records Se
en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Bet
ween Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 92.0, "cou
nt": 1, "min": 92, "max": 92}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1,
"min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "mi
n": 71, "max": 71}}}
[11/25/2024 08:18:59 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=100
1.7200274237318 records/second
[11/25/2024 08:18:59 INFO 140585769518912]
[11/25/2024 08:18:59 INFO 140585769518912] # Starting training for epoch 47
[2024-11-25 08:19:01.293] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/tr
ain", "epoch": 140, "duration": 1981, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:19:01 INFO 140585769518912] # Finished training epoch 47 on 2126 examples from 71
batches, each of size 30.
[11/25/2024 08:19:01 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:19:01 INFO 140585769518912] Loss (name: value) total: 7.789839559205821
[11/25/2024 08:19:01 INFO 140585769518912] Loss (name: value) kld: 0.21336493951054247
[11/25/2024 08:19:01 INFO 140585769518912] Loss (name: value) recons: 7.576474600778499
[11/25/2024 08:19:01 INFO 140585769518912] Loss (name: value) logppx: 7.789839559205821
[11/25/2024 08:19:01 INFO 140585769518912] #quality_metric: host=algo-1, epoch=47, train total_l
oss <loss>=7.789839559205821
[2024-11-25 08:19:01.401] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/va
lidation", "epoch": 140, "duration": 106, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:19:01 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, eac
h of size 30.
[11/25/2024 08:19:01 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:19:01 INFO 140585769518912] Loss (name: value) total: 8.448792051657652
[11/25/2024 08:19:01 INFO 140585769518912] Loss (name: value) kld: 0.1910579705849672
[11/25/2024 08:19:01 INFO 140585769518912] Loss (name: value) recons: 8.257734093299279
[11/25/2024 08:19:01 INFO 140585769518912] Loss (name: value) logppx: 8.448792051657652
[11/25/2024 08:19:01 INFO 140585769518912] #validation_score (47): 8.448792051657652
[11/25/2024 08:19:01 INFO 140585769518912] patience losses:[8.443158428485576, 8.46128203563201
2, 8.453645911583534, 8.444342314891326, 8.452487260867388] min patience loss:8.443158428485576
current loss:8.448792051657652 absolute loss difference:0.005633623172075275
[11/25/2024 08:19:01 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count:
5
[11/25/2024 08:19:01 INFO 140585769518912] Timing: train: 1.98s, val: 0.11s, epoch: 2.09s
[11/25/2024 08:19:01 INFO 140585769518912] #progress_metric: host=algo-1, completed 31.333333333
333332 % of epochs
#metrics {"StartTime": 1732522739.3118017, "EndTime": 1732522741.4023511, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 46, "Meta": "training_data_
iter"}, "Metrics": {"Total Records Seen": {"sum": 99922.0, "count": 1, "min": 99922, "max": 9992
2}, "Total Batches Seen": {"sum": 3337.0, "count": 1, "min": 3337, "max": 3337}, "Max Records Se

en Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 94.0, "count": 1, "min": 94, "max": 94}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:19:01 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=1016.9033586665187 records/second
[11/25/2024 08:19:01 INFO 140585769518912]
[11/25/2024 08:19:01 INFO 140585769518912] # Starting training for epoch 48

2024-11-25 08:19:10 Uploading - Uploading generated training model[2024-11-25 08:19:03.833] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/train", "epoch": 143, "duration": 2430, "num_examples": 71, "num_bytes": 833232}
[11/25/2024 08:19:03 INFO 140585769518912] # Finished training epoch 48 on 2126 examples from 71 batches, each of size 30.
[11/25/2024 08:19:03 INFO 140585769518912] Metrics for Training:
[11/25/2024 08:19:03 INFO 140585769518912] Loss (name: value) total: 7.7877302716035794
[11/25/2024 08:19:03 INFO 140585769518912] Loss (name: value) kld: 0.2171290958431405
[11/25/2024 08:19:03 INFO 140585769518912] Loss (name: value) recons: 7.570601213482064
[11/25/2024 08:19:03 INFO 140585769518912] Loss (name: value) logppx: 7.7877302716035794
[11/25/2024 08:19:03 INFO 140585769518912] #quality_metric: host=algo-1, epoch=48, train total_loss <loss>=7.7877302716035794
[2024-11-25 08:19:03.992] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 143, "duration": 157, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:19:03 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:19:03 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:19:03 INFO 140585769518912] Loss (name: value) total: 8.444275332719851
[11/25/2024 08:19:03 INFO 140585769518912] Loss (name: value) kld: 0.18151801549471341
[11/25/2024 08:19:03 INFO 140585769518912] Loss (name: value) recons: 8.262757169283354
[11/25/2024 08:19:03 INFO 140585769518912] Loss (name: value) logppx: 8.444275332719851
[11/25/2024 08:19:03 INFO 140585769518912] #validation_score (48): 8.444275332719851
[11/25/2024 08:19:03 INFO 140585769518912] patience losses:[8.461282035632012, 8.453645911583534, 8.444342314891326, 8.452487260867388, 8.448792051657652] min patience loss:8.444342314891326 current loss:8.444275332719851 absolute loss difference:6.698217147516061e-05
[11/25/2024 08:19:03 INFO 140585769518912] Bad epoch: loss has not improved (enough). Bad count: 6
[11/25/2024 08:19:03 INFO 140585769518912] Bad epochs exceeded patience. Stopping training early!
[11/25/2024 08:19:03 INFO 140585769518912] Timing: train: 2.43s, val: 0.16s, epoch: 2.59s
[11/25/2024 08:19:03 INFO 140585769518912] Early stop condition met. Stopping training.
[11/25/2024 08:19:03 INFO 140585769518912] #progress_metric: host=algo-1, completed 100 % epochs #metrics {"StartTime": 1732522741.402535, "EndTime": 1732522743.9938622, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training", "epoch": 47, "Meta": "training_data_iter"}, "Metrics": {"Total Records Seen": {"sum": 102048.0, "count": 1, "min": 102048, "max": 102048}, "Total Batches Seen": {"sum": 3408.0, "count": 1, "min": 3408, "max": 3408}, "Max Records Seen Between Resets": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Max Batches Seen Between Resets": {"sum": 71.0, "count": 1, "min": 71, "max": 71}, "Reset Count": {"sum": 96.0, "count": 1, "min": 96, "max": 96}, "Number of Records Since Last Reset": {"sum": 2126.0, "count": 1, "min": 2126, "max": 2126}, "Number of Batches Since Last Reset": {"sum": 71.0, "count": 1, "min": 71, "max": 71}}}
[11/25/2024 08:19:03 INFO 140585769518912] #throughput_metric: host=algo-1, train throughput=820.3880987981256 records/second
[2024-11-25 08:19:04.146] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 146, "duration": 149, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:19:04 INFO 140585769518912] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:19:04 INFO 140585769518912] Metrics for Inference:
[11/25/2024 08:19:04 INFO 140585769518912] Loss (name: value) total: 8.445610750638522

[11/25/2024 08:19:04 INFO 140585769518912] Loss (name: value) kld: 0.17169208710010236
[11/25/2024 08:19:04 INFO 140585769518912] Loss (name: value) recons: 8.27391866048177
[11/25/2024 08:19:04 INFO 140585769518912] Loss (name: value) logppx: 8.445610750638522
[11/25/2024 08:19:04 INFO 140585769518912] #quality_metric: host=algo-1, epoch=48, validation total_loss <loss>=8.445610750638522
[11/25/2024 08:19:04 INFO 140585769518912] Loss of server-side model: 8.445610750638522
[11/25/2024 08:19:04 INFO 140585769518912] Best model based on early stopping at epoch 42. Best loss: 8.443158428485576
[11/25/2024 08:19:04 INFO 140585769518912] Topics from epoch:final (num_topics:3) [wetc 0.19, tu 0.98]:
[11/25/2024 08:19:04 INFO 140585769518912] [0.15, 0.97] swap futures estoppel enforceable relied contained binding affiliates bnp affiliate instrument carr relevant wacker sont evidence author ses paribas solely
[11/25/2024 08:19:04 INFO 140585769518912] [0.33, 0.97] clicking web click chart sources represent message offer receive director material prohibited client phillip link august contained project accurate corp
[11/25/2024 08:19:04 INFO 140585769518912] [0.07, 1.00] tail yippee flip resource hookie coin sooo volunteer pending queue flipping mgr msa bidoffer approval sweet junior wearing pao playing
[11/25/2024 08:19:04 INFO 140585769518912] Serializing model to /opt/ml/model/model_algo-1
[11/25/2024 08:19:04 INFO 140585769518912] Saved checkpoint to "/tmp/tmp9hxdb8ix/state-0001.params"
[11/25/2024 08:19:04 INFO 140585769518912] Test data is not provided.
#metrics {"StartTime": 1732522621.0584395, "EndTime": 1732522744.1643972, "Dimensions": {"Algorithm": "AWS/NTM", "Host": "algo-1", "Operation": "training"}, "Metrics": {"initialize.time": {"sum": 10560.433626174927, "count": 1, "min": 10560.433626174927, "max": 10560.433626174927}, "epochs": {"sum": 150.0, "count": 1, "min": 150, "max": 150}, "model.score.time": {"sum": 6361.997365951538, "count": 49, "min": 107.4216365814209, "max": 172.55663871765137}, "early_stop.time": {"sum": 6294.5921421051025, "count": 48, "min": 107.75899887084961, "max": 175.2631664276123}, "update.time": {"sum": 112348.21891784668, "count": 48, "min": 1986.8662357330322, "max": 3276.602268218994}, "finalize.time": {"sum": 164.81375694274902, "count": 1, "min": 164.81375694274902, "max": 164.81375694274902}, "model.serialize.time": {"sum": 3.8805007934570312, "count": 1, "min": 3.8805007934570312, "max": 3.8805007934570312}, "setuptime": {"sum": 54.369449615478516, "count": 1, "min": 54.369449615478516, "max": 54.369449615478516}, "totaltime": {"sum": 123185.72664260864, "count": 1, "min": 123185.72664260864, "max": 123185.72664260864}}}
[2024-11-25 08:19:04.135] [tensorio] [info] epoch_stats={"data_pipeline": "/opt/ml/input/data/validation", "epoch": 143, "duration": 139, "num_examples": 14, "num_bytes": 125284}
[11/25/2024 08:19:04 INFO 140341878044480] Finished scoring on 390 examples from 13 batches, each of size 30.
[11/25/2024 08:19:04 INFO 140341878044480] Metrics for Inference:
[11/25/2024 08:19:04 INFO 140341878044480] Loss (name: value) total: 8.434114348582732
[11/25/2024 08:19:04 INFO 140341878044480] Loss (name: value) kld: 0.17169208710010236
[11/25/2024 08:19:04 INFO 140341878044480] Loss (name: value) recons: 8.262422219300882
[11/25/2024 08:19:04 INFO 140341878044480] Loss (name: value) logppx: 8.434114348582732
[11/25/2024 08:19:04 INFO 140341878044480] #quality_metric: host=algo-2, epoch=47, validation total_loss <loss>=8.434114348582732
[11/25/2024 08:19:04 INFO 140341878044480] Loss of server-side model: 8.434114348582732
[11/25/2024 08:19:04 INFO 140341878044480] Best model based on early stopping at epoch 47. Best loss: 8.434114348582732
[11/25/2024 08:19:04 INFO 140341878044480] Topics from epoch:final (num_topics:3) [wetc 0.16, tu 1.00]:
[11/25/2024 08:19:04 INFO 140341878044480] [0.10, 1.00] swap futures bnp contained sont estoppel enforceable instrument ses relied paribas wacker hub binding affiliates carr affiliate author sitting aug03
[11/25/2024 08:19:04 INFO 140341878044480] [0.30, 1.00] clicking web click represent sources chart message prohibited director receive instruction client phillip material august accurate solicitation offer corp link
[11/25/2024 08:19:04 INFO 140341878044480] [0.07, 1.00] yippee tail flip hookie resource sooo volunteer pending msa queue mgr coin sweet junior wearing approval flipping bidoffer pao league
[11/25/2024 08:19:04 INFO 140341878044480] Serializing model to /opt/ml/model/model_algo-2

```
[11/25/2024 08:19:04 INFO 140341878044480] Saved checkpoint to "/tmp/tmpkvyxt2eg/state-0001.para
ms"
[11/25/2024 08:19:04 INFO 140341878044480] Test data is not provided.
#metrics {"StartTime": 1732522620.8432927, "EndTime": 1732522744.1579876, "Dimensions": {"Algori
thm": "AWS/NTM", "Host": "algo-2", "Operation": "training"}, "Metrics": {"initialize.time": {"su
m": 10778.23781967163, "count": 1, "min": 10778.23781967163, "max": 10778.23781967163}, "epoch
s": {"sum": 150.0, "count": 1, "min": 150, "max": 150}, "model.score.time": {"sum": 7505.5077075
95825, "count": 48, "min": 121.28925323486328, "max": 197.5710391998291}, "early_stop.time": {"s
um": 7425.658464431763, "count": 47, "min": 124.48740005493164, "max": 197.75700569152832}, "upd
ate.time": {"sum": 67394.36793327332, "count": 47, "min": 1331.007719039917, "max": 1946.1092948
913574}, "finalize.time": {"sum": 158.32161903381348, "count": 1, "min": 158.32161903381348, "ma
x": 158.32161903381348}, "model.serialize.time": {"sum": 3.3936500549316406, "count": 1, "min":
3.3936500549316406, "max": 3.3936500549316406}, "setuptime": {"sum": 49.31950569152832, "count":
1, "min": 49.31950569152832, "max": 49.31950569152832}, "totaltime": {"sum": 123382.44128227234,
"count": 1, "min": 123382.44128227234, "max": 123382.44128227234}}}

2024-11-25 08:19:23 Completed - Training job completed
Training seconds: 764
Billable seconds: 764
```

In [67]:
```
print('Training job name: {}'.format(ntm_estmtr.latest_training_job.job_name))
```

```
Training job name: ntm-2024-11-25-08-12-09-791
```

Model Hosting and Inference

In [68]:
```
#You can either deploy the trained model using sagemaker estimator object or create a sagemaker e

ntm_predctr = ntm_estmtr.deploy(initial_instance_count=1, instance_type='ml.m4.xlarge')

# OR

# current_job_name = 'ntm-2019-09-02-00-11-12-089'
# model_path = os.path.join('s3://', bucket, output_prefix, current_job_name, 'output/model.tar.g
# # ntm_model = Model(model_data=model_path, image=container, role=role, sagemaker_session=sess)
# # Correct the Model initialization
# ntm_model = Model(
#     model_data=model_path,
#     image_uri=container,  # Use image_uri instead of image
#     role=role,
#     sagemaker_session=sess
# )
# ntm_model.deploy(initial_instance_count=1, instance_type='ml.m4.xlarge')
# ntm_predctr = sagemaker.predictor.RealTimePredictor(
#     ntm_model.endpoint_name,
#     sagemaker_session=sess
#      )
# Set up the predictor
ntm_predctr = sagemaker.predictor.Predictor(
    ntm_model.endpoint_name,
    sagemaker_session=sess
)
```

```
INFO:sagemaker:Creating model with name: ntm-2024-11-25-08-21-23-792
INFO:sagemaker:Creating endpoint-config with name ntm-2024-11-25-08-21-23-792
INFO:sagemaker:Creating endpoint with name ntm-2024-11-25-08-21-23-792
--------------!
```

In [69]:
```
print('Endpoint name: {}'.format(ntm_model.endpoint_name))
```

```
Endpoint name: None
```

Inference with CSV

In [70]:
```
ntm_predctr.content_type = 'text/csv'
ntm_predctr.serializer = CSVSerializer()
ntm_predctr.deserializer = JSONDeserializer()
```

In [86]:
```
#Convert test vectors from compressed sparse matrix to dense matrix
if issparse(test_data):
    test_data = np.array(test_data.todense())
else:
    test_data = np.array(test_data)

print(type(test_data))
```

```
<class 'numpy.ndarray'>
```

In [77]:
```
endpoint_name = "ntm-2024-11-25-08-21-23-792"
ntm_predctr = Predictor(endpoint_name=endpoint_name)
```

In [78]:
```
print(ntm_predctr.endpoint_name)
```

```
ntm-2024-11-25-08-21-23-792
```

In [81]:
```
# Convert NumPy array to CSV string
csv_buffer = io.StringIO()
np.savetxt(csv_buffer, test_data[1:6], delimiter=",")
serialized_data = csv_buffer.getvalue()
```

In [84]:
```
results = ntm_predctr.predict(
    serialized_data.encode("utf-8"),
    initial_args={"ContentType": "text/csv"}
)
print(results)
```

```
b'{"predictions":[{"topic_weights":[0.067165561,0.8087602258,0.1240743324]},{"topic_weights":[0.
0712335706,0.8568163514,0.0719500855]},{"topic_weights":[0.0630796179,0.8224505782,0.114469751
7]},{"topic_weights":[0.1324665844,0.6991248727,0.1684084982]},{"topic_weights":[0.1265615821,0.
7397805452,0.133657977]}]}'
```

In [ ]:
```
# ntm_predctr.accept = ["text/csv"]
# results = ntm_predctr.predict(test_data[1:6])
# print(results)
```

In [88]:
```
print(type(results))
```

```
<class 'bytes'>
```

In [90]:
```
decoded_results = results.decode("utf-8")
print(decoded_results)
```

```
{"predictions":[{"topic_weights":[0.067165561,0.8087602258,0.1240743324]},{"topic_weights":[0.07
12335706,0.8568163514,0.0719500855]},{"topic_weights":[0.0630796179,0.8224505782,0.1144697517]},
{"topic_weights":[0.1324665844,0.6991248727,0.1684084982]},{"topic_weights":[0.1265615821,0.7397
805452,0.133657977]}]}
```

In [91]:
```
parsed_results = json.loads(decoded_results)
print(parsed_results)
```

```
{'predictions': [{'topic_weights': [0.067165561, 0.8087602258, 0.1240743324]}, {'topic_weights':
[0.0712335706, 0.8568163514, 0.0719500855]}, {'topic_weights': [0.0630796179, 0.8224505782, 0.11
44697517]}, {'topic_weights': [0.1324665844, 0.6991248727, 0.1684084982]}, {'topic_weights': [0.
1265615821, 0.7397805452, 0.133657977]}]}
```

In [ ]:
```
# topic_wts_res = np.array([prediction['topic_weights'] for prediction in results['predictions']]
# print(topic_wts_res)
```

In [92]:
```
topic_wts_res = np.array([prediction['topic_weights'] for prediction in parsed_results['predictio
print(topic_wts_res)
```

```
[[0.06716556 0.80876023 0.12407433]
 [0.07123357 0.85681635 0.07195009]
 [0.06307962 0.82245058 0.11446975]
 [0.13246658 0.69912487 0.1684085 ]
 [0.12656158 0.73978055 0.13365798]]
```

In [93]:
```
import matplotlib.pyplot as plt
%matplotlib inline

fnt_sz=14

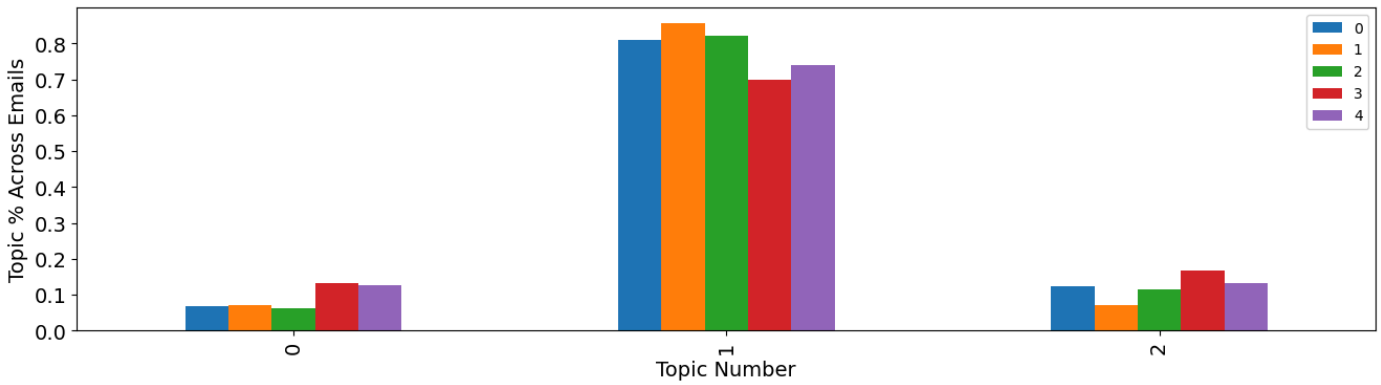
df_tpcwts=pd.DataFrame(topic_wts_res.T)

df_tpcwts.plot(kind='bar', figsize=(16,4), fontsize=fnt_sz)

plt.ylabel('Topic % Across Emails', fontsize=fnt_sz)
plt.xlabel('Topic Number', fontsize=fnt_sz)
```

```
INFO:matplotlib.font_manager:generated new fontManager
```

Out[93]:
```
Text(0.5, 0, 'Topic Number')
```



In [100…
```
model_data = "s3://ai620-in-aws/enronemails/output/ntm-2024-11-25-07-26-29-721/output/model.tar.g
model = Model(
    model_data=model_data,
    role="ecsInstanceRole",
    image_uri = "763104351884.dkr.ecr.us-east-1.amazonaws.com/ntm:latest"  # Specify the correct
)

endpoint_name = "my-ntm-endpoint"
predictor = model.deploy(initial_instance_count=1, instance_type="ml.m5.large", endpoint_name=en
```

```
INFO:sagemaker:Creating model with name: ntm-2024-11-25-09-15-50-543
```

```
---------------------------------------------------------------------------
ClientError                               Traceback (most recent call last)
Cell In[100], line 9
      2 model = Model(
      3     model_data=model_data,
      4     role="ecsInstanceRole",
      5     image_uri = "763104351884.dkr.ecr.us-east-1.amazonaws.com/ntm:latest"  # Specify the
correct image for your model
      6 )
      8 endpoint_name = "my-ntm-endpoint"
----> 9 predictor = model.deploy(initial_instance_count=1, instance_type="ml.m5.large", endpoint
_name=endpoint_name)

File ~/anaconda3/envs/python3/lib/python3.10/site-packages/sagemaker/model.py:1698, in Model.dep
loy(self, initial_instance_count, instance_type, serializer, deserializer, accelerator_type, end
point_name, tags, kms_key, wait, data_capture_config, async_inference_config, serverless_inferen
ce_config, volume_size, model_data_download_timeout, container_startup_health_check_timeout, inf
erence_recommendation_id, explainer_config, accept_eula, endpoint_logging, resources, endpoint_t
ype, managed_instance_scaling, inference_component_name, routing_config, model_reference_arn, **
kwargs)
   1695     return None
   1697 else:  # existing single model endpoint path
-> 1698     self._create_sagemaker_model(
   1699         instance_type=instance_type,
   1700         accelerator_type=accelerator_type,
   1701         tags=tags,
   1702         serverless_inference_config=serverless_inference_config,
   1703         accept_eula=accept_eula,
   1704         model_reference_arn=model_reference_arn,
   1705     )
   1706     serverless_inference_config_dict = (
   1707         serverless_inference_config._to_request_dict() if is_serverless else None
   1708     )
   1709     production_variant = sagemaker.production_variant(
   1710         self.name,
   1711         instance_type,
   (...)
   1718         routing_config=routing_config,
   1719     )

File ~/anaconda3/envs/python3/lib/python3.10/site-packages/sagemaker/model.py:980, in Model._cre
ate_sagemaker_model(self, instance_type, accelerator_type, tags, serverless_inference_config, ac
cept_eula, model_reference_arn)
    966 self.env = resolve_nested_dict_value_from_config(
    967     self.env,
    968     ["Environment"],
    969     MODEL_CONTAINERS_PATH,
    970     sagemaker_session=self.sagemaker_session,
    971 )
    972 create_model_args = dict(
    973     name=self.name,
    974     role=self.role,
   (...)
    978     tags=format_tags(tags),
    979 )
--> 980 self.sagemaker_session.create_model(**create_model_args)

File ~/anaconda3/envs/python3/lib/python3.10/site-packages/sagemaker/session.py:4040, in Sessio
n.create_model(self, name, role, container_defs, vpc_config, enable_network_isolation, primary_c
```

```
ontainer, tags)
   4037         else:
   4038             raise
-> 4040 self._intercept_create_request(create_model_request, submit, self.create_model.__name__)
   4041 return name

File ~/anaconda3/envs/python3/lib/python3.10/site-packages/sagemaker/session.py:6606, in Sessio
n._intercept_create_request(self, request, create, func_name)
   6589 def _intercept_create_request(
   6590     self,
   6591     request: typing.Dict,
   (...)
   6594     # pylint: disable=unused-argument
   6595 ):
   6596     """This function intercepts the create job request.
   6597
   6598     PipelineSession inherits this Session class and will override
   (...)
   6604         func_name (str): the name of the function needed intercepting
   6605     """
-> 6606     return create(request)

File ~/anaconda3/envs/python3/lib/python3.10/site-packages/sagemaker/session.py:4028, in Sessio
n.create_model.<locals>.submit(request)
   4026 logger.debug("CreateModel request: %s", json.dumps(request, indent=4))
   4027 try:
-> 4028     self.sagemaker_client.create_model(**request)
   4029 except ClientError as e:
   4030     error_code = e.response["Error"]["Code"]

File ~/anaconda3/envs/python3/lib/python3.10/site-packages/botocore/client.py:569, in ClientCrea
tor._create_api_method.<locals>._api_call(self, *args, **kwargs)
    565     raise TypeError(
    566         f"{py_operation_name}() only accepts keyword arguments."
    567     )
    568 # The "self" in this scope is referring to the BaseClient.
--> 569 return self._make_api_call(operation_name, kwargs)

File ~/anaconda3/envs/python3/lib/python3.10/site-packages/botocore/client.py:1023, in BaseClien
t._make_api_call(self, operation_name, api_params)
   1019     error_code = error_info.get("QueryErrorCode") or error_info.get(
   1020         "Code"
   1021     )
   1022     error_class = self.exceptions.from_code(error_code)
-> 1023     raise error_class(parsed_response, operation_name)
   1024 else:
   1025     return parsed_response

ClientError: An error occurred (ValidationException) when calling the CreateModel operation: The
repository of your image 763104351884.dkr.ecr.us-east-1.amazonaws.com/ntm:latest does not grant
ecr:GetDownloadUrlForLayer, ecr:BatchGetImage, ecr:BatchCheckLayerAvailability permission to sag
emaker.amazonaws.com service principal.
```

Creating Word Cloud from Trained Model

In [39]:

```
!pip install mxnet
!pip install wordcloud
```

```
import wordcloud as wc
import mxnet as mx
```

```
Collecting mxnet
  Downloading https://files.pythonhosted.org/packages/50/08/186a7d67998f1e38d6d853c71c149820983c
547804348f06727f552df20d/mxnet-1.5.0-py2.py3-none-manylinux1_x86_64.whl (25.4MB)
    100% |████████████████████████████████| 25.4MB 1.7MB/s eta 0:00:01
Collecting graphviz<0.9.0,>=0.8.1 (from mxnet)
  Downloading https://files.pythonhosted.org/packages/53/39/4ab213673844e0c004bed8a0781a0721a3f6
bb23eb8854ee75c236428892/graphviz-0.8.4-py2.py3-none-any.whl
Requirement already satisfied: requests<3,>=2.20.0 in /home/ec2-user/anaconda3/envs/python3/lib/
python3.6/site-packages (from mxnet) (2.20.0)
Collecting numpy<2.0.0,>1.16.0 (from mxnet)
  Downloading https://files.pythonhosted.org/packages/75/92/57179ed45307ec6179e344231c47da7f3f3d
a9e2eee5c8ab506bd279ce4e/numpy-1.17.1-cp36-cp36m-manylinux1_x86_64.whl (20.4MB)
    100% |████████████████████████████████| 20.4MB 2.9MB/s eta 0:00:01
Requirement already satisfied: certifi>=2017.4.17 in /home/ec2-user/anaconda3/envs/python3/lib/p
ython3.6/site-packages (from requests<3,>=2.20.0->mxnet) (2019.6.16)
Requirement already satisfied: chardet<3.1.0,>=3.0.2 in /home/ec2-user/anaconda3/envs/python3/li
b/python3.6/site-packages (from requests<3,>=2.20.0->mxnet) (3.0.4)
Requirement already satisfied: idna<2.8,>=2.5 in /home/ec2-user/anaconda3/envs/python3/lib/pytho
n3.6/site-packages (from requests<3,>=2.20.0->mxnet) (2.6)
Requirement already satisfied: urllib3<1.25,>=1.21.1 in /home/ec2-user/anaconda3/envs/python3/li
b/python3.6/site-packages (from requests<3,>=2.20.0->mxnet) (1.23)
Installing collected packages: graphviz, numpy, mxnet
  Found existing installation: numpy 1.14.3
    Uninstalling numpy-1.14.3:
      Successfully uninstalled numpy-1.14.3
Successfully installed graphviz-0.8.4 mxnet-1.5.0 numpy-1.17.1
You are using pip version 10.0.1, however version 19.2.3 is available.
You should consider upgrading via the 'pip install --upgrade pip' command.
Collecting wordcloud
  Downloading https://files.pythonhosted.org/packages/ae/af/849edf14d573eba9c8082db898ff0d090428
d9485371cc4fe21a66717ad2/wordcloud-1.5.0-cp36-cp36m-manylinux1_x86_64.whl (361kB)
    100% |████████████████████████████████| 368kB 24.8MB/s ta 0:00:01
Requirement already satisfied: numpy>=1.6.1 in /home/ec2-user/anaconda3/envs/python3/lib/python
3.6/site-packages (from wordcloud) (1.17.1)
Requirement already satisfied: pillow in /home/ec2-user/anaconda3/envs/python3/lib/python3.6/sit
e-packages (from wordcloud) (5.2.0)
Installing collected packages: wordcloud
Successfully installed wordcloud-1.5.0
You are using pip version 10.0.1, however version 19.2.3 is available.
You should consider upgrading via the 'pip install --upgrade pip' command.
```

In [36]:
```
#Determine the location of the model output
current_job_name = ntm_estmtr.latest_training_job.job_name

model_path = os.path.join(output_prefix, current_job_name, 'output/model.tar.gz')
model_path
```

Out[36]:
```
'enronemails/output/ntm-2019-04-09-17-24-19-713/output/model.tar.gz'
```

In [41]:
```
#Download the model
boto3.resource('s3').Bucket(bucket).download_file(model_path, 'downloaded_model.tar.gz')
```

In [42]:
```
#unzip the model output
!tar -xzvf 'downloaded_model.tar.gz'
```

```
model_algo-2
model_algo-1
```

In [43]:
```
!unzip -o model_algo-1
```

```
Archive:  model_algo-1
 extracting: meta.json
 extracting: symbol.json
 extracting: params
```

In [46]:
```
model_dict = mx.ndarray.load('params')
W = model_dict['arg:projection_weight']
```

In [41]:
```
# Retrieving word distributions for each of the latent topics
W
```

Out[41]:
```
[[-1.6004856 -2.60862   -1.9256244]
 [-1.5195873 -2.801778  -2.5669572]
 [-1.5795462 -2.8432672 -2.3337717]
 ...
 [-1.5052562 -2.8511627 -2.35806  ]
 [-1.5185319 -2.8104594 -2.4379675]
 [-1.5643051 -2.8513684 -2.3724968]]
<NDArray 17524x3 @cpu(0)>
```

In [47]:
```
# Create vocabulary list
vocab_list = pd.read_table(vocab_op_fn, header=None)
vocab_list = vocab_list[0].tolist()
len(vocab_list)
```

Out[47]:
```
17524
```

In [48]:
```
#Iterate through the vocabulary list to create dictionary of key values for each of the words in
word_to_id = {}

for i, v in enumerate(vocab_list):
    #print("Index and Value", i, v)
    word_to_id[v] = i

limit = 24
n_col = 4
counter = 0
```

In [50]:
```
word_to_id
```

Out[50]:

```
{'aaa': 0,
 'aactive': 1,
 'aadvantage': 2,
 'aaron': 3,
 'aarp': 4,
 'aba': 5,
 'abacus': 6,
 'abandon': 7,
 'abandoned': 8,
 'abandoning': 9,
 'abated': 10,
 'abb': 11,
 'abbott': 12,
 'abbreviated': 13,
 'abbreviation': 14,
 'abc': 15,
 'abel': 16,
 'aberration': 17,
 'abide': 18,
 'abilene': 19,
 'abilities': 20,
 'ability': 21,
 'able': 22,
 'abn': 23,
 'aboard': 24,
 'abolish': 25,
 'abolishing': 26,
 'abound': 27,
 'abovemarket': 28,
 'abraham': 29,
 'abreast': 30,
 'abroad': 31,
 'abrogate': 32,
 'abrupt': 33,
 'abruptly': 34,
 'absence': 35,
 'absences': 36,
 'absent': 37,
 'absentee': 38,
 'absolute': 39,
 'absolutely': 40,
 'absorb': 41,
 'absorbed': 42,
 'absorbing': 43,
 'abstract': 44,
 'abt': 45,
 'abundance': 46,
 'abundant': 47,
 'abuse': 48,
 'abuses': 49,
 'academia': 50,
 'academic': 51,
 'academy': 52,
 'acc': 53,
 'accelerate': 54,
 'accelerated': 55,
 'accelerates': 56,
 'accelerating': 57,
 'acceleration': 58,
```

```
'accent': 59,
'accenture': 60,
'accept': 61,
'acceptable': 62,
'acceptance': 63,
'acceptances': 64,
'accepted': 65,
'accepting': 66,
'access': 67,
'accessed': 68,
'accessibility': 69,
'accessible': 70,
'accessing': 71,
'accessories': 72,
'accessory': 73,
'accident': 74,
'accidental': 75,
'accidentally': 76,
'acclaimed': 77,
'accolades': 78,
'accommodate': 79,
'accommodating': 80,
'accommodation': 81,
'accomodate': 82,
'accompanied': 83,
'accompany': 84,
'accompanying': 85,
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```

In [51]:
```
# For each of the topics synthesized, get the word distribution
plt.figure(figsize=(20,16))
```

```
for ind in range(num_topics):

    if counter >= limit:
        break

    title_str = 'Topic{}'.format(ind)

    #Use softmax function to assign probability for each of the word associated with the topic
    # The sum of all the probabilities of words associated with each topic should add up to 1
    pvals = mx.nd.softmax(mx.nd.array(W[:, ind])).asnumpy()
    #print("Printing pvals: ", len(pvals))

    word_freq = dict()
    for k in word_to_id.keys():
        i = word_to_id[k]
        word_freq[k] =pvals[i]

    wordcloud = wc.WordCloud(background_color='white').fit_words(word_freq)

    plt.subplot(limit // n_col, n_col, counter+1)
    plt.imshow(wordcloud, interpolation='bilinear')
    plt.axis("off")
    plt.title(title_str)
    #plt.close()

    counter +=1
```

In [ ]: