Model Definition and Model Training (Deep Neural Network)

This Notebook is for Normalised Dataset

Data Description

Field	Description
Date	Date of incident
Province/State	If there is a breakdown in states
Lat	Latitude
Lon	Longitude
Confirmed	Confirmed cases
Recovered	Recovered cases
Deaths	Death cases
Active	Active cases

Summary and Results

Result

Algorithm	MSE	RMSE	R2
Deep Neural Network	2.051	1.432	0.315

Import Libraries

In [1]:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import sklearn


%matplotlib inline
sns.set_style('darkgrid')
sns.set(font_scale=1.2)
#sets the default autosave frequency in seconds
%autosave 60

from sklearn.model_selection import cross_val_score, train_test_split, GridSearchCV, RandomizedSearchCV,Stra
from sklearn.preprocessing import LabelEncoder, StandardScaler, MinMaxScaler, OneHotEncoder
from sklearn.metrics import confusion_matrix, classification_report, mean_absolute_error, mean_squared_error
from sklearn.metrics import plot_confusion_matrix, plot_precision_recall_curve, plot_roc_curve, accuracy_sco
from sklearn.metrics import auc, f1_score, precision_score, recall_score, roc_auc_score

import tensorflow as tf
# from tensorflow import keras
# from tensorflow.keras.models import Sequential, save_model
# from tensorflow.keras.layers import Dense, Dropout, BatchNormalization, Activation
# from tensorflow.keras.wrappers.scikit_learn import KerasRegressor, KerasClassifier
# from tensorflow.keras.optimizers import Adam

#For ANN and DNN
import keras
from keras.models import save_model, load_model, Sequential
from keras.layers import Activation, BatchNormalization, Dense, Dropout, Flatten
from keras.optimizers import Adam, Adagrad, RMSprop, SGD
from keras.wrappers.scikit_learn import KerasRegressor, KerasClassifier
from keras.regularizers import l1,l2,l1_l2

#For Tuning
from keras.callbacks import EarlyStopping, LearningRateScheduler, ModelCheckpoint, ReduceLROnPlateau, Tensor


import warnings
warnings.filterwarnings('ignore')

import pickle
from pickle import dump, load

pd.set_option('display.max_columns',None)
#pd.set_option('display.max_rows',None)
pd.set_option('display.width', 1000)

np.random.seed(0)
np.set_printoptions(suppress=True)
tf.random.set_seed(0)
```

```
Autosaving every 60 seconds
```

Data Exploration

In [2]:

```
df = pd.read_csv("traincovid.csv")
```

In [3]:

```
df
```

Out[3]:

	Month	Day	ConfirmDiff	RecoverDiff	DeathsDiff
0	1	22	0.0	0.0	0.0
1	1	23	0.0	0.0	0.0
2	1	24	0.0	0.0	0.0
3	1	25	3.0	0.0	0.0
4	1	26	1.0	0.0	0.0
...	...	...	...	...	...
304	11	21	1041.0	1405.0	3.0
305	11	22	1096.0	1104.0	3.0
306	11	23	1884.0	883.0	2.0
307	11	24	2188.0	1673.0	4.0
308	11	25	970.0	2348.0	4.0

309 rows × 5 columns

In [4]:

```
df.isnull().sum()
```

Out[4]:

```
Month          0
Day            0
ConfirmDiff    0
RecoverDiff    0
DeathsDiff     0
dtype: int64
```

In [5]:

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 309 entries, 0 to 308
Data columns (total 5 columns):
 #   Column       Non-Null Count  Dtype  
---  ------       --------------  -----  
 0   Month        309 non-null    int64  
 1   Day          309 non-null    int64  
 2   ConfirmDiff  309 non-null    float64
 3   RecoverDiff  309 non-null    float64
 4   DeathsDiff   309 non-null    float64
dtypes: float64(3), int64(2)
memory usage: 12.2 KB
```

In [6]:

```
df.describe(include='all')
```

Out[6]:

	Month	Day	ConfirmDiff	RecoverDiff	DeathsDiff
count	309.000000	309.000000	309.000000	309.000000	309.000000
mean	6.265372	15.857605	193.582524	150.488673	1.116505
std	2.943317	8.814048	359.375952	306.753450	1.988445
min	1.000000	1.000000	0.000000	0.000000	0.000000
25%	4.000000	8.000000	7.000000	6.000000	0.000000
50%	6.000000	16.000000	33.000000	28.000000	0.000000
75%	9.000000	23.000000	150.000000	96.000000	1.000000
max	11.000000	31.000000	2188.000000	2348.000000	12.000000

In [7]:

```
df.shape
```

Out[7]:

```
(309, 5)
```

In [8]:

```
df.columns
```

Out[8]:

```
Index(['Month', 'Day', 'ConfirmDiff', 'RecoverDiff', 'DeathsDiff'], dtype='object')
```

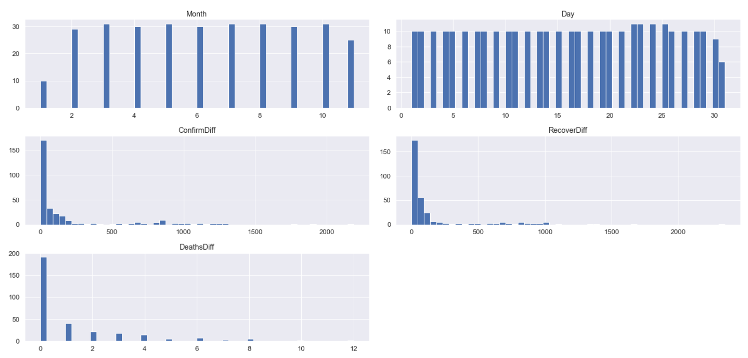
Data Visualization

Univariate Data Exploration

In [9]:

```
df.hist(bins=50, figsize=(20,10))
plt.suptitle('Feature Distribution', x=0.5, y=1.02, ha='center', fontsize='large')
plt.tight_layout()
plt.show()
```

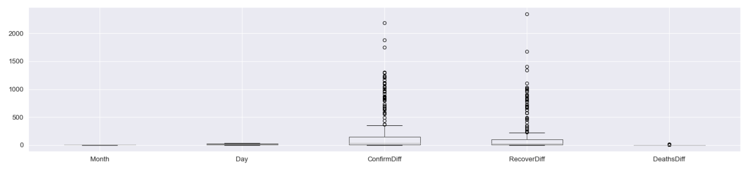
Feature Distribution



In [10]:

```
df.boxplot(figsize=(20,5))
plt.suptitle('BoxPlot', x=0.5, y=1.02, ha='center', fontsize='large')
plt.tight_layout()
plt.show()
```

BoxPlot



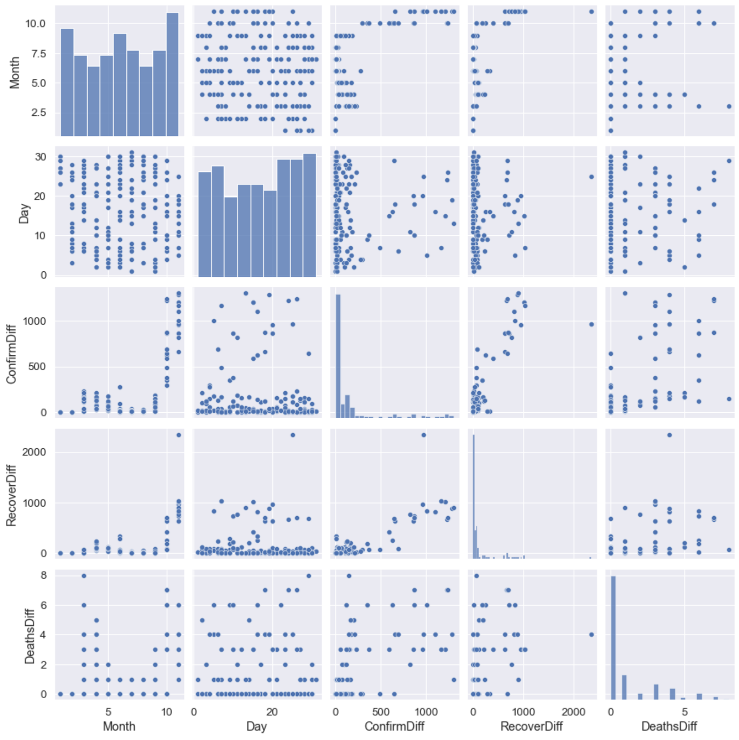
Pairplots

In [11]:

```
plt.figure(figsize=(20,20))
sns.pairplot(df.sample(150))
plt.suptitle('Pairplots of features', x=0.5, y=1.02, ha='center', fontsize='large')
plt.show()
```

```
<Figure size 1440x1440 with 0 Axes>
```

Pairplots of features



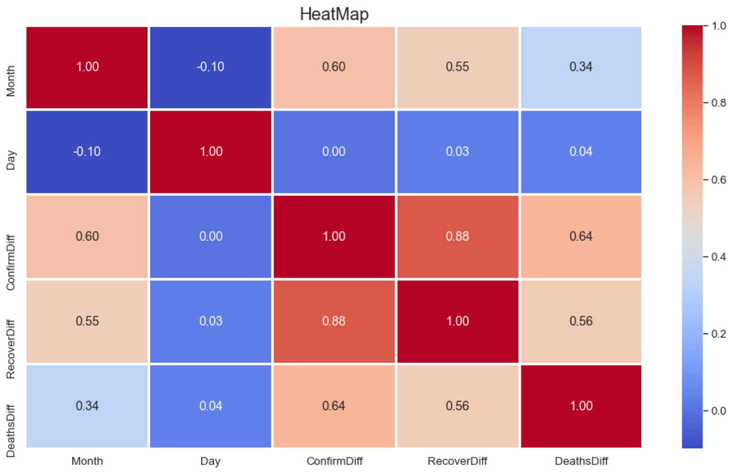
Correlation

In [12]:
```
df.corr()
```

Out[12]:

	Month	Day	ConfirmDiff	RecoverDiff	DeathsDiff
Month	1.000000	-0.098535	0.604269	0.545945	0.341420
Day	-0.098535	1.000000	0.002108	0.027499	0.035592
ConfirmDiff	0.604269	0.002108	1.000000	0.875959	0.641523
RecoverDiff	0.545945	0.027499	0.875959	1.000000	0.561145
DeathsDiff	0.341420	0.035592	0.641523	0.561145	1.000000

In [13]:
```
plt.figure(figsize=(16,9))
sns.heatmap(df.corr(),cmap="coolwarm",annot=True,fmt='.2f',linewidths=2)
plt.title("HeatMap", fontsize=20)
plt.show()
```



Treat Duplicate Values

In [14]:
```
df.duplicated(keep='first').sum()
```

Out[14]:
```
0
```

Train Test Split

In [15]:
```
df2 = pd.read_csv("traincovid2.csv")
```

In [16]:
```
df2.head()
```

Out[16]:

	Month_2	Month_3	Month_4	Month_5	Month_6	Month_7	Month_8	Month_9	Month_10	Month_11	Day_2	Day_3	Day_4	Day_5	Da
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	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	
3	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	

In [17]:
```
df2.shape
```

Out[17]:
```
(309, 43)
```

In [18]:
```
X = df2.iloc[:,0:42]
y = df2.iloc[:,42]
```

In [19]:
```
X.values, y.values
```

Out[19]:
```
(array([[   0.,    0.,    0., ...,    0.,    0.,    0.],
        [   0.,    0.,    0., ...,    0.,    0.,    0.],
        [   0.,    0.,    0., ...,    0.,    0.,    0.],
        ...,
        [   0.,    0.,    0., ...,    0., 1884.,  883.],
        [   0.,    0.,    0., ...,    0., 2188., 1673.],
        [   0.,    0.,    0., ...,    0.,  970., 2348.]]),
 array([ 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.,  0.,  0.,  0.,
         0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,
         0.,  0.,  0.,  2.,  0.,  0.,  1.,  1.,  6.,  4.,  2.,  4.,  3.,
         3.,  1.,  8.,  2.,  6.,  2.,  5.,  3.,  4.,  4.,  1.,  1.,  2.,
         2.,  3.,  3.,  3.,  1.,  5.,  1.,  1.,  2.,  2.,  1.,  0.,  3.,
         1.,  2.,  1.,  2.,  0.,  1.,  1.,  0.,  2.,  1.,  0.,  2.,  0.,
         1.,  1.,  0.,  0.,  1.,  0.,  1.,  0.,  2.,  1.,  0.,  1.,  0.,
         0.,  1.,  0.,  0.,  1.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,
         0.,  0.,  0.,  0.,  0.,  1.,  1.,  0.,  0.,  0.,  1.,  0.,  1.,
         1.,  1.,  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.,  1.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  1.,  0.,  0.,
         0.,  0.,  0.,  0.,  1.,  0.,  0.,  0.,  0.,  1.,  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.,
         1.,  1.,  1.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,
         0.,  0.,  0.,  0.,  0.,  0.,  1.,  1.,  0.,  0.,  0.,  3.,  0.,
         0.,  0.,  1.,  0.,  0.,  2.,  0.,  0.,  1.,  0.,  0.,  4.,  0.,
         5.,  6.,  3.,  2.,  2.,  4.,  4.,  3.,  6.,  4.,  7.,  3.,  3.,
         6.,  5., 10.,  7.,  8.,  7.,  2.,  8.,  0.,  3.,  0.,  0.,  2.,
        12.,  8.,  6.,  2.,  3.,  4.,  8.,  6.,  2.,  1.,  1.,  2.,  3.,
         4.,  5.,  4.,  4.,  3.,  3.,  3.,  2.,  4.,  4.]))
```

In [20]:
```
X_train, X_test, y_train, y_test = train_test_split(X.values, y.values, test_size=0.25, random_state=0)
```

In [21]:
```
X_train.shape, X_test.shape, y_train.shape, y_test.shape
```

Out[21]:
```
((231, 42), (78, 42), (231,), (78,))
```

Feature Scaling (If not using Batch Normalization)

In [22]:
```
X_train
```

Out[22]:
```
array([[ 0.,  0.,  0., ...,  0., 39., 74.],
       [ 1.,  0.,  0., ...,  0.,  0.,  0.],
       [ 0.,  0.,  0., ...,  0.,  3.,  9.],
       ...,
       [ 0.,  0.,  0., ...,  0., 47., 44.],
       [ 0.,  1.,  0., ...,  0., 18.,  0.],
       [ 0.,  0.,  0., ...,  0., 14.,  4.]])
```

In [23]:
```
y_train
```

Out[23]:
```
array([ 0.,  0.,  0.,  0.,  0.,  3.,  0.,  2.,  0.,  0.,  0.,  3.,  0.,
        0.,  0.,  3.,  0.,  0.,  0.,  3.,  0.,  0.,  0.,  0.,  2.,  1.,
        0.,  7.,  7.,  0.,  3.,  0.,  3.,  0.,  0.,  0.,  0.,  4.,  0.,
        0.,  0.,  0.,  1.,  3.,  0.,  0.,  5.,  0.,  0.,  1.,  1.,  0.,
        0.,  5.,  0.,  1.,  0.,  6.,  1.,  0.,  1.,  0.,  0.,  0.,  0.,
        0.,  1.,  0.,  4.,  8.,  7.,  0.,  2.,  8.,  0.,  8.,  0.,  0.,
        0.,  0.,  1.,  0.,  0.,  0.,  2.,  2.,  0.,  0.,  2.,  3.,  5.,
        3.,  0.,  0.,  1.,  1.,  1.,  2.,  0.,  0.,  1.,  0.,  0.,  0.,
        0.,  0.,  0.,  0.,  0.,  0.,  2.,  0.,  0.,  0.,  0.,  0.,  0.,
        0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  2.,  5.,  0.,  0.,  1.,
        1.,  0.,  0.,  0.,  1.,  0.,  2.,  0.,  0.,  3.,  4.,  0.,  6.,
        0.,  0.,  1.,  2.,  0.,  0.,  0.,  1.,  0.,  0.,  1.,  2.,  0.,
        0.,  1.,  0.,  0., 10.,  4.,  0.,  0.,  2.,  0.,  1.,  0.,  1.,
        1.,  2.,  3.,  1.,  5.,  1.,  1.,  4.,  0.,  0.,  0.,  0.,  6.,
        0.,  1.,  3.,  0.,  0.,  4.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,
        0.,  0.,  0.,  0., 12.,  2.,  0.,  0.,  0.,  2.,  0.,  0.,  1.,
        4.,  3.,  0.,  0.,  1.,  0.,  2.,  0.,  0.,  1.,  2.,  2.,  8.,
        0.,  8.,  0.,  0.,  0.,  0.,  0.,  0.,  0.,  0.])
```

In [24]:
```
minmax = MinMaxScaler()
```

In [25]:
```
X_train_scaled = minmax.fit_transform(X_train)
```

In [26]:
```
X_test_scaled = minmax.transform(X_test)
```

In [27]:
```
X_train_scaled
```

Out[27]:
```
array([[0.        , 0.        , 0.        , ..., 0.        , 0.0178245 ,
        0.03151618],
       [1.        , 0.        , 0.        , ..., 0.        , 0.        ,
        0.        ],
       [0.        , 0.        , 0.        , ..., 0.        , 0.00137112,
        0.00383305],
       ...,
       [0.        , 0.        , 0.        , ..., 0.        , 0.0214808 ,
        0.01873935],
       [0.        , 1.        , 0.        , ..., 0.        , 0.00822669,
        0.        ],
       [0.        , 0.        , 0.        , ..., 0.        , 0.00639854,
        0.00170358]])
```

In [28]:
```
X_test_scaled
```

Out[28]:
```
array([[0.        , 1.        , 0.        , ..., 0.        , 0.0786106 ,
        0.00681431],
```

```
       [0.        , 0.        , 0.        , ..., 0.        , 0.01096892,
        0.00298126],
       [0.        , 0.        , 0.        , ..., 0.        , 0.00274223,
        0.00212947],
       ...,
       [0.        , 0.        , 0.        , ..., 0.        , 0.58957952,
        0.37393526],
       [0.        , 0.        , 0.        , ..., 0.        , 0.39716636,
        0.30877342],
       [0.        , 0.        , 0.        , ..., 0.        , 0.04798903,
        0.04940375]])
```

Model Training

Using DNN

In [29]:

```
model = Sequential()
model.add(Dense(units=100,activation='relu',input_dim=42))
#model.add(BatchNormalization())
#model.add(Dropout(0.2))
model.add(Dense(units=100,activation='relu',kernel_regularizer='l2'))
#model.add(BatchNormalization())
#model.add(Dropout(0.2))
model.add(Dense(units=1,activation='linear'))
```

In [30]:

```
model.summary()
```

```
Model: "sequential"
_________________________________________________________________
Layer (type)                 Output Shape              Param #   
=================================================================
dense (Dense)                (None, 100)               4300      
_________________________________________________________________
dense_1 (Dense)              (None, 100)               10100     
_________________________________________________________________
dense_2 (Dense)              (None, 1)                 101       
=================================================================
Total params: 14,501
Trainable params: 14,501
Non-trainable params: 0
_________________________________________________________________
```

In [31]:

```
checkpointcb = keras.callbacks.ModelCheckpoint("BestModelPartB.h5",save_best_only=True)
```

In [32]:

```
earlystoppingcb = keras.callbacks.EarlyStopping(patience=10, verbose=1)
```

In [33]:

```
optimizer = Adam(learning_rate=0.00001)
```

In [34]:

```
model.compile(optimizer=optimizer, loss='mean_squared_error', metrics=["mse"])
```

In [35]:

```
model_history = model.fit(X_train_scaled, y_train,epochs=3000,
                          validation_split=0.2, verbose=2, callbacks=[checkpointcb,earlystoppingcb])
```

```
Epoch 1/3000
6/6 - 0s - loss: 6.2281 - mse: 5.2120 - val_loss: 8.5060 - val_mse: 7.4901
Epoch 2/3000
6/6 - 0s - loss: 6.2194 - mse: 5.2037 - val_loss: 8.4975 - val_mse: 7.4820
Epoch 3/3000
6/6 - 0s - loss: 6.2108 - mse: 5.1954 - val_loss: 8.4891 - val_mse: 7.4739
Epoch 4/3000
6/6 - 0s - loss: 6.2035 - mse: 5.1884 - val_loss: 8.4804 - val_mse: 7.4655
Epoch 5/3000
6/6 - 0s - loss: 6.1945 - mse: 5.1797 - val_loss: 8.4720 - val_mse: 7.4575
Epoch 6/3000
6/6 - 0s - loss: 6.1866 - mse: 5.1722 - val_loss: 8.4636 - val_mse: 7.4493
Epoch 7/3000
6/6 - 0s - loss: 6.1779 - mse: 5.1638 - val_loss: 8.4553 - val_mse: 7.4414
Epoch 8/3000
6/6 - 0s - loss: 6.1701 - mse: 5.1563 - val_loss: 8.4468 - val_mse: 7.4333
Epoch 9/3000
6/6 - 0s - loss: 6.1622 - mse: 5.1488 - val_loss: 8.4383 - val_mse: 7.4251
Epoch 10/3000
6/6 - 0s - loss: 6.1539 - mse: 5.1408 - val_loss: 8.4300 - val_mse: 7.4171
Epoch 11/3000
6/6 - 0s - loss: 6.1452 - mse: 5.1325 - val_loss: 8.4221 - val_mse: 7.4095
Epoch 12/3000
6/6 - 0s - loss: 6.1375 - mse: 5.1251 - val_loss: 8.4138 - val_mse: 7.4016
Epoch 13/3000
6/6 - 0s - loss: 6.1300 - mse: 5.1179 - val_loss: 8.4054 - val_mse: 7.3935
Epoch 14/3000
6/6 - 0s - loss: 6.1214 - mse: 5.1096 - val_loss: 8.3973 - val_mse: 7.3857
Epoch 15/3000
6/6 - 0s - loss: 6.1136 - mse: 5.1021 - val_loss: 8.3890 - val_mse: 7.3777
Epoch 16/3000
6/6 - 0s - loss: 6.1053 - mse: 5.0942 - val_loss: 8.3809 - val_mse: 7.3700
Epoch 17/3000
6/6 - 0s - loss: 6.0977 - mse: 5.0869 - val_loss: 8.3725 - val_mse: 7.3620
Epoch 18/3000
6/6 - 0s - loss: 6.0895 - mse: 5.0791 - val_loss: 8.3643 - val_mse: 7.3541
Epoch 19/3000
6/6 - 0s - loss: 6.0815 - mse: 5.0714 - val_loss: 8.3562 - val_mse: 7.3463
Epoch 20/3000
6/6 - 0s - loss: 6.0735 - mse: 5.0638 - val_loss: 8.3481 - val_mse: 7.3385
Epoch 21/3000
6/6 - 0s - loss: 6.0656 - mse: 5.0562 - val_loss: 8.3401 - val_mse: 7.3308
Epoch 22/3000
6/6 - 0s - loss: 6.0585 - mse: 5.0493 - val_loss: 8.3318 - val_mse: 7.3229
Epoch 23/3000
6/6 - 0s - loss: 6.0503 - mse: 5.0415 - val_loss: 8.3238 - val_mse: 7.3152
Epoch 24/3000
6/6 - 0s - loss: 6.0425 - mse: 5.0340 - val_loss: 8.3158 - val_mse: 7.3076
Epoch 25/3000
6/6 - 0s - loss: 6.0349 - mse: 5.0268 - val_loss: 8.3079 - val_mse: 7.3000
Epoch 26/3000
6/6 - 0s - loss: 6.0270 - mse: 5.0192 - val_loss: 8.3002 - val_mse: 7.2925
Epoch 27/3000
6/6 - 0s - loss: 6.0197 - mse: 5.0122 - val_loss: 8.2923 - val_mse: 7.2850
Epoch 28/3000
6/6 - 0s - loss: 6.0119 - mse: 5.0047 - val_loss: 8.2844 - val_mse: 7.2775
Epoch 29/3000
6/6 - 0s - loss: 6.0044 - mse: 4.9976 - val_loss: 8.2765 - val_mse: 7.2699
Epoch 30/3000
6/6 - 0s - loss: 5.9967 - mse: 4.9902 - val_loss: 8.2686 - val_mse: 7.2624
Epoch 31/3000
6/6 - 0s - loss: 5.9891 - mse: 4.9829 - val_loss: 8.2608 - val_mse: 7.2548
Epoch 32/3000
6/6 - 0s - loss: 5.9815 - mse: 4.9757 - val_loss: 8.2531 - val_mse: 7.2474
Epoch 33/3000
6/6 - 0s - loss: 5.9742 - mse: 4.9687 - val_loss: 8.2452 - val_mse: 7.2399
Epoch 34/3000
6/6 - 0s - loss: 5.9668 - mse: 4.9617 - val_loss: 8.2373 - val_mse: 7.2323
Epoch 35/3000
6/6 - 0s - loss: 5.9595 - mse: 4.9547 - val_loss: 8.2294 - val_mse: 7.2247
Epoch 36/3000
6/6 - 0s - loss: 5.9516 - mse: 4.9471 - val_loss: 8.2217 - val_mse: 7.2174
Epoch 37/3000
6/6 - 0s - loss: 5.9446 - mse: 4.9404 - val_loss: 8.2138 - val_mse: 7.2099
Epoch 38/3000
6/6 - 0s - loss: 5.9372 - mse: 4.9333 - val_loss: 8.2061 - val_mse: 7.2025
Epoch 39/3000
6/6 - 0s - loss: 5.9296 - mse: 4.9260 - val_loss: 8.1985 - val_mse: 7.1952
Epoch 40/3000
6/6 - 0s - loss: 5.9224 - mse: 4.9193 - val_loss: 8.1908 - val_mse: 7.1879
Epoch 41/3000
6/6 - 0s - loss: 5.9152 - mse: 4.9123 - val_loss: 8.1831 - val_mse: 7.1804
Epoch 42/3000
6/6 - 0s - loss: 5.9076 - mse: 4.9051 - val_loss: 8.1754 - val_mse: 7.1731
Epoch 43/3000
6/6 - 0s - loss: 5.9005 - mse: 4.8983 - val_loss: 8.1677 - val_mse: 7.1657
Epoch 44/3000
6/6 - 0s - loss: 5.8930 - mse: 4.8912 - val_loss: 8.1601 - val_mse: 7.1585
Epoch 45/3000
6/6 - 0s - loss: 5.8863 - mse: 4.8848 - val_loss: 8.1522 - val_mse: 7.1509
Epoch 46/3000
6/6 - 0s - loss: 5.8785 - mse: 4.8773 - val_loss: 8.1448 - val_mse: 7.1438
Epoch 47/3000
6/6 - 0s - loss: 5.8714 - mse: 4.8706 - val_loss: 8.1372 - val_mse: 7.1365
Epoch 48/3000
6/6 - 0s - loss: 5.8643 - mse: 4.8638 - val_loss: 8.1296 - val_mse: 7.1293
Epoch 49/3000
6/6 - 0s - loss: 5.8566 - mse: 4.8564 - val_loss: 8.1224 - val_mse: 7.1224
Epoch 50/3000
6/6 - 0s - loss: 5.8504 - mse: 4.8505 - val_loss: 8.1146 - val_mse: 7.1149
Epoch 51/3000
6/6 - 0s - loss: 5.8428 - mse: 4.8433 - val_loss: 8.1071 - val_mse: 7.1078
Epoch 52/3000
6/6 - 0s - loss: 5.8357 - mse: 4.8365 - val_loss: 8.0997 - val_mse: 7.1007
Epoch 53/3000
6/6 - 0s - loss: 5.8284 - mse: 4.8295 - val_loss: 8.0924 - val_mse: 7.0938
Epoch 54/3000
6/6 - 0s - loss: 5.8213 - mse: 4.8228 - val_loss: 8.0851 - val_mse: 7.0868
Epoch 55/3000
6/6 - 0s - loss: 5.8147 - mse: 4.8165 - val_loss: 8.0775 - val_mse: 7.0795
Epoch 56/3000
6/6 - 0s - loss: 5.8073 - mse: 4.8094 - val_loss: 8.0701 - val_mse: 7.0725
Epoch 57/3000
6/6 - 0s - loss: 5.8004 - mse: 4.8029 - val_loss: 8.0627 - val_mse: 7.0653
Epoch 58/3000
6/6 - 0s - loss: 5.7931 - mse: 4.7959 - val_loss: 8.0554 - val_mse: 7.0583
Epoch 59/3000
6/6 - 0s - loss: 5.7865 - mse: 4.7897 - val_loss: 8.0478 - val_mse: 7.0511
Epoch 60/3000
6/6 - 0s - loss: 5.7793 - mse: 4.7827 - val_loss: 8.0406 - val_mse: 7.0442
Epoch 61/3000
6/6 - 0s - loss: 5.7723 - mse: 4.7761 - val_loss: 8.0334 - val_mse: 7.0374
Epoch 62/3000
6/6 - 0s - loss: 5.7656 - mse: 4.7697 - val_loss: 8.0261 - val_mse: 7.0305
Epoch 63/3000
6/6 - 0s - loss: 5.7588 - mse: 4.7632 - val_loss: 8.0189 - val_mse: 7.0235
Epoch 64/3000
6/6 - 0s - loss: 5.7513 - mse: 4.7560 - val_loss: 8.0120 - val_mse: 7.0170
Epoch 65/3000
6/6 - 0s - loss: 5.7449 - mse: 4.7500 - val_loss: 8.0049 - val_mse: 7.0102
Epoch 66/3000
6/6 - 0s - loss: 5.7380 - mse: 4.7435 - val_loss: 7.9977 - val_mse: 7.0034
Epoch 67/3000
6/6 - 0s - loss: 5.7313 - mse: 4.7371 - val_loss: 7.9904 - val_mse: 6.9964
Epoch 68/3000
6/6 - 0s - loss: 5.7245 - mse: 4.7307 - val_loss: 7.9831 - val_mse: 6.9894
Epoch 69/3000
6/6 - 0s - loss: 5.7174 - mse: 4.7239 - val_loss: 7.9759 - val_mse: 6.9826
Epoch 70/3000
6/6 - 0s - loss: 5.7110 - mse: 4.7178 - val_loss: 7.9686 - val_mse: 6.9755
Epoch 71/3000
6/6 - 0s - loss: 5.7041 - mse: 4.7112 - val_loss: 7.9614 - val_mse: 6.9687
Epoch 72/3000
6/6 - 0s - loss: 5.6970 - mse: 4.7045 - val_loss: 7.9545 - val_mse: 6.9621
Epoch 73/3000
6/6 - 0s - loss: 5.6904 - mse: 4.6982 - val_loss: 7.9475 - val_mse: 6.9555
Epoch 74/3000
6/6 - 0s - loss: 5.6840 - mse: 4.6921 - val_loss: 7.9405 - val_mse: 6.9488
Epoch 75/3000
6/6 - 0s - loss: 5.6772 - mse: 4.6856 - val_loss: 7.9335 - val_mse: 6.9422
Epoch 76/3000
6/6 - 0s - loss: 5.6706 - mse: 4.6794 - val_loss: 7.9266 - val_mse: 6.9356
Epoch 77/3000
6/6 - 0s - loss: 5.6642 - mse: 4.6733 - val_loss: 7.9197 - val_mse: 6.9290
Epoch 78/3000
6/6 - 0s - loss: 5.6575 - mse: 4.6670 - val_loss: 7.9128 - val_mse: 6.9225
Epoch 79/3000
6/6 - 0s - loss: 5.6507 - mse: 4.6605 - val_loss: 7.9062 - val_mse: 6.9161
Epoch 80/3000
6/6 - 0s - loss: 5.6447 - mse: 4.6548 - val_loss: 7.8991 - val_mse: 6.9094
Epoch 81/3000
6/6 - 0s - loss: 5.6377 - mse: 4.6482 - val_loss: 7.8923 - val_mse: 6.9030
Epoch 82/3000
6/6 - 0s - loss: 5.6313 - mse: 4.6420 - val_loss: 7.8854 - val_mse: 6.8964
Epoch 83/3000
6/6 - 0s - loss: 5.6245 - mse: 4.6356 - val_loss: 7.8786 - val_mse: 6.8899
Epoch 84/3000
6/6 - 0s - loss: 5.6181 - mse: 4.6295 - val_loss: 7.8716 - val_mse: 6.8833
Epoch 85/3000
6/6 - 0s - loss: 5.6117 - mse: 4.6235 - val_loss: 7.8646 - val_mse: 6.8765
Epoch 86/3000
6/6 - 0s - loss: 5.6049 - mse: 4.6170 - val_loss: 7.8577 - val_mse: 6.8700
Epoch 87/3000
6/6 - 0s - loss: 5.5984 - mse: 4.6109 - val_loss: 7.8509 - val_mse: 6.8635
Epoch 88/3000
6/6 - 0s - loss: 5.5923 - mse: 4.6051 - val_loss: 7.8438 - val_mse: 6.8568
Epoch 89/3000
6/6 - 0s - loss: 5.5853 - mse: 4.5985 - val_loss: 7.8370 - val_mse: 6.8503
Epoch 90/3000
6/6 - 0s - loss: 5.5790 - mse: 4.5925 - val_loss: 7.8302 - val_mse: 6.8438
Epoch 91/3000
6/6 - 0s - loss: 5.5724 - mse: 4.5862 - val_loss: 7.8235 - val_mse: 6.8375
Epoch 92/3000
6/6 - 0s - loss: 5.5661 - mse: 4.5802 - val_loss: 7.8167 - val_mse: 6.8310
Epoch 93/3000
6/6 - 0s - loss: 5.5595 - mse: 4.5739 - val_loss: 7.8099 - val_mse: 6.8246
Epoch 94/3000
6/6 - 0s - loss: 5.5532 - mse: 4.5680 - val_loss: 7.8030 - val_mse: 6.8180
Epoch 95/3000
6/6 - 0s - loss: 5.5469 - mse: 4.5620 - val_loss: 7.7961 - val_mse: 6.8115
Epoch 96/3000
6/6 - 0s - loss: 5.5405 - mse: 4.5559 - val_loss: 7.7893 - val_mse: 6.8050
Epoch 97/3000
6/6 - 0s - loss: 5.5339 - mse: 4.5497 - val_loss: 7.7826 - val_mse: 6.7985
Epoch 98/3000
6/6 - 0s - loss: 5.5272 - mse: 4.5434 - val_loss: 7.7760 - val_mse: 6.7923
Epoch 99/3000
6/6 - 0s - loss: 5.5211 - mse: 4.5375 - val_loss: 7.7692 - val_mse: 6.7858
Epoch 100/3000
6/6 - 0s - loss: 5.5149 - mse: 4.5317 - val_loss: 7.7623 - val_mse: 6.7792
Epoch 101/3000
```

```
6/6 - 0s - loss: 5.5083 - mse: 4.5254 - val_loss: 7.7555 - val_mse: 6.7728
Epoch 102/3000
6/6 - 0s - loss: 5.5019 - mse: 4.5193 - val_loss: 7.7487 - val_mse: 6.7664
Epoch 103/3000
6/6 - 0s - loss: 5.4958 - mse: 4.5136 - val_loss: 7.7417 - val_mse: 6.7597
Epoch 104/3000
6/6 - 0s - loss: 5.4891 - mse: 4.5072 - val_loss: 7.7350 - val_mse: 6.7533
Epoch 105/3000
6/6 - 0s - loss: 5.4828 - mse: 4.5013 - val_loss: 7.7281 - val_mse: 6.7467
Epoch 106/3000
6/6 - 0s - loss: 5.4766 - mse: 4.4954 - val_loss: 7.7211 - val_mse: 6.7401
Epoch 107/3000
6/6 - 0s - loss: 5.4703 - mse: 4.4894 - val_loss: 7.7142 - val_mse: 6.7335
Epoch 108/3000
6/6 - 0s - loss: 5.4637 - mse: 4.4832 - val_loss: 7.7075 - val_mse: 6.7272
Epoch 109/3000
6/6 - 0s - loss: 5.4577 - mse: 4.4774 - val_loss: 7.7007 - val_mse: 6.7206
Epoch 110/3000
6/6 - 0s - loss: 5.4515 - mse: 4.4716 - val_loss: 7.6938 - val_mse: 6.7141
Epoch 111/3000
6/6 - 0s - loss: 5.4451 - mse: 4.4655 - val_loss: 7.6870 - val_mse: 6.7077
Epoch 112/3000
6/6 - 0s - loss: 5.4388 - mse: 4.4596 - val_loss: 7.6801 - val_mse: 6.7011
Epoch 113/3000
6/6 - 0s - loss: 5.4321 - mse: 4.4532 - val_loss: 7.6736 - val_mse: 6.6949
Epoch 114/3000
6/6 - 0s - loss: 5.4261 - mse: 4.4475 - val_loss: 7.6668 - val_mse: 6.6884
Epoch 115/3000
6/6 - 0s - loss: 5.4195 - mse: 4.4412 - val_loss: 7.6602 - val_mse: 6.6822
Epoch 116/3000
6/6 - 0s - loss: 5.4137 - mse: 4.4358 - val_loss: 7.6534 - val_mse: 6.6757
Epoch 117/3000
6/6 - 0s - loss: 5.4073 - mse: 4.4297 - val_loss: 7.6465 - val_mse: 6.6692
Epoch 118/3000
6/6 - 0s - loss: 5.4009 - mse: 4.4237 - val_loss: 7.6397 - val_mse: 6.6626
Epoch 119/3000
6/6 - 0s - loss: 5.3948 - mse: 4.4179 - val_loss: 7.6327 - val_mse: 6.6560
Epoch 120/3000
6/6 - 0s - loss: 5.3885 - mse: 4.4119 - val_loss: 7.6258 - val_mse: 6.6494
Epoch 121/3000
6/6 - 0s - loss: 5.3823 - mse: 4.4060 - val_loss: 7.6190 - val_mse: 6.6429
Epoch 122/3000
6/6 - 0s - loss: 5.3758 - mse: 4.3999 - val_loss: 7.6124 - val_mse: 6.6367
Epoch 123/3000
6/6 - 0s - loss: 5.3700 - mse: 4.3944 - val_loss: 7.6056 - val_mse: 6.6303
Epoch 124/3000
6/6 - 0s - loss: 5.3635 - mse: 4.3883 - val_loss: 7.5991 - val_mse: 6.6241
Epoch 125/3000
6/6 - 0s - loss: 5.3574 - mse: 4.3825 - val_loss: 7.5925 - val_mse: 6.6178
Epoch 126/3000
6/6 - 0s - loss: 5.3518 - mse: 4.3772 - val_loss: 7.5855 - val_mse: 6.6111
Epoch 127/3000
6/6 - 0s - loss: 5.3453 - mse: 4.3711 - val_loss: 7.5789 - val_mse: 6.6049
Epoch 128/3000
6/6 - 0s - loss: 5.3391 - mse: 4.3652 - val_loss: 7.5723 - val_mse: 6.5986
Epoch 129/3000
6/6 - 0s - loss: 5.3330 - mse: 4.3594 - val_loss: 7.5658 - val_mse: 6.5924
Epoch 130/3000
6/6 - 0s - loss: 5.3271 - mse: 4.3539 - val_loss: 7.5591 - val_mse: 6.5861
Epoch 131/3000
6/6 - 0s - loss: 5.3209 - mse: 4.3479 - val_loss: 7.5526 - val_mse: 6.5798
Epoch 132/3000
6/6 - 0s - loss: 5.3152 - mse: 4.3426 - val_loss: 7.5457 - val_mse: 6.5733
Epoch 133/3000
6/6 - 0s - loss: 5.3090 - mse: 4.3368 - val_loss: 7.5389 - val_mse: 6.5669
Epoch 134/3000
6/6 - 0s - loss: 5.3022 - mse: 4.3303 - val_loss: 7.5326 - val_mse: 6.5609
Epoch 135/3000
6/6 - 0s - loss: 5.2968 - mse: 4.3252 - val_loss: 7.5257 - val_mse: 6.5543
Epoch 136/3000
6/6 - 0s - loss: 5.2905 - mse: 4.3192 - val_loss: 7.5191 - val_mse: 6.5480
Epoch 137/3000
6/6 - 0s - loss: 5.2846 - mse: 4.3136 - val_loss: 7.5123 - val_mse: 6.5416
Epoch 138/3000
6/6 - 0s - loss: 5.2784 - mse: 4.3077 - val_loss: 7.5059 - val_mse: 6.5354
Epoch 139/3000
6/6 - 0s - loss: 5.2724 - mse: 4.3021 - val_loss: 7.4994 - val_mse: 6.5293
Epoch 140/3000
6/6 - 0s - loss: 5.2666 - mse: 4.2966 - val_loss: 7.4928 - val_mse: 6.5230
Epoch 141/3000
6/6 - 0s - loss: 5.2604 - mse: 4.2908 - val_loss: 7.4862 - val_mse: 6.5168
Epoch 142/3000
6/6 - 0s - loss: 5.2543 - mse: 4.2850 - val_loss: 7.4797 - val_mse: 6.5106
Epoch 143/3000
6/6 - 0s - loss: 5.2486 - mse: 4.2797 - val_loss: 7.4729 - val_mse: 6.5041
Epoch 144/3000
6/6 - 0s - loss: 5.2424 - mse: 4.2738 - val_loss: 7.4662 - val_mse: 6.4978
Epoch 145/3000
6/6 - 0s - loss: 5.2367 - mse: 4.2684 - val_loss: 7.4595 - val_mse: 6.4914
Epoch 146/3000
6/6 - 0s - loss: 5.2307 - mse: 4.2627 - val_loss: 7.4529 - val_mse: 6.4851
Epoch 147/3000
6/6 - 0s - loss: 5.2247 - mse: 4.2571 - val_loss: 7.4463 - val_mse: 6.4788
Epoch 148/3000
6/6 - 0s - loss: 5.2189 - mse: 4.2516 - val_loss: 7.4396 - val_mse: 6.4725
Epoch 149/3000
6/6 - 0s - loss: 5.2125 - mse: 4.2455 - val_loss: 7.4333 - val_mse: 6.4665
Epoch 150/3000
6/6 - 0s - loss: 5.2071 - mse: 4.2404 - val_loss: 7.4264 - val_mse: 6.4599
Epoch 151/3000
6/6 - 0s - loss: 5.2013 - mse: 4.2350 - val_loss: 7.4196 - val_mse: 6.4534
Epoch 152/3000
6/6 - 0s - loss: 5.1950 - mse: 4.2290 - val_loss: 7.4130 - val_mse: 6.4472
Epoch 153/3000
6/6 - 0s - loss: 5.1889 - mse: 4.2232 - val_loss: 7.4066 - val_mse: 6.4411
Epoch 154/3000
6/6 - 0s - loss: 5.1832 - mse: 4.2178 - val_loss: 7.3999 - val_mse: 6.4347
Epoch 155/3000
6/6 - 0s - loss: 5.1780 - mse: 4.2130 - val_loss: 7.3927 - val_mse: 6.4279
Epoch 156/3000
6/6 - 0s - loss: 5.1714 - mse: 4.2067 - val_loss: 7.3862 - val_mse: 6.4217
Epoch 157/3000
6/6 - 0s - loss: 5.1655 - mse: 4.2011 - val_loss: 7.3796 - val_mse: 6.4155
Epoch 158/3000
6/6 - 0s - loss: 5.1600 - mse: 4.1959 - val_loss: 7.3731 - val_mse: 6.4092
Epoch 159/3000
6/6 - 0s - loss: 5.1543 - mse: 4.1906 - val_loss: 7.3665 - val_mse: 6.4029
Epoch 160/3000
6/6 - 0s - loss: 5.1484 - mse: 4.1850 - val_loss: 7.3601 - val_mse: 6.3969
Epoch 161/3000
6/6 - 0s - loss: 5.1424 - mse: 4.1794 - val_loss: 7.3539 - val_mse: 6.3910
Epoch 162/3000
6/6 - 0s - loss: 5.1372 - mse: 4.1744 - val_loss: 7.3474 - val_mse: 6.3848
Epoch 163/3000
6/6 - 0s - loss: 5.1318 - mse: 4.1694 - val_loss: 7.3406 - val_mse: 6.3784
Epoch 164/3000
6/6 - 0s - loss: 5.1256 - mse: 4.1635 - val_loss: 7.3343 - val_mse: 6.3724
Epoch 165/3000
6/6 - 0s - loss: 5.1201 - mse: 4.1584 - val_loss: 7.3278 - val_mse: 6.3662
Epoch 166/3000
6/6 - 0s - loss: 5.1143 - mse: 4.1529 - val_loss: 7.3214 - val_mse: 6.3602
Epoch 167/3000
6/6 - 0s - loss: 5.1084 - mse: 4.1473 - val_loss: 7.3151 - val_mse: 6.3542
Epoch 168/3000
6/6 - 0s - loss: 5.1029 - mse: 4.1421 - val_loss: 7.3085 - val_mse: 6.3480
Epoch 169/3000
6/6 - 0s - loss: 5.0970 - mse: 4.1366 - val_loss: 7.3021 - val_mse: 6.3419
Epoch 170/3000
6/6 - 0s - loss: 5.0917 - mse: 4.1316 - val_loss: 7.2955 - val_mse: 6.3356
Epoch 171/3000
6/6 - 0s - loss: 5.0855 - mse: 4.1257 - val_loss: 7.2891 - val_mse: 6.3295
Epoch 172/3000
6/6 - 0s - loss: 5.0805 - mse: 4.1210 - val_loss: 7.2824 - val_mse: 6.3231
Epoch 173/3000
6/6 - 0s - loss: 5.0743 - mse: 4.1151 - val_loss: 7.2760 - val_mse: 6.3171
Epoch 174/3000
6/6 - 0s - loss: 5.0689 - mse: 4.1101 - val_loss: 7.2695 - val_mse: 6.3108
Epoch 175/3000
6/6 - 0s - loss: 5.0629 - mse: 4.1044 - val_loss: 7.2633 - val_mse: 6.3050
Epoch 176/3000
6/6 - 0s - loss: 5.0570 - mse: 4.0988 - val_loss: 7.2573 - val_mse: 6.2993
Epoch 177/3000
6/6 - 0s - loss: 5.0514 - mse: 4.0935 - val_loss: 7.2512 - val_mse: 6.2935
Epoch 178/3000
6/6 - 0s - loss: 5.0460 - mse: 4.0885 - val_loss: 7.2448 - val_mse: 6.2875
Epoch 179/3000
6/6 - 0s - loss: 5.0408 - mse: 4.0836 - val_loss: 7.2382 - val_mse: 6.2812
Epoch 180/3000
6/6 - 0s - loss: 5.0346 - mse: 4.0777 - val_loss: 7.2320 - val_mse: 6.2754
Epoch 181/3000
6/6 - 0s - loss: 5.0292 - mse: 4.0727 - val_loss: 7.2257 - val_mse: 6.2693
Epoch 182/3000
6/6 - 0s - loss: 5.0239 - mse: 4.0676 - val_loss: 7.2191 - val_mse: 6.2631
Epoch 183/3000
6/6 - 0s - loss: 5.0178 - mse: 4.0619 - val_loss: 7.2130 - val_mse: 6.2573
Epoch 184/3000
6/6 - 0s - loss: 5.0126 - mse: 4.0570 - val_loss: 7.2065 - val_mse: 6.2511
Epoch 185/3000
6/6 - 0s - loss: 5.0068 - mse: 4.0516 - val_loss: 7.2002 - val_mse: 6.2451
Epoch 186/3000
6/6 - 0s - loss: 5.0014 - mse: 4.0465 - val_loss: 7.1938 - val_mse: 6.2391
Epoch 187/3000
6/6 - 0s - loss: 4.9956 - mse: 4.0410 - val_loss: 7.1875 - val_mse: 6.2331
Epoch 188/3000
6/6 - 0s - loss: 4.9901 - mse: 4.0358 - val_loss: 7.1813 - val_mse: 6.2272
Epoch 189/3000
6/6 - 0s - loss: 4.9841 - mse: 4.0301 - val_loss: 7.1755 - val_mse: 6.2217
Epoch 190/3000
6/6 - 0s - loss: 4.9785 - mse: 4.0249 - val_loss: 7.1694 - val_mse: 6.2160
Epoch 191/3000
```

```
6/6 - 0s - loss: 4.9737 - mse: 4.0204 - val_loss: 7.1629 - val_mse: 6.2098
Epoch 192/3000
6/6 - 0s - loss: 4.9681 - mse: 4.0151 - val_loss: 7.1565 - val_mse: 6.2037
Epoch 193/3000
6/6 - 0s - loss: 4.9621 - mse: 4.0094 - val_loss: 7.1504 - val_mse: 6.1979
Epoch 194/3000
6/6 - 0s - loss: 4.9568 - mse: 4.0045 - val_loss: 7.1443 - val_mse: 6.1921
Epoch 195/3000
6/6 - 0s - loss: 4.9515 - mse: 3.9994 - val_loss: 7.1381 - val_mse: 6.1863
Epoch 196/3000
6/6 - 0s - loss: 4.9456 - mse: 3.9939 - val_loss: 7.1323 - val_mse: 6.1808
Epoch 197/3000
6/6 - 0s - loss: 4.9406 - mse: 3.9892 - val_loss: 7.1261 - val_mse: 6.1749
Epoch 198/3000
6/6 - 0s - loss: 4.9352 - mse: 3.9841 - val_loss: 7.1200 - val_mse: 6.1691
Epoch 199/3000
6/6 - 0s - loss: 4.9297 - mse: 3.9790 - val_loss: 7.1139 - val_mse: 6.1633
Epoch 200/3000
6/6 - 0s - loss: 4.9245 - mse: 3.9741 - val_loss: 7.1075 - val_mse: 6.1573
Epoch 201/3000
6/6 - 0s - loss: 4.9182 - mse: 3.9681 - val_loss: 7.1018 - val_mse: 6.1519
Epoch 202/3000
6/6 - 0s - loss: 4.9134 - mse: 3.9637 - val_loss: 7.0956 - val_mse: 6.1460
Epoch 203/3000
6/6 - 0s - loss: 4.9076 - mse: 3.9581 - val_loss: 7.0897 - val_mse: 6.1405
Epoch 204/3000
6/6 - 0s - loss: 4.9026 - mse: 3.9535 - val_loss: 7.0836 - val_mse: 6.1346
Epoch 205/3000
6/6 - 0s - loss: 4.8971 - mse: 3.9483 - val_loss: 7.0775 - val_mse: 6.1289
Epoch 206/3000
6/6 - 0s - loss: 4.8916 - mse: 3.9431 - val_loss: 7.0714 - val_mse: 6.1231
Epoch 207/3000
6/6 - 0s - loss: 4.8861 - mse: 3.9379 - val_loss: 7.0655 - val_mse: 6.1175
Epoch 208/3000
6/6 - 0s - loss: 4.8816 - mse: 3.9338 - val_loss: 7.0590 - val_mse: 6.1113
Epoch 209/3000
6/6 - 0s - loss: 4.8755 - mse: 3.9280 - val_loss: 7.0531 - val_mse: 6.1057
Epoch 210/3000
6/6 - 0s - loss: 4.8701 - mse: 3.9229 - val_loss: 7.0472 - val_mse: 6.1002
Epoch 211/3000
6/6 - 0s - loss: 4.8650 - mse: 3.9182 - val_loss: 7.0412 - val_mse: 6.0946
Epoch 212/3000
6/6 - 0s - loss: 4.8596 - mse: 3.9131 - val_loss: 7.0355 - val_mse: 6.0891
Epoch 213/3000
6/6 - 0s - loss: 4.8546 - mse: 3.9084 - val_loss: 7.0296 - val_mse: 6.0835
Epoch 214/3000
6/6 - 0s - loss: 4.8490 - mse: 3.9031 - val_loss: 7.0238 - val_mse: 6.0781
Epoch 215/3000
6/6 - 0s - loss: 4.8446 - mse: 3.8991 - val_loss: 7.0173 - val_mse: 6.0719
Epoch 216/3000
6/6 - 0s - loss: 4.8388 - mse: 3.8935 - val_loss: 7.0114 - val_mse: 6.0663
Epoch 217/3000
6/6 - 0s - loss: 4.8332 - mse: 3.8883 - val_loss: 7.0055 - val_mse: 6.0608
Epoch 218/3000
6/6 - 0s - loss: 4.8283 - mse: 3.8837 - val_loss: 6.9994 - val_mse: 6.0550
Epoch 219/3000
6/6 - 0s - loss: 4.8231 - mse: 3.8788 - val_loss: 6.9935 - val_mse: 6.0493
Epoch 220/3000
6/6 - 0s - loss: 4.8178 - mse: 3.8738 - val_loss: 6.9875 - val_mse: 6.0437
Epoch 221/3000
6/6 - 0s - loss: 4.8126 - mse: 3.8689 - val_loss: 6.9815 - val_mse: 6.0380
Epoch 222/3000
6/6 - 0s - loss: 4.8074 - mse: 3.8641 - val_loss: 6.9755 - val_mse: 6.0324
Epoch 223/3000
6/6 - 0s - loss: 4.8025 - mse: 3.8595 - val_loss: 6.9693 - val_mse: 6.0265
Epoch 224/3000
6/6 - 0s - loss: 4.7968 - mse: 3.8541 - val_loss: 6.9633 - val_mse: 6.0208
Epoch 225/3000
6/6 - 0s - loss: 4.7920 - mse: 3.8497 - val_loss: 6.9571 - val_mse: 6.0149
Epoch 226/3000
6/6 - 0s - loss: 4.7863 - mse: 3.8442 - val_loss: 6.9513 - val_mse: 6.0094
Epoch 227/3000
6/6 - 0s - loss: 4.7812 - mse: 3.8394 - val_loss: 6.9453 - val_mse: 6.0038
Epoch 228/3000
6/6 - 0s - loss: 4.7763 - mse: 3.8349 - val_loss: 6.9393 - val_mse: 5.9980
Epoch 229/3000
6/6 - 0s - loss: 4.7708 - mse: 3.8297 - val_loss: 6.9334 - val_mse: 5.9925
Epoch 230/3000
6/6 - 0s - loss: 4.7656 - mse: 3.8249 - val_loss: 6.9276 - val_mse: 5.9870
Epoch 231/3000
6/6 - 0s - loss: 4.7604 - mse: 3.8200 - val_loss: 6.9219 - val_mse: 5.9816
Epoch 232/3000
6/6 - 0s - loss: 4.7556 - mse: 3.8154 - val_loss: 6.9160 - val_mse: 5.9760
Epoch 233/3000
6/6 - 0s - loss: 4.7508 - mse: 3.8110 - val_loss: 6.9098 - val_mse: 5.9701
Epoch 234/3000
6/6 - 0s - loss: 4.7450 - mse: 3.8054 - val_loss: 6.9040 - val_mse: 5.9646
Epoch 235/3000
6/6 - 0s - loss: 4.7397 - mse: 3.8005 - val_loss: 6.8984 - val_mse: 5.9594
Epoch 236/3000
6/6 - 0s - loss: 4.7348 - mse: 3.7959 - val_loss: 6.8925 - val_mse: 5.9538
Epoch 237/3000
6/6 - 0s - loss: 4.7293 - mse: 3.7907 - val_loss: 6.8869 - val_mse: 5.9485
Epoch 238/3000
6/6 - 0s - loss: 4.7243 - mse: 3.7861 - val_loss: 6.8810 - val_mse: 5.9430
Epoch 239/3000
6/6 - 0s - loss: 4.7195 - mse: 3.7816 - val_loss: 6.8749 - val_mse: 5.9372
Epoch 240/3000
6/6 - 0s - loss: 4.7146 - mse: 3.7770 - val_loss: 6.8688 - val_mse: 5.9313
Epoch 241/3000
6/6 - 0s - loss: 4.7090 - mse: 3.7717 - val_loss: 6.8629 - val_mse: 5.9258
Epoch 242/3000
6/6 - 0s - loss: 4.7039 - mse: 3.7669 - val_loss: 6.8571 - val_mse: 5.9203
Epoch 243/3000
6/6 - 0s - loss: 4.6989 - mse: 3.7622 - val_loss: 6.8514 - val_mse: 5.9149
Epoch 244/3000
6/6 - 0s - loss: 4.6935 - mse: 3.7572 - val_loss: 6.8459 - val_mse: 5.9098
Epoch 245/3000
[illegible]
6/6 - 0s - loss: 3.6487 - mse: 2.7845 - val_loss: 5.6371 - val_mse: 4.7732
Epoch 492/3000
6/6 - 0s - loss: 3.6456 - mse: 2.7817 - val_loss: 5.6328 - val_mse: 4.7691
Epoch 493/3000
6/6 - 0s - loss: 3.6419 - mse: 2.7783 - val_loss: 5.6287 - val_mse: 4.7652
Epoch 494/3000
6/6 - 0s - loss: 3.6381 - mse: 2.7747 - val_loss: 5.6246 - val_mse: 4.7613
Epoch 495/3000
6/6 - 0s - loss: 3.6346 - mse: 2.7715 - val_loss: 5.6204 - val_mse: 4.7574
Epoch 496/3000
6/6 - 0s - loss: 3.6308 - mse: 2.7680 - val_loss: 5.6163 - val_mse: 4.7536
Epoch 497/3000
6/6 - 0s - loss: 3.6272 - mse: 2.7646 - val_loss: 5.6123 - val_mse: 4.7499
Epoch 498/3000
6/6 - 0s - loss: 3.6237 - mse: 2.7613 - val_loss: 5.6084 - val_mse: 4.7462
Epoch 499/3000
6/6 - 0s - loss: 3.6201 - mse: 2.7580 - val_loss: 5.6043 - val_mse: 4.7424
Epoch 500/3000
6/6 - 0s - loss: 3.6166 - mse: 2.7548 - val_loss: 5.6002 - val_mse: 4.7385
Epoch 501/3000
6/6 - 0s - loss: 3.6136 - mse: 2.7520 - val_loss: 5.5958 - val_mse: 4.7344
Epoch 502/3000
6/6 - 0s - loss: 3.6094 - mse: 2.7480 - val_loss: 5.5920 - val_mse: 4.7308
Epoch 503/3000
6/6 - 0s - loss: 3.6061 - mse: 2.7451 - val_loss: 5.5878 - val_mse: 4.7269
Epoch 504/3000
6/6 - 0s - loss: 3.6023 - mse: 2.7415 - val_loss: 5.5837 - val_mse: 4.7231
Epoch 505/3000
6/6 - 0s - loss: 3.5992 - mse: 2.7387 - val_loss: 5.5794 - val_mse: 4.7190
Epoch 506/3000
6/6 - 0s - loss: 3.5953 - mse: 2.7350 - val_loss: 5.5754 - val_mse: 4.7153
Epoch 507/3000
6/6 - 0s - loss: 3.5917 - mse: 2.7316 - val_loss: 5.5716 - val_mse: 4.7117
Epoch 508/3000
6/6 - 0s - loss: 3.5884 - mse: 2.7286 - val_loss: 5.5675 - val_mse: 4.7079
Epoch 509/3000
6/6 - 0s - loss: 3.5850 - mse: 2.7255 - val_loss: 5.5632 - val_mse: 4.7039
Epoch 510/3000
6/6 - 0s - loss: 3.5815 - mse: 2.7222 - val_loss: 5.5591 - val_mse: 4.7000
Epoch 511/3000
6/6 - 0s - loss: 3.5778 - mse: 2.7188 - val_loss: 5.5551 - val_mse: 4.6962
Epoch 512/3000
6/6 - 0s - loss: 3.5742 - mse: 2.7154 - val_loss: 5.5512 - val_mse: 4.6926
Epoch 513/3000
6/6 - 0s - loss: 3.5711 - mse: 2.7126 - val_loss: 5.5471 - val_mse: 4.6887
Epoch 514/3000
6/6 - 0s - loss: 3.5674 - mse: 2.7092 - val_loss: 5.5432 - val_mse: 4.6851
Epoch 515/3000
6/6 - 0s - loss: 3.5638 - mse: 2.7058 - val_loss: 5.5395 - val_mse: 4.6816
Epoch 516/3000
6/6 - 0s - loss: 3.5606 - mse: 2.7029 - val_loss: 5.5355 - val_mse: 4.6779
Epoch 517/3000
6/6 - 0s - loss: 3.5572 - mse: 2.6997 - val_loss: 5.5315 - val_mse: 4.6742
Epoch 518/3000
6/6 - 0s - loss: 3.5537 - mse: 2.6964 - val_loss: 5.5276 - val_mse: 4.6705
Epoch 519/3000
6/6 - 0s - loss: 3.5508 - mse: 2.6937 - val_loss: 5.5235 - val_mse: 4.6666
Epoch 520/3000
6/6 - 0s - loss: 3.5469 - mse: 2.6901 - val_loss: 5.5198 - val_mse: 4.6632
Epoch 521/3000
6/6 - 0s - loss: 3.5435 - mse: 2.6870 - val_loss: 5.5160 - val_mse: 4.6597
Epoch 522/3000
6/6 - 0s - loss: 3.5400 - mse: 2.6838 - val_loss: 5.5124 - val_mse: 4.6563
Epoch 523/3000
6/6 - 0s - loss: 3.5368 - mse: 2.6808 - val_loss: 5.5084 - val_mse: 4.6526
Epoch 524/3000
6/6 - 0s - loss: 3.5335 - mse: 2.6777 - val_loss: 5.5044 - val_mse: 4.6488
Epoch 525/3000
6/6 - 0s - loss: 3.5297 - mse: 2.6742 - val_loss: 5.5007 - val_mse: 4.6454
Epoch 526/3000
6/6 - 0s - loss: 3.5266 - mse: 2.6714 - val_loss: 5.4966 - val_mse: 4.6415
Epoch 527/3000
6/6 - 0s - loss: 3.5231 - mse: 2.6681 - val_loss: 5.4926 - val_mse: 4.6378
Epoch 528/3000
6/6 - 0s - loss: 3.5197 - mse: 2.6649 - val_loss: 5.4887 - val_mse: 4.6341
Epoch 529/3000
6/6 - 0s - loss: 3.5165 - mse: 2.6619 - val_loss: 5.4846 - val_mse: 4.6303
Epoch 530/3000
6/6 - 0s - loss: 3.5127 - mse: 2.6584 - val_loss: 5.4809 - val_mse: 4.6268
Epoch 531/3000
6/6 - 0s - loss: 3.5093 - mse: 2.6553 - val_loss: 5.4771 - val_mse: 4.6233
Epoch 532/3000
6/6 - 0s - loss: 3.5062 - mse: 2.6525 - val_loss: 5.4731 - val_mse: 4.6195
Epoch 533/3000
6/6 - 0s - loss: 3.5029 - mse: 2.6494 - val_loss: 5.4690 - val_mse: 4.6157
Epoch 534/3000
6/6 - 0s - loss: 3.4991 - mse: 2.6459 - val_loss: 5.4654 - val_mse: 4.6123
Epoch 535/3000
6/6 - 0s - loss: 3.4960 - mse: 2.6430 - val_loss: 5.4615 - val_mse: 4.6086
Epoch 536/3000
6/6 - 0s - loss: 3.4928 - mse: 2.6400 - val_loss: 5.4575 - val_mse: 4.6049
Epoch 537/3000
6/6 - 0s - loss: 3.4895 - mse: 2.6369 - val_loss: 5.4535 - val_mse: 4.6011
Epoch 538/3000
6/6 - 0s - loss: 3.4860 - mse: 2.6337 - val_loss: 5.4497 - val_mse: 4.5975
Epoch 539/3000
6/6 - 0s - loss: 3.4827 - mse: 2.6307 - val_loss: 5.4458 - val_mse: 4.5939
Epoch 540/3000
6/6 - 0s - loss: 3.4791 - mse: 2.6273 - val_loss: 5.4422 - val_mse: 4.5906
Epoch 541/3000
6/6 - 0s - loss: 3.4763 - mse: 2.6247 - val_loss: 5.4383 - val_mse: 4.5869
Epoch 542/3000
6/6 - 0s - loss: 3.4728 - mse: 2.6215 - val_loss: 5.4345 - val_mse: 4.5833
Epoch 543/3000
6/6 - 0s - loss: 3.4694 - mse: 2.6183 - val_loss: 5.4308 - val_mse: 4.5799
Epoch 544/3000
6/6 - 0s - loss: 3.4664 - mse: 2.6156 - val_loss: 5.4269 - val_mse: 4.5762
Epoch 545/3000
6/6 - 0s - loss: 3.4629 - mse: 2.6124 - val_loss: 5.4232 - val_mse: 4.5727
Epoch 546/3000
6/6 - 0s - loss: 3.4596 - mse: 2.6092 - val_loss: 5.4195 - val_mse: 4.5693
Epoch 547/3000
6/6 - 0s - loss: 3.4561 - mse: 2.6060 - val_loss: 5.4160 - val_mse: 4.5661
Epoch 548/3000
6/6 - 0s - loss: 3.4532 - mse: 2.6033 - val_loss: 5.4119 - val_mse: 4.5622
Epoch 549/3000
6/6 - 0s - loss: 3.4496 - mse: 2.6000 - val_loss: 5.4079 - val_mse: 4.5584
Epoch 550/3000
6/6 - 0s - loss: 3.4465 - mse: 2.5971 - val_loss: 5.4037 - val_mse: 4.5545
Epoch 551/3000
6/6 - 0s - loss: 3.4431 - mse: 2.5940 - val_loss: 5.3997 - val_mse: 4.5507
Epoch 552/3000
6/6 - 0s - loss: 3.4394 - mse: 2.5905 - val_loss: 5.3962 - val_mse: 4.5474
Epoch 553/3000
6/6 - 0s - loss: 3.4363 - mse: 2.5877 - val_loss: 5.3924 - val_mse: 4.5439
Epoch 554/3000
6/6 - 0s - loss: 3.4329 - mse: 2.5845 - val_loss: 5.3887 - val_mse: 4.5404
Epoch 555/3000
6/6 - 0s - loss: 3.4299 - mse: 2.5817 - val_loss: 5.3846 - val_mse: 4.5366
Epoch 556/3000
6/6 - 0s - loss: 3.4266 - mse: 2.5787 - val_loss: 5.3807 - val_mse: 4.5329
Epoch 557/3000
6/6 - 0s - loss: 3.4230 - mse: 2.5753 - val_loss: 5.3770 - val_mse: 4.5294
Epoch 558/3000
6/6 - 0s - loss: 3.4199 - mse: 2.5724 - val_loss: 5.3731 - val_mse: 4.5258
Epoch 559/3000
6/6 - 0s - loss: 3.4166 - mse: 2.5693 - val_loss: 5.3694 - val_mse: 4.5223
Epoch 560/3000
6/6 - 0s - loss: 3.4132 - mse: 2.5662 - val_loss: 5.3658 - val_mse: 4.5190
Epoch 561/3000
6/6 - 0s - loss: 3.4101 - mse: 2.5633 - val_loss: 5.3620 - val_mse: 4.5154
Epoch 562/3000
6/6 - 0s - loss: 3.4067 - mse: 2.5602 - val_loss: 5.3583 - val_mse: 4.5119
Epoch 563/3000
6/6 - 0s - loss: 3.4040 - mse: 2.5577 - val_loss: 5.3543 - val_mse: 4.5082
Epoch 564/3000
6/6 - 0s - loss: 3.4004 - mse: 2.5544 - val_loss: 5.3505 - val_mse: 4.5046
Epoch 565/3000
6/6 - 0s - loss: 3.3972 - mse: 2.5514 - val_loss: 5.3467 - val_mse: 4.5010
Epoch 566/3000
6/6 - 0s - loss: 3.3939 - mse: 2.5484 - val_loss: 5.3431 - val_mse: 4.4977
Epoch 567/3000
6/6 - 0s - loss: 3.3907 - mse: 2.5453 - val_loss: 5.3395 - val_mse: 4.4943
Epoch 568/3000
6/6 - 0s - loss: 3.3877 - mse: 2.5426 - val_loss: 5.3356 - val_mse: 4.4907
Epoch 569/3000
6/6 - 0s - loss: 3.3842 - mse: 2.5394 - val_loss: 5.3320 - val_mse: 4.4873
Epoch 570/3000
6/6 - 0s - loss: 3.3814 - mse: 2.5368 - val_loss: 5.3282 - val_mse: 4.4837
Epoch 571/3000
6/6 - 0s - loss: 3.3784 - mse: 2.5340 - val_loss: 5.3244 - val_mse: 4.4801
Epoch 572/3000
6/6 - 0s - loss: 3.3746 - mse: 2.5305 - val_loss: 5.3209 - val_mse: 4.4769
Epoch 573/3000
6/6 - 0s - loss: 3.3716 - mse: 2.5277 - val_loss: 5.3173 - val_mse: 4.4735
Epoch 574/3000
6/6 - 0s - loss: 3.3684 - mse: 2.5248 - val_loss: 5.3136 - val_mse: 4.4701
Epoch 575/3000
6/6 - 0s - loss: 3.3654 - mse: 2.5220 - val_loss: 5.3097 - val_mse: 4.4665
Epoch 576/3000
6/6 - 0s - loss: 3.3620 - mse: 2.5188 - val_loss: 5.3061 - val_mse: 4.4630
Epoch 577/3000
6/6 - 0s - loss: 3.3593 - mse: 2.5164 - val_loss: 5.3020 - val_mse: 4.4592
Epoch 578/3000
6/6 - 0s - loss: 3.3557 - mse: 2.5129 - val_loss: 5.2985 - val_mse: 4.4559
Epoch 579/3000
6/6 - 0s - loss: 3.3526 - mse: 2.5101 - val_loss: 5.2948 - val_mse: 4.4525
Epoch 580/3000
6/6 - 0s - loss: 3.3499 - mse: 2.5076 - val_loss: 5.2910 - val_mse: 4.4489
Epoch 581/3000
6/6 - 0s - loss: 3.3465 - mse: 2.5045 - val_loss: 5.2873 - val_mse: 4.4454
Epoch 582/3000
6/6 - 0s - loss: 3.3432 - mse: 2.5014 - val_loss: 5.2838 - val_mse: 4.4421
Epoch 583/3000
6/6 - 0s - loss: 3.3401 - mse: 2.4985 - val_loss: 5.2802 - val_mse: 4.4388
Epoch 584/3000
6/6 - 0s - loss: 3.3370 - mse: 2.4957 - val_loss: 5.2767 - val_mse: 4.4356
Epoch 585/3000
6/6 - 0s - loss: 3.3341 - mse: 2.4931 - val_loss: 5.2731 - val_mse: 4.4321
Epoch 586/3000
6/6 - 0s - loss: 3.3308 - mse: 2.4899 - val_loss: 5.2696 - val_mse: 4.4289
Epoch 587/3000
6/6 - 0s - loss: 3.3279 - mse: 2.4872 - val_loss: 5.2660 - val_mse: 4.4255
Epoch 588/3000
6/6 - 0s - loss: 3.3250 - mse: 2.4846 - val_loss: 5.2621 - val_mse: 4.4218
Epoch 589/3000
6/6 - 0s - loss: 3.3215 - mse: 2.4814 - val_loss: 5.2585 - val_mse: 4.4185
Epoch 590/3000
6/6 - 0s - loss: 3.3186 - mse: 2.4786 - val_loss: 5.2548 - val_mse: 4.4151
Epoch 591/3000
6/6 - 0s - loss: 3.3156 - mse: 2.4759 - val_loss: 5.2511 - val_mse: 4.4116
Epoch 592/3000
6/6 - 0s - loss: 3.3122 - mse: 2.4728 - val_loss: 5.2476 - val_mse: 4.4083
Epoch 593/3000
6/6 - 0s - loss: 3.3092 - mse: 2.4700 - val_loss: 5.2440 - val_mse: 4.4049
Epoch 594/3000
6/6 - 0s - loss: 3.3060 - mse: 2.4670 - val_loss: 5.2406 - val_mse: 4.4018
Epoch 595/3000
6/6 - 0s - loss: 3.3034 - mse: 2.4646 - val_loss: 5.2365 - val_mse: 4.3979
Epoch 596/3000
6/6 - 0s - loss: 3.3001 - mse: 2.4616 - val_loss: 5.2327 - val_mse: 4.3943
Epoch 597/3000
6/6 - 0s - loss: 3.2968 - mse: 2.4585 - val_loss: 5.2292 - val_mse: 4.3910
Epoch 598/3000
6/6 - 0s - loss: 3.2938 - mse: 2.4557 - val_loss: 5.2257 - val_mse: 4.3877
Epoch 599/3000
6/6 - 0s - loss: 3.2906 - mse: 2.4527 - val_loss: 5.2223 - val_mse: 4.3846
Epoch 600/3000
6/6 - 0s - loss: 3.2876 - mse: 2.4500 - val_loss: 5.2188 - val_mse: 4.3814
Epoch 601/3000
6/6 - 0s - loss: 3.2848 - mse: 2.4474 - val_loss: 5.2153 - val_mse: 4.3780
Epoch 602/3000
6/6 - 0s - loss: 3.2817 - mse: 2.4445 - val_loss: 5.2118 - val_mse: 4.3748
Epoch 603/3000
6/6 - 0s - loss: 3.2788 - mse: 2.4419 - val_loss: 5.2082 - val_mse: 4.3714
Epoch 604/3000
6/6 - 0s - loss: 3.2758 - mse: 2.4390 - val_loss: 5.2047 - val_mse: 4.3681
Epoch 605/3000
6/6 - 0s - loss: 3.2730 - mse: 2.4365 - val_loss: 5.2010 - val_mse: 4.3647
Epoch 606/3000
6/6 - 0s - loss: 3.2698 - mse: 2.4335 - val_loss: 5.1975 - val_mse: 4.3613
Epoch 607/3000
6/6 - 0s - loss: 3.2666 - mse: 2.4305 - val_loss: 5.1940 - val_mse: 4.3581
Epoch 608/3000
6/6 - 0s - loss: 3.2639 - mse: 2.4281 - val_loss: 5.1906 - val_mse: 4.3549
Epoch 609/3000
6/6 - 0s - loss: 3.2607 - mse: 2.4252 - val_loss: 5.1871 - val_mse: 4.3516
Epoch 610/3000
6/6 - 0s - loss: 3.2578 - mse: 2.4225 - val_loss: 5.1835 - val_mse: 4.3483
Epoch 611/3000
6/6 - 0s - loss: 3.2552 - mse: 2.4201 - val_loss: 5.1797 - val_mse: 4.3447
Epoch 612/3000
6/6 - 0s - loss: 3.2518 - mse: 2.4169 - val_loss: 5.1763 - val_mse: 4.3415
Epoch 613/3000
6/6 - 0s - loss: 3.2486 - mse: 2.4140 - val_loss: 5.1730 - val_mse: 4.3385
Epoch 614/3000
6/6 - 0s - loss: 3.2458 - mse: 2.4113 - val_loss: 5.1695 - val_mse: 4.3351
Epoch 615/3000
6/6 - 0s - loss: 3.2428 - mse: 2.4085 - val_loss: 5.1659 - val_mse: 4.3318
Epoch 616/3000
6/6 - 0s - loss: 3.2402 - mse: 2.4062 - val_loss: 5.1621 - val_mse: 4.3283
Epoch 617/3000
6/6 - 0s - loss: 3.2368 - mse: 2.4030 - val_loss: 5.1590 - val_mse: 4.3253
Epoch 618/3000
6/6 - 0s - loss: 3.2340 - mse: 2.4005 - val_loss: 5.1555 - val_mse: 4.3221
Epoch 619/3000
6/6 - 0s - loss: 3.2309 - mse: 2.3976 - val_loss: 5.1521 - val_mse: 4.3189
Epoch 620/3000
6/6 - 0s - loss: 3.2280 - mse: 2.3949 - val_loss: 5.1486 - val_mse: 4.3157
Epoch 621/3000
6/6 - 0s - loss: 3.2252 - mse: 2.3924 - val_loss: 5.1449 - val_mse: 4.3122
Epoch 622/3000
6/6 - 0s - loss: 3.2222 - mse: 2.3896 - val_loss: 5.1415 - val_mse: 4.3090
Epoch 623/3000
6/6 - 0s - loss: 3.2191 - mse: 2.3867 - val_loss: 5.1381 - val_mse: 4.3058
Epoch 624/3000
6/6 - 0s - loss: 3.2163 - mse: 2.3841 - val_loss: 5.1346 - val_mse: 4.3026
Epoch 625/3000
6/6 - 0s - loss: 3.2132 - mse: 2.3813 - val_loss: 5.1312 - val_mse: 4.2993
Epoch 626/3000
6/6 - 0s - loss: 3.2104 - mse: 2.3787 - val_loss: 5.1277 - val_mse: 4.2960
Epoch 627/3000
6/6 - 0s - loss: 3.2075 - mse: 2.3759 - val_loss: 5.1242 - val_mse: 4.2928
Epoch 628/3000
6/6 - 0s - loss: 3.2045 - mse: 2.3732 - val_loss: 5.1207 - val_mse: 4.2895
Epoch 629/3000
6/6 - 0s - loss: 3.2016 - mse: 2.3705 - val_loss: 5.1173 - val_mse: 4.2864
Epoch 630/3000
6/6 - 0s - loss: 3.1989 - mse: 2.3680 - val_loss: 5.1137 - val_mse: 4.2830
Epoch 631/3000
6/6 - 0s - loss: 3.1960 - mse: 2.3653 - val_loss: 5.1103 - val_mse: 4.2797
Epoch 632/3000
6/6 - 0s - loss: 3.1927 - mse: 2.3623 - val_loss: 5.1070 - val_mse: 4.2767
Epoch 633/3000
6/6 - 0s - loss: 3.1901 - mse: 2.3599 - val_loss: 5.1036 - val_mse: 4.2735
Epoch 634/3000
6/6 - 0s - loss: 3.1872 - mse: 2.3572 - val_loss: 5.1000 - val_mse: 4.2702
Epoch 635/3000
6/6 - 0s - loss: 3.1842 - mse: 2.3544 - val_loss: 5.0967 - val_mse: 4.2671
Epoch 636/3000
6/6 - 0s - loss: 3.1814 - mse: 2.3518 - val_loss: 5.0934 - val_mse: 4.2640
Epoch 637/3000
6/6 - 0s - loss: 3.1785 - mse: 2.3492 - val_loss: 5.0899 - val_mse: 4.2607
Epoch 638/3000
6/6 - 0s - loss: 3.1759 - mse: 2.3468 - val_loss: 5.0865 - val_mse: 4.2575
Epoch 639/3000
6/6 - 0s - loss: 3.1730 - mse: 2.3441 - val_loss: 5.0829 - val_mse: 4.2541
Epoch 640/3000
6/6 - 0s - loss: 3.1700 - mse: 2.3413 - val_loss: 5.0796 - val_mse: 4.2510
Epoch 641/3000
6/6 - 0s - loss: 3.1672 - mse: 2.3387 - val_loss: 5.0762 - val_mse: 4.2479
Epoch 642/3000
6/6 - 0s - loss: 3.1641 - mse: 2.3359 - val_loss: 5.0732 - val_mse: 4.2451
Epoch 643/3000
6/6 - 0s - loss: 3.1614 - mse: 2.3334 - val_loss: 5.0698 - val_mse: 4.2419
Epoch 644/3000
6/6 - 0s - loss: 3.1586 - mse: 2.3308 - val_loss: 5.0665 - val_mse: 4.2389
Epoch 645/3000
6/6 - 0s - loss: 3.1559 - mse: 2.3283 - val_loss: 5.0630 - val_mse: 4.2355
Epoch 646/3000
6/6 - 0s - loss: 3.1531 - mse: 2.3257 - val_loss: 5.0594 - val_mse: 4.2321
Epoch 647/3000
6/6 - 0s - loss: 3.1498 - mse: 2.3227 - val_loss: 5.0562 - val_mse: 4.2291
Epoch 648/3000
6/6 - 0s - loss: 3.1471 - mse: 2.3201 - val_loss: 5.0528 - val_mse: 4.2260
Epoch 649/3000
6/6 - 0s - loss: 3.1446 - mse: 2.3178 - val_loss: 5.0493 - val_mse: 4.2227
Epoch 650/3000
6/6 - 0s - loss: 3.1413 - mse: 2.3148 - val_loss: 5.0462 - val_mse: 4.2198
Epoch 651/3000
6/6 - 0s - loss: 3.1388 - mse: 2.3125 - val_loss: 5.0427 - val_mse: 4.2165
Epoch 652/3000
6/6 - 0s - loss: 3.1357 - mse: 2.3096 - val_loss: 5.0396 - val_mse: 4.2137
Epoch 653/3000
6/6 - 0s - loss: 3.1330 - mse: 2.3071 - val_loss: 5.0363 - val_mse: 4.2106
Epoch 654/3000
6/6 - 0s - loss: 3.1302 - mse: 2.3046 - val_loss: 5.0328 - val_mse: 4.2073
Epoch 655/3000
6/6 - 0s - loss: 3.1273 - mse: 2.3019 - val_loss: 5.0295 - val_mse: 4.2042
Epoch 656/3000
6/6 - 0s - loss: 3.1243 - mse: 2.2991 - val_loss: 5.0263 - val_mse: 4.2012
Epoch 657/3000
6/6 - 0s - loss: 3.1219 - mse: 2.2969 - val_loss: 5.0227 - val_mse: 4.1979
Epoch 658/3000
6/6 - 0s - loss: 3.1190 - mse: 2.2943 - val_loss: 5.0192 - val_mse: 4.1946
Epoch 659/3000
6/6 - 0s - loss: 3.1160 - mse: 2.2914 - val_loss: 5.0160 - val_mse: 4.1916
Epoch 660/3000
6/6 - 0s - loss: 3.1134 - mse: 2.2890 - val_loss: 5.0128 - val_mse: 4.1886
Epoch 661/3000
6/6 - 0s - loss: 3.1107 - mse: 2.2865 - val_loss: 5.0096 - val_mse: 4.1855
Epoch 662/3000
6/6 - 0s - loss: 3.1078 - mse: 2.2839 - val_loss: 5.0064 - val_mse: 4.1826
Epoch 663/3000
6/6 - 0s - loss: 3.1053 - mse: 2.2816 - val_loss: 5.0030 - val_mse: 4.1794
Epoch 664/3000
6/6 - 0s - loss: 3.1023 - mse: 2.2788 - val_loss: 5.0000 - val_mse: 4.1767
Epoch 665/3000
6/6 - 0s - loss: 3.0996 - mse: 2.2764 - val_loss: 4.9969 - val_mse: 4.1738
Epoch 666/3000
6/6 - 0s - loss: 3.0974 - mse: 2.2743 - val_loss: 4.9935 - val_mse: 4.1706
Epoch 667/3000
6/6 - 0s - loss: 3.0943 - mse: 2.2714 - val_loss: 4.9904 - val_mse: 4.1677
Epoch 668/3000
6/6 - 0s - loss: 3.0917 - mse: 2.2691 - val_loss: 4.9872 - val_mse: 4.1647
Epoch 669/3000
6/6 - 0s - loss: 3.0888 - mse: 2.2664 - val_loss: 4.9841 - val_mse: 4.1619
Epoch 670/3000
6/6 - 0s - loss: 3.0861 - mse: 2.2639 - val_loss: 4.9808 - val_mse: 4.1587
```

[illegible]

```
Epoch 907/3000
6/6 - 0s - loss: 2.5960 - mse: 1.8218 - val_loss: 4.4007 - val_mse: 3.6266
Epoch 908/3000
6/6 - 0s - loss: 2.5942 - mse: 1.8202 - val_loss: 4.3990 - val_mse: 3.6251
Epoch 909/3000
6/6 - 0s - loss: 2.5927 - mse: 1.8189 - val_loss: 4.3974 - val_mse: 3.6238
Epoch 910/3000
6/6 - 0s - loss: 2.5911 - mse: 1.8175 - val_loss: 4.3956 - val_mse: 3.6221
Epoch 911/3000
6/6 - 0s - loss: 2.5896 - mse: 1.8162 - val_loss: 4.3938 - val_mse: 3.6206
Epoch 912/3000
6/6 - 0s - loss: 2.5881 - mse: 1.8149 - val_loss: 4.3922 - val_mse: 3.6191
Epoch 913/3000
6/6 - 0s - loss: 2.5868 - mse: 1.8138 - val_loss: 4.3903 - val_mse: 3.6174
Epoch 914/3000
6/6 - 0s - loss: 2.5850 - mse: 1.8122 - val_loss: 4.3888 - val_mse: 3.6161
Epoch 915/3000
6/6 - 0s - loss: 2.5838 - mse: 1.8112 - val_loss: 4.3871 - val_mse: 3.6146
Epoch 916/3000
6/6 - 0s - loss: 2.5824 - mse: 1.8100 - val_loss: 4.3852 - val_mse: 3.6129
Epoch 917/3000
6/6 - 0s - loss: 2.5807 - mse: 1.8085 - val_loss: 4.3837 - val_mse: 3.6117
Epoch 918/3000
6/6 - 0s - loss: 2.5792 - mse: 1.8072 - val_loss: 4.3823 - val_mse: 3.6104
Epoch 919/3000
6/6 - 0s - loss: 2.5778 - mse: 1.8060 - val_loss: 4.3807 - val_mse: 3.6091
Epoch 920/3000
6/6 - 0s - loss: 2.5763 - mse: 1.8047 - val_loss: 4.3792 - val_mse: 3.6077
Epoch 921/3000
6/6 - 0s - loss: 2.5749 - mse: 1.8035 - val_loss: 4.3775 - val_mse: 3.6062
Epoch 922/3000
6/6 - 0s - loss: 2.5735 - mse: 1.8023 - val_loss: 4.3758 - val_mse: 3.6047
Epoch 923/3000
6/6 - 0s - loss: 2.5719 - mse: 1.8008 - val_loss: 4.3742 - val_mse: 3.6033
Epoch 924/3000
6/6 - 0s - loss: 2.5705 - mse: 1.7997 - val_loss: 4.3726 - val_mse: 3.6020
Epoch 925/3000
6/6 - 0s - loss: 2.5689 - mse: 1.7983 - val_loss: 4.3710 - val_mse: 3.6005
Epoch 926/3000
6/6 - 0s - loss: 2.5675 - mse: 1.7971 - val_loss: 4.3693 - val_mse: 3.5990
Epoch 927/3000
6/6 - 0s - loss: 2.5661 - mse: 1.7959 - val_loss: 4.3677 - val_mse: 3.5976
Epoch 928/3000
6/6 - 0s - loss: 2.5647 - mse: 1.7947 - val_loss: 4.3660 - val_mse: 3.5961
Epoch 929/3000
6/6 - 0s - loss: 2.5632 - mse: 1.7934 - val_loss: 4.3646 - val_mse: 3.5949
Epoch 930/3000
6/6 - 0s - loss: 2.5618 - mse: 1.7922 - val_loss: 4.3629 - val_mse: 3.5934
Epoch 931/3000
6/6 - 0s - loss: 2.5604 - mse: 1.7910 - val_loss: 4.3614 - val_mse: 3.5921
Epoch 932/3000
6/6 - 0s - loss: 2.5590 - mse: 1.7897 - val_loss: 4.3598 - val_mse: 3.5907
Epoch 933/3000
6/6 - 0s - loss: 2.5576 - mse: 1.7886 - val_loss: 4.3581 - val_mse: 3.5892
Epoch 934/3000
6/6 - 0s - loss: 2.5561 - mse: 1.7873 - val_loss: 4.3566 - val_mse: 3.5879
Epoch 935/3000
6/6 - 0s - loss: 2.5548 - mse: 1.7862 - val_loss: 4.3551 - val_mse: 3.5866
Epoch 936/3000
6/6 - 0s - loss: 2.5533 - mse: 1.7849 - val_loss: 4.3538 - val_mse: 3.5855
Epoch 937/3000
6/6 - 0s - loss: 2.5521 - mse: 1.7839 - val_loss: 4.3520 - val_mse: 3.5839
Epoch 938/3000
6/6 - 0s - loss: 2.5506 - mse: 1.7825 - val_loss: 4.3505 - val_mse: 3.5826
Epoch 939/3000
6/6 - 0s - loss: 2.5492 - mse: 1.7814 - val_loss: 4.3492 - val_mse: 3.5815
Epoch 940/3000
6/6 - 0s - loss: 2.5478 - mse: 1.7802 - val_loss: 4.3478 - val_mse: 3.5803
Epoch 941/3000
6/6 - 0s - loss: 2.5466 - mse: 1.7792 - val_loss: 4.3461 - val_mse: 3.5788
Epoch 942/3000
6/6 - 0s - loss: 2.5453 - mse: 1.7781 - val_loss: 4.3446 - val_mse: 3.5775
Epoch 943/3000
6/6 - 0s - loss: 2.5437 - mse: 1.7767 - val_loss: 4.3433 - val_mse: 3.5764
Epoch 944/3000
6/6 - 0s - loss: 2.5424 - mse: 1.7756 - val_loss: 4.3418 - val_mse: 3.5751
Epoch 945/3000
6/6 - 0s - loss: 2.5410 - mse: 1.7744 - val_loss: 4.3404 - val_mse: 3.5738
Epoch 946/3000
6/6 - 0s - loss: 2.5396 - mse: 1.7731 - val_loss: 4.3390 - val_mse: 3.5727
Epoch 947/3000
6/6 - 0s - loss: 2.5382 - mse: 1.7720 - val_loss: 4.3374 - val_mse: 3.5713
Epoch 948/3000
6/6 - 0s - loss: 2.5369 - mse: 1.7709 - val_loss: 4.3359 - val_mse: 3.5699
Epoch 949/3000
6/6 - 0s - loss: 2.5355 - mse: 1.7697 - val_loss: 4.3342 - val_mse: 3.5685
Epoch 950/3000
6/6 - 0s - loss: 2.5342 - mse: 1.7685 - val_loss: 4.3326 - val_mse: 3.5670
Epoch 951/3000
6/6 - 0s - loss: 2.5328 - mse: 1.7674 - val_loss: 4.3309 - val_mse: 3.5655
Epoch 952/3000
6/6 - 0s - loss: 2.5313 - mse: 1.7660 - val_loss: 4.3295 - val_mse: 3.5643
Epoch 953/3000
6/6 - 0s - loss: 2.5300 - mse: 1.7650 - val_loss: 4.3280 - val_mse: 3.5630
Epoch 954/3000
6/6 - 0s - loss: 2.5286 - mse: 1.7637 - val_loss: 4.3267 - val_mse: 3.5619
Epoch 955/3000
6/6 - 0s - loss: 2.5272 - mse: 1.7626 - val_loss: 4.3254 - val_mse: 3.5609
Epoch 956/3000
6/6 - 0s - loss: 2.5261 - mse: 1.7617 - val_loss: 4.3239 - val_mse: 3.5596
Epoch 957/3000
6/6 - 0s - loss: 2.5249 - mse: 1.7606 - val_loss: 4.3225 - val_mse: 3.5584
Epoch 958/3000
6/6 - 0s - loss: 2.5235 - mse: 1.7594 - val_loss: 4.3212 - val_mse: 3.5572
Epoch 959/3000
6/6 - 0s - loss: 2.5222 - mse: 1.7583 - val_loss: 4.3199 - val_mse: 3.5561
Epoch 960/3000
6/6 - 0s - loss: 2.5208 - mse: 1.7571 - val_loss: 4.3188 - val_mse: 3.5552
Epoch 961/3000
6/6 - 0s - loss: 2.5196 - mse: 1.7561 - val_loss: 4.3175 - val_mse: 3.5542
Epoch 962/3000
6/6 - 0s - loss: 2.5182 - mse: 1.7550 - val_loss: 4.3161 - val_mse: 3.5530
Epoch 963/3000
6/6 - 0s - loss: 2.5173 - mse: 1.7542 - val_loss: 4.3145 - val_mse: 3.5515
Epoch 964/3000
6/6 - 0s - loss: 2.5156 - mse: 1.7527 - val_loss: 4.3133 - val_mse: 3.5506
Epoch 965/3000
6/6 - 0s - loss: 2.5144 - mse: 1.7517 - val_loss: 4.3120 - val_mse: 3.5495
Epoch 966/3000
6/6 - 0s - loss: 2.5132 - mse: 1.7507 - val_loss: 4.3107 - val_mse: 3.5484
Epoch 967/3000
6/6 - 0s - loss: 2.5118 - mse: 1.7496 - val_loss: 4.3095 - val_mse: 3.5474
Epoch 968/3000
6/6 - 0s - loss: 2.5106 - mse: 1.7486 - val_loss: 4.3082 - val_mse: 3.5463
Epoch 969/3000
6/6 - 0s - loss: 2.5094 - mse: 1.7475 - val_loss: 4.3069 - val_mse: 3.5451
Epoch 970/3000
6/6 - 0s - loss: 2.5079 - mse: 1.7463 - val_loss: 4.3056 - val_mse: 3.5441
Epoch 971/3000
6/6 - 0s - loss: 2.5067 - mse: 1.7452 - val_loss: 4.3042 - val_mse: 3.5429
Epoch 972/3000
6/6 - 0s - loss: 2.5057 - mse: 1.7444 - val_loss: 4.3026 - val_mse: 3.5415
Epoch 973/3000
6/6 - 0s - loss: 2.5041 - mse: 1.7431 - val_loss: 4.3015 - val_mse: 3.5406
Epoch 974/3000
6/6 - 0s - loss: 2.5031 - mse: 1.7423 - val_loss: 4.2997 - val_mse: 3.5390
Epoch 975/3000
6/6 - 0s - loss: 2.5016 - mse: 1.7409 - val_loss: 4.2983 - val_mse: 3.5378
Epoch 976/3000
6/6 - 0s - loss: 2.5002 - mse: 1.7397 - val_loss: 4.2973 - val_mse: 3.5369
Epoch 977/3000
6/6 - 0s - loss: 2.4991 - mse: 1.7388 - val_loss: 4.2957 - val_mse: 3.5356
Epoch 978/3000
6/6 - 0s - loss: 2.4978 - mse: 1.7377 - val_loss: 4.2945 - val_mse: 3.5345
Epoch 979/3000
6/6 - 0s - loss: 2.4965 - mse: 1.7366 - val_loss: 4.2932 - val_mse: 3.5334
Epoch 980/3000
6/6 - 0s - loss: 2.4953 - mse: 1.7356 - val_loss: 4.2919 - val_mse: 3.5323
Epoch 981/3000
6/6 - 0s - loss: 2.4940 - mse: 1.7345 - val_loss: 4.2906 - val_mse: 3.5312
Epoch 982/3000
6/6 - 0s - loss: 2.4927 - mse: 1.7334 - val_loss: 4.2893 - val_mse: 3.5301
Epoch 983/3000
6/6 - 0s - loss: 2.4915 - mse: 1.7324 - val_loss: 4.2883 - val_mse: 3.5293
Epoch 984/3000
6/6 - 0s - loss: 2.4903 - mse: 1.7314 - val_loss: 4.2871 - val_mse: 3.5283
Epoch 985/3000
6/6 - 0s - loss: 2.4890 - mse: 1.7303 - val_loss: 4.2860 - val_mse: 3.5274
Epoch 986/3000
6/6 - 0s - loss: 2.4878 - mse: 1.7293 - val_loss: 4.2847 - val_mse: 3.5264
Epoch 987/3000
6/6 - 0s - loss: 2.4866 - mse: 1.7283 - val_loss: 4.2835 - val_mse: 3.5253
Epoch 988/3000
6/6 - 0s - loss: 2.4854 - mse: 1.7273 - val_loss: 4.2822 - val_mse: 3.5242
Epoch 989/3000
6/6 - 0s - loss: 2.4841 - mse: 1.7262 - val_loss: 4.2810 - val_mse: 3.5232
Epoch 990/3000
6/6 - 0s - loss: 2.4829 - mse: 1.7252 - val_loss: 4.2797 - val_mse: 3.5221
Epoch 991/3000
6/6 - 0s - loss: 2.4817 - mse: 1.7242 - val_loss: 4.2784 - val_mse: 3.5211
Epoch 992/3000
6/6 - 0s - loss: 2.4806 - mse: 1.7233 - val_loss: 4.2771 - val_mse: 3.5199
Epoch 993/3000
6/6 - 0s - loss: 2.4791 - mse: 1.7219 - val_loss: 4.2759 - val_mse: 3.5189
Epoch 994/3000
6/6 - 0s - loss: 2.4782 - mse: 1.7213 - val_loss: 4.2746 - val_mse: 3.5178
Epoch 995/3000
6/6 - 0s - loss: 2.4767 - mse: 1.7199 - val_loss: 4.2734 - val_mse: 3.5168
Epoch 996/3000
6/6 - 0s - loss: 2.4754 - mse: 1.7189 - val_loss: 4.2722 - val_mse: 3.5158
Epoch 997/3000
6/6 - 0s - loss: 2.4743 - mse: 1.7179 - val_loss: 4.2710 - val_mse: 3.5148
Epoch 998/3000
6/6 - 0s - loss: 2.4732 - mse: 1.7171 - val_loss: 4.2695 - val_mse: 3.5135
Epoch 999/3000
6/6 - 0s - loss: 2.4718 - mse: 1.7159 - val_loss: 4.2687 - val_mse: 3.5129
Epoch 1000/3000
6/6 - 0s - loss: 2.4708 - mse: 1.7151 - val_loss: 4.2674 - val_mse: 3.5118
Epoch 1001/3000
6/6 - 0s - loss: 2.4696 - mse: 1.7140 - val_loss: 4.2662 - val_mse: 3.5108
Epoch 1002/3000
6/6 - 0s - loss: 2.4683 - mse: 1.7130 - val_loss: 4.2652 - val_mse: 3.5100
Epoch 1003/3000
6/6 - 0s - loss: 2.4673 - mse: 1.7121 - val_loss: 4.2640 - val_mse: 3.5090
Epoch 1004/3000
6/6 - 0s - loss: 2.4659 - mse: 1.7110 - val_loss: 4.2631 - val_mse: 3.5083
Epoch 1005/3000
6/6 - 0s - loss: 2.4648 - mse: 1.7101 - val_loss: 4.2619 - val_mse: 3.5073
Epoch 1006/3000
6/6 - 0s - loss: 2.4636 - mse: 1.7090 - val_loss: 4.2608 - val_mse: 3.5064
Epoch 1007/3000
6/6 - 0s - loss: 2.4625 - mse: 1.7082 - val_loss: 4.2596 - val_mse: 3.5054
Epoch 1008/3000
6/6 - 0s - loss: 2.4613 - mse: 1.7071 - val_loss: 4.2584 - val_mse: 3.5044
Epoch 1009/3000
6/6 - 0s - loss: 2.4601 - mse: 1.7061 - val_loss: 4.2574 - val_mse: 3.5036
Epoch 1010/3000
6/6 - 0s - loss: 2.4588 - mse: 1.7051 - val_loss: 4.2564 - val_mse: 3.5028
Epoch 1011/3000
6/6 - 0s - loss: 2.4578 - mse: 1.7043 - val_loss: 4.2551 - val_mse: 3.5016
Epoch 1012/3000
6/6 - 0s - loss: 2.4565 - mse: 1.7032 - val_loss: 4.2540 - val_mse: 3.5008
Epoch 1013/3000
6/6 - 0s - loss: 2.4555 - mse: 1.7023 - val_loss: 4.2527 - val_mse: 3.4997
Epoch 1014/3000
6/6 - 0s - loss: 2.4541 - mse: 1.7012 - val_loss: 4.2519 - val_mse: 3.4990
Epoch 1015/3000
6/6 - 0s - loss: 2.4531 - mse: 1.7004 - val_loss: 4.2507 - val_mse: 3.4981
Epoch 1016/3000
6/6 - 0s - loss: 2.4520 - mse: 1.6995 - val_loss: 4.2495 - val_mse: 3.4971
Epoch 1017/3000
6/6 - 0s - loss: 2.4507 - mse: 1.6983 - val_loss: 4.2484 - val_mse: 3.4962
Epoch 1018/3000
6/6 - 0s - loss: 2.4496 - mse: 1.6975 - val_loss: 4.2472 - val_mse: 3.4952
Epoch 1019/3000
6/6 - 0s - loss: 2.4487 - mse: 1.6967 - val_loss: 4.2460 - val_mse: 3.4942
Epoch 1020/3000
6/6 - 0s - loss: 2.4474 - mse: 1.6956 - val_loss: 4.2450 - val_mse: 3.4933
Epoch 1021/3000
6/6 - 0s - loss: 2.4462 - mse: 1.6946 - val_loss: 4.2441 - val_mse: 3.4927
Epoch 1022/3000
6/6 - 0s - loss: 2.4452 - mse: 1.6938 - val_loss: 4.2430 - val_mse: 3.4917
Epoch 1023/3000
6/6 - 0s - loss: 2.4439 - mse: 1.6928 - val_loss: 4.2421 - val_mse: 3.4910
Epoch 1024/3000
6/6 - 0s - loss: 2.4428 - mse: 1.6918 - val_loss: 4.2413 - val_mse: 3.4904
Epoch 1025/3000
6/6 - 0s - loss: 2.4417 - mse: 1.6909 - val_loss: 4.2402 - val_mse: 3.4896
Epoch 1026/3000
6/6 - 0s - loss: 2.4407 - mse: 1.6901 - val_loss: 4.2391 - val_mse: 3.4886
Epoch 1027/3000
6/6 - 0s - loss: 2.4395 - mse: 1.6892 - val_loss: 4.2379 - val_mse: 3.4877
Epoch 1028/3000
6/6 - 0s - loss: 2.4383 - mse: 1.6882 - val_loss: 4.2368 - val_mse: 3.4867
Epoch 1029/3000
6/6 - 0s - loss: 2.4372 - mse: 1.6873 - val_loss: 4.2359 - val_mse: 3.4860
Epoch 1030/3000
6/6 - 0s - loss: 2.4362 - mse: 1.6864 - val_loss: 4.2349 - val_mse: 3.4853
Epoch 1031/3000
6/6 - 0s - loss: 2.4352 - mse: 1.6857 - val_loss: 4.2336 - val_mse: 3.4842
Epoch 1032/3000
6/6 - 0s - loss: 2.4339 - mse: 1.6846 - val_loss: 4.2326 - val_mse: 3.4834
Epoch 1033/3000
6/6 - 0s - loss: 2.4330 - mse: 1.6838 - val_loss: 4.2315 - val_mse: 3.4825
Epoch 1034/3000
6/6 - 0s - loss: 2.4317 - mse: 1.6827 - val_loss: 4.2306 - val_mse: 3.4818
Epoch 1035/3000
6/6 - 0s - loss: 2.4307 - mse: 1.6819 - val_loss: 4.2298 - val_mse: 3.4811
Epoch 1036/3000
6/6 - 0s - loss: 2.4297 - mse: 1.6812 - val_loss: 4.2287 - val_mse: 3.4803
Epoch 1037/3000
6/6 - 0s - loss: 2.4286 - mse: 1.6802 - val_loss: 4.2275 - val_mse: 3.4793
Epoch 1038/3000
6/6 - 0s - loss: 2.4273 - mse: 1.6792 - val_loss: 4.2266 - val_mse: 3.4785
Epoch 1039/3000
6/6 - 0s - loss: 2.4263 - mse: 1.6783 - val_loss: 4.2256 - val_mse: 3.4777
Epoch 1040/3000
6/6 - 0s - loss: 2.4253 - mse: 1.6775 - val_loss: 4.2246 - val_mse: 3.4770
Epoch 1041/3000
6/6 - 0s - loss: 2.4240 - mse: 1.6764 - val_loss: 4.2240 - val_mse: 3.4766
Epoch 1042/3000
6/6 - 0s - loss: 2.4231 - mse: 1.6758 - val_loss: 4.2229 - val_mse: 3.4756
Epoch 1043/3000
6/6 - 0s - loss: 2.4219 - mse: 1.6747 - val_loss: 4.2220 - val_mse: 3.4749
Epoch 1044/3000
6/6 - 0s - loss: 2.4208 - mse: 1.6739 - val_loss: 4.2212 - val_mse: 3.4744
Epoch 1045/3000
6/6 - 0s - loss: 2.4199 - mse: 1.6731 - val_loss: 4.2201 - val_mse: 3.4735
Epoch 1046/3000
6/6 - 0s - loss: 2.4187 - mse: 1.6722 - val_loss: 4.2196 - val_mse: 3.4732
Epoch 1047/3000
6/6 - 0s - loss: 2.4178 - mse: 1.6714 - val_loss: 4.2184 - val_mse: 3.4721
Epoch 1048/3000
6/6 - 0s - loss: 2.4165 - mse: 1.6704 - val_loss: 4.2175 - val_mse: 3.4715
Epoch 1049/3000
6/6 - 0s - loss: 2.4155 - mse: 1.6695 - val_loss: 4.2165 - val_mse: 3.4707
Epoch 1050/3000
6/6 - 0s - loss: 2.4144 - mse: 1.6686 - val_loss: 4.2156 - val_mse: 3.4700
Epoch 1051/3000
6/6 - 0s - loss: 2.4134 - mse: 1.6679 - val_loss: 4.2144 - val_mse: 3.4689
Epoch 1052/3000
6/6 - 0s - loss: 2.4122 - mse: 1.6668 - val_loss: 4.2135 - val_mse: 3.4682
Epoch 1053/3000
6/6 - 0s - loss: 2.4112 - mse: 1.6660 - val_loss: 4.2126 - val_mse: 3.4675
Epoch 1054/3000
6/6 - 0s - loss: 2.4103 - mse: 1.6654 - val_loss: 4.2115 - val_mse: 3.4666
Epoch 1055/3000
6/6 - 0s - loss: 2.4091 - mse: 1.6643 - val_loss: 4.2108 - val_mse: 3.4661
Epoch 1056/3000
6/6 - 0s - loss: 2.4080 - mse: 1.6635 - val_loss: 4.2100 - val_mse: 3.4655
Epoch 1057/3000
6/6 - 0s - loss: 2.4069 - mse: 1.6626 - val_loss: 4.2090 - val_mse: 3.4648
Epoch 1058/3000
6/6 - 0s - loss: 2.4061 - mse: 1.6619 - val_loss: 4.2080 - val_mse: 3.4639
Epoch 1059/3000
6/6 - 0s - loss: 2.4049 - mse: 1.6609 - val_loss: 4.2071 - val_mse: 3.4633
Epoch 1060/3000
6/6 - 0s - loss: 2.4039 - mse: 1.6601 - val_loss: 4.2062 - val_mse: 3.4626
Epoch 1061/3000
6/6 - 0s - loss: 2.4028 - mse: 1.6592 - val_loss: 4.2054 - val_mse: 3.4619
Epoch 1062/3000
6/6 - 0s - loss: 2.4019 - mse: 1.6585 - val_loss: 4.2044 - val_mse: 3.4612
Epoch 1063/3000
6/6 - 0s - loss: 2.4007 - mse: 1.6575 - val_loss: 4.2037 - val_mse: 3.4607
Epoch 1064/3000
6/6 - 0s - loss: 2.3998 - mse: 1.6569 - val_loss: 4.2028 - val_mse: 3.4599
Epoch 1065/3000
6/6 - 0s - loss: 2.3987 - mse: 1.6560 - val_loss: 4.2021 - val_mse: 3.4594
Epoch 1066/3000
6/6 - 0s - loss: 2.3977 - mse: 1.6551 - val_loss: 4.2011 - val_mse: 3.4586
Epoch 1067/3000
6/6 - 0s - loss: 2.3969 - mse: 1.6545 - val_loss: 4.2001 - val_mse: 3.4578
Epoch 1068/3000
6/6 - 0s - loss: 2.3955 - mse: 1.6534 - val_loss: 4.1993 - val_mse: 3.4572
Epoch 1069/3000
6/6 - 0s - loss: 2.3946 - mse: 1.6527 - val_loss: 4.1982 - val_mse: 3.4563
Epoch 1070/3000
6/6 - 0s - loss: 2.3936 - mse: 1.6518 - val_loss: 4.1974 - val_mse: 3.4557
Epoch 1071/3000
6/6 - 0s - loss: 2.3924 - mse: 1.6508 - val_loss: 4.1966 - val_mse: 3.4552
Epoch 1072/3000
6/6 - 0s - loss: 2.3915 - mse: 1.6502 - val_loss: 4.1956 - val_mse: 3.4543
Epoch 1073/3000
6/6 - 0s - loss: 2.3904 - mse: 1.6492 - val_loss: 4.1947 - val_mse: 3.4536
Epoch 1074/3000
6/6 - 0s - loss: 2.3894 - mse: 1.6484 - val_loss: 4.1939 - val_mse: 3.4530
Epoch 1075/3000
6/6 - 0s - loss: 2.3885 - mse: 1.6477 - val_loss: 4.1929 - val_mse: 3.4522
Epoch 1076/3000
6/6 - 0s - loss: 2.3874 - mse: 1.6468 - val_loss: 4.1919 - val_mse: 3.4515
Epoch 1077/3000
6/6 - 0s - loss: 2.3863 - mse: 1.6460 - val_loss: 4.1912 - val_mse: 3.4509
Epoch 1078/3000
6/6 - 0s - loss: 2.3854 - mse: 1.6452 - val_loss: 4.1906 - val_mse: 3.4505
Epoch 1079/3000
6/6 - 0s - loss: 2.3844 - mse: 1.6444 - val_loss: 4.1897 - val_mse: 3.4499
Epoch 1080/3000
6/6 - 0s - loss: 2.3834 - mse: 1.6437 - val_loss: 4.1888 - val_mse: 3.4491
Epoch 1081/3000
6/6 - 0s - loss: 2.3824 - mse: 1.6428 - val_loss: 4.1883 - val_mse: 3.4488
Epoch 1082/3000
6/6 - 0s - loss: 2.3815 - mse: 1.6421 - val_loss: 4.1873 - val_mse: 3.4480
Epoch 1083/3000
6/6 - 0s - loss: 2.3805 - mse: 1.6413 - val_loss: 4.1864 - val_mse: 3.4473
Epoch 1084/3000
6/6 - 0s - loss: 2.3794 - mse: 1.6404 - val_loss: 4.1859 - val_mse: 3.4471
Epoch 1085/3000
6/6 - 0s - loss: 2.3784 - mse: 1.6396 - val_loss: 4.1850 - val_mse: 3.4464
Epoch 1086/3000
6/6 - 0s - loss: 2.3775 - mse: 1.6389 - val_loss: 4.1841 - val_mse: 3.4457
Epoch 1087/3000
6/6 - 0s - loss: 2.3764 - mse: 1.6380 - val_loss: 4.1833 - val_mse: 3.4450
Epoch 1088/3000
6/6 - 0s - loss: 2.3755 - mse: 1.6373 - val_loss: 4.1824 - val_mse: 3.4444
Epoch 1089/3000
6/6 - 0s - loss: 2.3744 - mse: 1.6365 - val_loss: 4.1817 - val_mse: 3.4439
Epoch 1090/3000
6/6 - 0s - loss: 2.3734 - mse: 1.6356 - val_loss: 4.1811 - val_mse: 3.4434
Epoch 1091/3000
6/6 - 0s - loss: 2.3724 - mse: 1.6348 - val_loss: 4.1803 - val_mse: 3.4428
Epoch 1092/3000
6/6 - 0s - loss: 2.3714 - mse: 1.6340 - val_loss: 4.1794 - val_mse: 3.4422
Epoch 1093/3000
6/6 - 0s - loss: 2.3704 - mse: 1.6332 - val_loss: 4.1784 - val_mse: 3.4413
Epoch 1094/3000
6/6 - 0s - loss: 2.3695 - mse: 1.6325 - val_loss: 4.1774 - val_mse: 3.4405
Epoch 1095/3000
6/6 - 0s - loss: 2.3683 - mse: 1.6315 - val_loss: 4.1767 - val_mse: 3.4400
Epoch 1096/3000
6/6 - 0s - loss: 2.3673 - mse: 1.6306 - val_loss: 4.1760 - val_mse: 3.4395
Epoch 1097/3000
6/6 - 0s - loss: 2.3662 - mse: 1.6298 - val_loss: 4.1752 - val_mse: 3.4389
Epoch 1098/3000
6/6 - 0s - loss: 2.3654 - mse: 1.6291 - val_loss: 4.1741 - val_mse: 3.4380
Epoch 1099/3000
6/6 - 0s - loss: 2.3643 - mse: 1.6283 - val_loss: 4.1731 - val_mse: 3.4372
Epoch 1100/3000
6/6 - 0s - loss: 2.3632 - mse: 1.6274 - val_loss: 4.1725 - val_mse: 3.4368
Epoch 1101/3000
6/6 - 0s - loss: 2.3623 - mse: 1.6266 - val_loss: 4.1716 - val_mse: 3.4361
Epoch 1102/3000
6/6 - 0s - loss: 2.3616 - mse: 1.6262 - val_loss: 4.1706 - val_mse: 3.4353
Epoch 1103/3000
6/6 - 0s - loss: 2.3603 - mse: 1.6250 - val_loss: 4.1699 - val_mse: 3.4347
Epoch 1104/3000
6/6 - 0s - loss: 2.3593 - mse: 1.6243 - val_loss: 4.1692 - val_mse: 3.4342
Epoch 1105/3000
6/6 - 0s - loss: 2.3583 - mse: 1.6235 - val_loss: 4.1686 - val_mse: 3.4338
Epoch 1106/3000
6/6 - 0s - loss: 2.3574 - mse: 1.6228 - val_loss: 4.1679 - val_mse: 3.4334
Epoch 1107/3000
6/6 - 0s - loss: 2.3565 - mse: 1.6220 - val_loss: 4.1673 - val_mse: 3.4330
Epoch 1108/3000
6/6 - 0s - loss: 2.3555 - mse: 1.6212 - val_loss: 4.1666 - val_mse: 3.4325
Epoch 1109/3000
6/6 - 0s - loss: 2.3546 - mse: 1.6205 - val_loss: 4.1662 - val_mse: 3.4322
Epoch 1110/3000
6/6 - 0s - loss: 2.3536 - mse: 1.6198 - val_loss: 4.1655 - val_mse: 3.4318
Epoch 1111/3000
6/6 - 0s - loss: 2.3526 - mse: 1.6190 - val_loss: 4.1648 - val_mse: 3.4312
Epoch 1112/3000
6/6 - 0s - loss: 2.3517 - mse: 1.6182 - val_loss: 4.1639 - val_mse: 3.4306
Epoch 1113/3000
6/6 - 0s - loss: 2.3507 - mse: 1.6175 - val_loss: 4.1634 - val_mse: 3.4303
Epoch 1114/3000
6/6 - 0s - loss: 2.3499 - mse: 1.6168 - val_loss: 4.1625 - val_mse: 3.4296
Epoch 1115/3000
6/6 - 0s - loss: 2.3487 - mse: 1.6158 - val_loss: 4.1618 - val_mse: 3.4291
Epoch 1116/3000
6/6 - 0s - loss: 2.3478 - mse: 1.6152 - val_loss: 4.1610 - val_mse: 3.4285
Epoch 1117/3000
6/6 - 0s - loss: 2.3468 - mse: 1.6144 - val_loss: 4.1603 - val_mse: 3.4280
Epoch 1118/3000
6/6 - 0s - loss: 2.3459 - mse: 1.6136 - val_loss: 4.1596 - val_mse: 3.4274
Epoch 1119/3000
6/6 - 0s - loss: 2.3449 - mse: 1.6128 - val_loss: 4.1588 - val_mse: 3.4269
Epoch 1120/3000
6/6 - 0s - loss: 2.3439 - mse: 1.6120 - val_loss: 4.1581 - val_mse: 3.4264
Epoch 1121/3000
6/6 - 0s - loss: 2.3429 - mse: 1.6113 - val_loss: 4.1574 - val_mse: 3.4259
Epoch 1122/3000
6/6 - 0s - loss: 2.3421 - mse: 1.6106 - val_loss: 4.1567 - val_mse: 3.4253
Epoch 1123/3000
6/6 - 0s - loss: 2.3411 - mse: 1.6099 - val_loss: 4.1559 - val_mse: 3.4247
Epoch 1124/3000
6/6 - 0s - loss: 2.3401 - mse: 1.6090 - val_loss: 4.1552 - val_mse: 3.4243
Epoch 1125/3000
6/6 - 0s - loss: 2.3392 - mse: 1.6083 - val_loss: 4.1546 - val_mse: 3.4238
Epoch 1126/3000
6/6 - 0s - loss: 2.3382 - mse: 1.6075 - val_loss: 4.1540 - val_mse: 3.4234
Epoch 1127/3000
6/6 - 0s - loss: 2.3374 - mse: 1.6069 - val_loss: 4.1536 - val_mse: 3.4232
Epoch 1128/3000
6/6 - 0s - loss: 2.3365 - mse: 1.6062 - val_loss: 4.1529 - val_mse: 3.4228
Epoch 1129/3000
6/6 - 0s - loss: 2.3355 - mse: 1.6054 - val_loss: 4.1523 - val_mse: 3.4224
Epoch 1130/3000
6/6 - 0s - loss: 2.3347 - mse: 1.6048 - val_loss: 4.1516 - val_mse: 3.4218
Epoch 1131/3000
6/6 - 0s - loss: 2.3337 - mse: 1.6040 - val_loss: 4.1510 - val_mse: 3.4214
Epoch 1132/3000
6/6 - 0s - loss: 2.3328 - mse: 1.6033 - val_loss: 4.1504 - val_mse: 3.4211
Epoch 1133/3000
6/6 - 0s - loss: 2.3319 - mse: 1.6026 - val_loss: 4.1500 - val_mse: 3.4208
Epoch 1134/3000
6/6 - 0s - loss: 2.3310 - mse: 1.6019 - val_loss: 4.1494 - val_mse: 3.4204
Epoch 1135/3000
6/6 - 0s - loss: 2.3301 - mse: 1.6012 - val_loss: 4.1488 - val_mse: 3.4200
Epoch 1136/3000
6/6 - 0s - loss: 2.3291 - mse: 1.6004 - val_loss: 4.1484 - val_mse: 3.4198
Epoch 1137/3000
6/6 - 0s - loss: 2.3282 - mse: 1.5997 - val_loss: 4.1476 - val_mse: 3.4192
Epoch 1138/3000
6/6 - 0s - loss: 2.3274 - mse: 1.5991 - val_loss: 4.1469 - val_mse: 3.4188
Epoch 1139/3000
6/6 - 0s - loss: 2.3263 - mse: 1.5982 - val_loss: 4.1464 - val_mse: 3.4184
Epoch 1140/3000
6/6 - 0s - loss: 2.3255 - mse: 1.5976 - val_loss: 4.1456 - val_mse: 3.4178
Epoch 1141/3000
6/6 - 0s - loss: 2.3245 - mse: 1.5967 - val_loss: 4.1450 - val_mse: 3.4174
Epoch 1142/3000
6/6 - 0s - loss: 2.3236 - mse: 1.5961 - val_loss: 4.1443 - val_mse: 3.4169
Epoch 1143/3000
6/6 - 0s - loss: 2.3226 - mse: 1.5953 - val_loss: 4.1437 - val_mse: 3.4165
Epoch 1144/3000
6/6 - 0s - loss: 2.3217 - mse: 1.5946 - val_loss: 4.1432 - val_mse: 3.4161
Epoch 1145/3000
6/6 - 0s - loss: 2.3209 - mse: 1.5939 - val_loss: 4.1425 - val_mse: 3.4157
Epoch 1146/3000
6/6 - 0s - loss: 2.3199 - mse: 1.5932 - val_loss: 4.1418 - val_mse: 3.4152
Epoch 1147/3000
6/6 - 0s - loss: 2.3190 - mse: 1.5924 - val_loss: 4.1413 - val_mse: 3.4148
Epoch 1148/3000
6/6 - 0s - loss: 2.3181 - mse: 1.5917 - val_loss: 4.1409 - val_mse: 3.4147
Epoch 1149/3000
6/6 - 0s - loss: 2.3173 - mse: 1.5911 - val_loss: 4.1402 - val_mse: 3.4142
Epoch 1150/3000
```

```
6/6 - 0s - loss: 2.3163 - mse: 1.5903 - val_loss: 4.1395 - val_mse: 3.4137
Epoch 1151/3000
6/6 - 0s - loss: 2.3154 - mse: 1.5896 - val_loss: 4.1389 - val_mse: 3.4133
Epoch 1152/3000
6/6 - 0s - loss: 2.3145 - mse: 1.5889 - val_loss: 4.1384 - val_mse: 3.4130
Epoch 1153/3000
6/6 - 0s - loss: 2.3135 - mse: 1.5882 - val_loss: 4.1380 - val_mse: 3.4128
Epoch 1154/3000
6/6 - 0s - loss: 2.3126 - mse: 1.5875 - val_loss: 4.1374 - val_mse: 3.4123
Epoch 1155/3000
6/6 - 0s - loss: 2.3117 - mse: 1.5867 - val_loss: 4.1367 - val_mse: 3.4119
Epoch 1156/3000
6/6 - 0s - loss: 2.3107 - mse: 1.5859 - val_loss: 4.1362 - val_mse: 3.4115
Epoch 1157/3000
6/6 - 0s - loss: 2.3099 - mse: 1.5853 - val_loss: 4.1356 - val_mse: 3.4111
Epoch 1158/3000
6/6 - 0s - loss: 2.3090 - mse: 1.5846 - val_loss: 4.1349 - val_mse: 3.4106
Epoch 1159/3000
6/6 - 0s - loss: 2.3081 - mse: 1.5839 - val_loss: 4.1343 - val_mse: 3.4102
Epoch 1160/3000
6/6 - 0s - loss: 2.3073 - mse: 1.5833 - val_loss: 4.1337 - val_mse: 3.4098
Epoch 1161/3000
6/6 - 0s - loss: 2.3062 - mse: 1.5824 - val_loss: 4.1333 - val_mse: 3.4096
Epoch 1162/3000
6/6 - 0s - loss: 2.3054 - mse: 1.5818 - val_loss: 4.1326 - val_mse: 3.4091
Epoch 1163/3000
6/6 - 0s - loss: 2.3044 - mse: 1.5810 - val_loss: 4.1321 - val_mse: 3.4088
Epoch 1164/3000
6/6 - 0s - loss: 2.3035 - mse: 1.5803 - val_loss: 4.1317 - val_mse: 3.4086
Epoch 1165/3000
6/6 - 0s - loss: 2.3026 - mse: 1.5796 - val_loss: 4.1311 - val_mse: 3.4082
Epoch 1166/3000
6/6 - 0s - loss: 2.3018 - mse: 1.5790 - val_loss: 4.1305 - val_mse: 3.4078
Epoch 1167/3000
6/6 - 0s - loss: 2.3009 - mse: 1.5783 - val_loss: 4.1301 - val_mse: 3.4076
Epoch 1168/3000
6/6 - 0s - loss: 2.3001 - mse: 1.5776 - val_loss: 4.1295 - val_mse: 3.4072
Epoch 1169/3000
6/6 - 0s - loss: 2.2991 - mse: 1.5768 - val_loss: 4.1289 - val_mse: 3.4067
Epoch 1170/3000
6/6 - 0s - loss: 2.2982 - mse: 1.5761 - val_loss: 4.1283 - val_mse: 3.4063
Epoch 1171/3000
6/6 - 0s - loss: 2.2973 - mse: 1.5754 - val_loss: 4.1278 - val_mse: 3.4061
Epoch 1172/3000
6/6 - 0s - loss: 2.2964 - mse: 1.5747 - val_loss: 4.1273 - val_mse: 3.4057
Epoch 1173/3000
6/6 - 0s - loss: 2.2955 - mse: 1.5740 - val_loss: 4.1267 - val_mse: 3.4054
Epoch 1174/3000
6/6 - 0s - loss: 2.2947 - mse: 1.5734 - val_loss: 4.1262 - val_mse: 3.4051
Epoch 1175/3000
6/6 - 0s - loss: 2.2937 - mse: 1.5726 - val_loss: 4.1255 - val_mse: 3.4046
Epoch 1176/3000
6/6 - 0s - loss: 2.2928 - mse: 1.5719 - val_loss: 4.1248 - val_mse: 3.4040
Epoch 1177/3000
6/6 - 0s - loss: 2.2918 - mse: 1.5711 - val_loss: 4.1244 - val_mse: 3.4038
Epoch 1178/3000
6/6 - 0s - loss: 2.2911 - mse: 1.5706 - val_loss: 4.1241 - val_mse: 3.4037
Epoch 1179/3000
6/6 - 0s - loss: 2.2902 - mse: 1.5699 - val_loss: 4.1236 - val_mse: 3.4034
Epoch 1180/3000
6/6 - 0s - loss: 2.2896 - mse: 1.5694 - val_loss: 4.1229 - val_mse: 3.4029
Epoch 1181/3000
6/6 - 0s - loss: 2.2884 - mse: 1.5685 - val_loss: 4.1223 - val_mse: 3.4025
Epoch 1182/3000
6/6 - 0s - loss: 2.2876 - mse: 1.5678 - val_loss: 4.1218 - val_mse: 3.4021
Epoch 1183/3000
6/6 - 0s - loss: 2.2866 - mse: 1.5671 - val_loss: 4.1215 - val_mse: 3.4020
Epoch 1184/3000
6/6 - 0s - loss: 2.2858 - mse: 1.5665 - val_loss: 4.1208 - val_mse: 3.4016
Epoch 1185/3000
6/6 - 0s - loss: 2.2849 - mse: 1.5658 - val_loss: 4.1206 - val_mse: 3.4015
Epoch 1186/3000
6/6 - 0s - loss: 2.2840 - mse: 1.5651 - val_loss: 4.1199 - val_mse: 3.4011
Epoch 1187/3000
6/6 - 0s - loss: 2.2832 - mse: 1.5645 - val_loss: 4.1196 - val_mse: 3.4010
Epoch 1188/3000
6/6 - 0s - loss: 2.2823 - mse: 1.5638 - val_loss: 4.1192 - val_mse: 3.4007
Epoch 1189/3000
6/6 - 0s - loss: 2.2816 - mse: 1.5632 - val_loss: 4.1185 - val_mse: 3.4002
Epoch 1190/3000
6/6 - 0s - loss: 2.2805 - mse: 1.5623 - val_loss: 4.1182 - val_mse: 3.4002
Epoch 1191/3000
6/6 - 0s - loss: 2.2796 - mse: 1.5616 - val_loss: 4.1176 - val_mse: 3.3998
Epoch 1192/3000
6/6 - 0s - loss: 2.2788 - mse: 1.5610 - val_loss: 4.1170 - val_mse: 3.3994
Epoch 1193/3000
6/6 - 0s - loss: 2.2778 - mse: 1.5602 - val_loss: 4.1168 - val_mse: 3.3993
Epoch 1194/3000
6/6 - 0s - loss: 2.2772 - mse: 1.5598 - val_loss: 4.1158 - val_mse: 3.3985
Epoch 1195/3000
6/6 - 0s - loss: 2.2760 - mse: 1.5588 - val_loss: 4.1154 - val_mse: 3.3983
Epoch 1196/3000
6/6 - 0s - loss: 2.2753 - mse: 1.5583 - val_loss: 4.1151 - val_mse: 3.3982
Epoch 1197/3000
6/6 - 0s - loss: 2.2745 - mse: 1.5576 - val_loss: 4.1146 - val_mse: 3.3979
Epoch 1198/3000
6/6 - 0s - loss: 2.2735 - mse: 1.5569 - val_loss: 4.1143 - val_mse: 3.3977
Epoch 1199/3000
6/6 - 0s - loss: 2.2727 - mse: 1.5563 - val_loss: 4.1140 - val_mse: 3.3977
Epoch 1200/3000
6/6 - 0s - loss: 2.2719 - mse: 1.5556 - val_loss: 4.1135 - val_mse: 3.3974
Epoch 1201/3000
6/6 - 0s - loss: 2.2710 - mse: 1.5549 - val_loss: 4.1129 - val_mse: 3.3970
Epoch 1202/3000
6/6 - 0s - loss: 2.2701 - mse: 1.5543 - val_loss: 4.1125 - val_mse: 3.3968
Epoch 1203/3000
6/6 - 0s - loss: 2.2693 - mse: 1.5536 - val_loss: 4.1121 - val_mse: 3.3966
Epoch 1204/3000
6/6 - 0s - loss: 2.2684 - mse: 1.5529 - val_loss: 4.1114 - val_mse: 3.3960
Epoch 1205/3000
6/6 - 0s - loss: 2.2677 - mse: 1.5524 - val_loss: 4.1107 - val_mse: 3.3955
Epoch 1206/3000
6/6 - 0s - loss: 2.2667 - mse: 1.5516 - val_loss: 4.1101 - val_mse: 3.3952
Epoch 1207/3000
6/6 - 0s - loss: 2.2658 - mse: 1.5509 - val_loss: 4.1098 - val_mse: 3.3950
Epoch 1208/3000
6/6 - 0s - loss: 2.2650 - mse: 1.5503 - val_loss: 4.1091 - val_mse: 3.3945
Epoch 1209/3000
6/6 - 0s - loss: 2.2641 - mse: 1.5495 - val_loss: 4.1087 - val_mse: 3.3943
Epoch 1210/3000
6/6 - 0s - loss: 2.2632 - mse: 1.5489 - val_loss: 4.1082 - val_mse: 3.3940
Epoch 1211/3000
6/6 - 0s - loss: 2.2623 - mse: 1.5482 - val_loss: 4.1077 - val_mse: 3.3936
Epoch 1212/3000
6/6 - 0s - loss: 2.2615 - mse: 1.5475 - val_loss: 4.1071 - val_mse: 3.3933
Epoch 1213/3000
6/6 - 0s - loss: 2.2609 - mse: 1.5471 - val_loss: 4.1064 - val_mse: 3.3927
Epoch 1214/3000
6/6 - 0s - loss: 2.2598 - mse: 1.5462 - val_loss: 4.1062 - val_mse: 3.3927
Epoch 1215/3000
6/6 - 0s - loss: 2.2590 - mse: 1.5456 - val_loss: 4.1056 - val_mse: 3.3923
Epoch 1216/3000
6/6 - 0s - loss: 2.2581 - mse: 1.5449 - val_loss: 4.1053 - val_mse: 3.3922
Epoch 1217/3000
6/6 - 0s - loss: 2.2573 - mse: 1.5443 - val_loss: 4.1050 - val_mse: 3.3921
Epoch 1218/3000
6/6 - 0s - loss: 2.2565 - mse: 1.5437 - val_loss: 4.1046 - val_mse: 3.3919
Epoch 1219/3000
6/6 - 0s - loss: 2.2556 - mse: 1.5430 - val_loss: 4.1042 - val_mse: 3.3918
Epoch 1220/3000
6/6 - 0s - loss: 2.2548 - mse: 1.5424 - val_loss: 4.1035 - val_mse: 3.3912
Epoch 1221/3000
6/6 - 0s - loss: 2.2540 - mse: 1.5418 - val_loss: 4.1033 - val_mse: 3.3912
Epoch 1222/3000
6/6 - 0s - loss: 2.2534 - mse: 1.5413 - val_loss: 4.1025 - val_mse: 3.3906
Epoch 1223/3000
6/6 - 0s - loss: 2.2523 - mse: 1.5404 - val_loss: 4.1021 - val_mse: 3.3904
Epoch 1224/3000
6/6 - 0s - loss: 2.2514 - mse: 1.5398 - val_loss: 4.1017 - val_mse: 3.3902
Epoch 1225/3000
6/6 - 0s - loss: 2.2506 - mse: 1.5392 - val_loss: 4.1012 - val_mse: 3.3899
Epoch 1226/3000
6/6 - 0s - loss: 2.2497 - mse: 1.5384 - val_loss: 4.1008 - val_mse: 3.3897
Epoch 1227/3000
6/6 - 0s - loss: 2.2490 - mse: 1.5379 - val_loss: 4.1006 - val_mse: 3.3897
Epoch 1228/3000
6/6 - 0s - loss: 2.2480 - mse: 1.5371 - val_loss: 4.1002 - val_mse: 3.3895
Epoch 1229/3000
6/6 - 0s - loss: 2.2473 - mse: 1.5366 - val_loss: 4.0994 - val_mse: 3.3889
Epoch 1230/3000
6/6 - 0s - loss: 2.2463 - mse: 1.5358 - val_loss: 4.0989 - val_mse: 3.3886
Epoch 1231/3000
6/6 - 0s - loss: 2.2455 - mse: 1.5352 - val_loss: 4.0986 - val_mse: 3.3884
Epoch 1232/3000
6/6 - 0s - loss: 2.2446 - mse: 1.5345 - val_loss: 4.0983 - val_mse: 3.3883
Epoch 1233/3000
6/6 - 0s - loss: 2.2438 - mse: 1.5338 - val_loss: 4.0978 - val_mse: 3.3880
Epoch 1234/3000
6/6 - 0s - loss: 2.2430 - mse: 1.5332 - val_loss: 4.0971 - val_mse: 3.3874
Epoch 1235/3000
6/6 - 0s - loss: 2.2420 - mse: 1.5325 - val_loss: 4.0967 - val_mse: 3.3873
Epoch 1236/3000
6/6 - 0s - loss: 2.2411 - mse: 1.5317 - val_loss: 4.0961 - val_mse: 3.3869
Epoch 1237/3000
6/6 - 0s - loss: 2.2404 - mse: 1.5313 - val_loss: 4.0956 - val_mse: 3.3865
Epoch 1238/3000
6/6 - 0s - loss: 2.2396 - mse: 1.5306 - val_loss: 4.0952 - val_mse: 3.3863
Epoch 1239/3000
6/6 - 0s - loss: 2.2388 - mse: 1.5300 - val_loss: 4.0949 - val_mse: 3.3862
Epoch 1240/3000
6/6 - 0s - loss: 2.2379 - mse: 1.5292 - val_loss: 4.0944 - val_mse: 3.3859
Epoch 1241/3000
6/6 - 0s - loss: 2.2370 - mse: 1.5285 - val_loss: 4.0940 - val_mse: 3.3857
Epoch 1242/3000
6/6 - 0s - loss: 2.2361 - mse: 1.5279 - val_loss: 4.0937 - val_mse: 3.3856
Epoch 1243/3000
6/6 - 0s - loss: 2.2354 - mse: 1.5273 - val_loss: 4.0931 - val_mse: 3.3852
Epoch 1244/3000
6/6 - 0s - loss: 2.2345 - mse: 1.5266 - val_loss: 4.0928 - val_mse: 3.3850
Epoch 1245/3000
6/6 - 0s - loss: 2.2337 - mse: 1.5261 - val_loss: 4.0923 - val_mse: 3.3847
Epoch 1246/3000
6/6 - 0s - loss: 2.2328 - mse: 1.5253 - val_loss: 4.0920 - val_mse: 3.3846
Epoch 1247/3000
6/6 - 0s - loss: 2.2320 - mse: 1.5247 - val_loss: 4.0916 - val_mse: 3.3845
Epoch 1248/3000
6/6 - 0s - loss: 2.2312 - mse: 1.5241 - val_loss: 4.0913 - val_mse: 3.3844
Epoch 1249/3000
6/6 - 0s - loss: 2.2304 - mse: 1.5235 - val_loss: 4.0911 - val_mse: 3.3843
Epoch 1250/3000
6/6 - 0s - loss: 2.2297 - mse: 1.5230 - val_loss: 4.0906 - val_mse: 3.3840
Epoch 1251/3000
6/6 - 0s - loss: 2.2287 - mse: 1.5222 - val_loss: 4.0903 - val_mse: 3.3839
Epoch 1252/3000
6/6 - 0s - loss: 2.2281 - mse: 1.5217 - val_loss: 4.0897 - val_mse: 3.3835
Epoch 1253/3000
6/6 - 0s - loss: 2.2270 - mse: 1.5209 - val_loss: 4.0894 - val_mse: 3.3833
Epoch 1254/3000
6/6 - 0s - loss: 2.2263 - mse: 1.5203 - val_loss: 4.0890 - val_mse: 3.3832
Epoch 1255/3000
6/6 - 0s - loss: 2.2254 - mse: 1.5197 - val_loss: 4.0886 - val_mse: 3.3829
Epoch 1256/3000
6/6 - 0s - loss: 2.2246 - mse: 1.5190 - val_loss: 4.0882 - val_mse: 3.3828
Epoch 1257/3000
6/6 - 0s - loss: 2.2238 - mse: 1.5184 - val_loss: 4.0879 - val_mse: 3.3826
Epoch 1258/3000
6/6 - 0s - loss: 2.2229 - mse: 1.5177 - val_loss: 4.0876 - val_mse: 3.3825
Epoch 1259/3000
6/6 - 0s - loss: 2.2222 - mse: 1.5171 - val_loss: 4.0870 - val_mse: 3.3821
Epoch 1260/3000
6/6 - 0s - loss: 2.2214 - mse: 1.5165 - val_loss: 4.0865 - val_mse: 3.3817
Epoch 1261/3000
6/6 - 0s - loss: 2.2205 - mse: 1.5158 - val_loss: 4.0862 - val_mse: 3.3816
Epoch 1262/3000
6/6 - 0s - loss: 2.2196 - mse: 1.5151 - val_loss: 4.0859 - val_mse: 3.3816
Epoch 1263/3000
6/6 - 0s - loss: 2.2188 - mse: 1.5145 - val_loss: 4.0855 - val_mse: 3.3813
Epoch 1264/3000
6/6 - 0s - loss: 2.2181 - mse: 1.5140 - val_loss: 4.0851 - val_mse: 3.3811
Epoch 1265/3000
6/6 - 0s - loss: 2.2173 - mse: 1.5133 - val_loss: 4.0849 - val_mse: 3.3810
Epoch 1266/3000
6/6 - 0s - loss: 2.2163 - mse: 1.5126 - val_loss: 4.0846 - val_mse: 3.3810
Epoch 1267/3000
6/6 - 0s - loss: 2.2157 - mse: 1.5121 - val_loss: 4.0841 - val_mse: 3.3807
Epoch 1268/3000
6/6 - 0s - loss: 2.2148 - mse: 1.5115 - val_loss: 4.0838 - val_mse: 3.3806
Epoch 1269/3000
6/6 - 0s - loss: 2.2140 - mse: 1.5108 - val_loss: 4.0835 - val_mse: 3.3804
Epoch 1270/3000
6/6 - 0s - loss: 2.2131 - mse: 1.5102 - val_loss: 4.0832 - val_mse: 3.3803
Epoch 1271/3000
6/6 - 0s - loss: 2.2123 - mse: 1.5095 - val_loss: 4.0830 - val_mse: 3.3803
Epoch 1272/3000
6/6 - 0s - loss: 2.2116 - mse: 1.5090 - val_loss: 4.0826 - val_mse: 3.3801
Epoch 1273/3000
6/6 - 0s - loss: 2.2107 - mse: 1.5083 - val_loss: 4.0823 - val_mse: 3.3800
Epoch 1274/3000
6/6 - 0s - loss: 2.2099 - mse: 1.5077 - val_loss: 4.0819 - val_mse: 3.3797
Epoch 1275/3000
6/6 - 0s - loss: 2.2092 - mse: 1.5071 - val_loss: 4.0815 - val_mse: 3.3796
Epoch 1276/3000
6/6 - 0s - loss: 2.2085 - mse: 1.5066 - val_loss: 4.0815 - val_mse: 3.3798
Epoch 1277/3000
6/6 - 0s - loss: 2.2077 - mse: 1.5060 - val_loss: 4.0811 - val_mse: 3.3795
Epoch 1278/3000
6/6 - 0s - loss: 2.2069 - mse: 1.5054 - val_loss: 4.0804 - val_mse: 3.3790
Epoch 1279/3000
6/6 - 0s - loss: 2.2060 - mse: 1.5047 - val_loss: 4.0801 - val_mse: 3.3789
Epoch 1280/3000
```

```
6/6 - 0s - loss: 2.2052 - mse: 1.5040 - val_loss: 4.0798 - val_mse: 3.3788
Epoch 1281/3000
6/6 - 0s - loss: 2.2044 - mse: 1.5034 - val_loss: 4.0796 - val_mse: 3.3788
Epoch 1282/3000
6/6 - 0s - loss: 2.2036 - mse: 1.5029 - val_loss: 4.0792 - val_mse: 3.3786
Epoch 1283/3000
6/6 - 0s - loss: 2.2029 - mse: 1.5024 - val_loss: 4.0785 - val_mse: 3.3781
Epoch 1284/3000
6/6 - 0s - loss: 2.2020 - mse: 1.5016 - val_loss: 4.0785 - val_mse: 3.3783
Epoch 1285/3000
6/6 - 0s - loss: 2.2012 - mse: 1.5010 - val_loss: 4.0783 - val_mse: 3.3782
Epoch 1286/3000
6/6 - 0s - loss: 2.2006 - mse: 1.5006 - val_loss: 4.0777 - val_mse: 3.3778
Epoch 1287/3000
6/6 - 0s - loss: 2.1996 - mse: 1.4997 - val_loss: 4.0777 - val_mse: 3.3780
Epoch 1288/3000
6/6 - 0s - loss: 2.1988 - mse: 1.4992 - val_loss: 4.0775 - val_mse: 3.3780
Epoch 1289/3000
6/6 - 0s - loss: 2.1982 - mse: 1.4988 - val_loss: 4.0769 - val_mse: 3.3775
Epoch 1290/3000
6/6 - 0s - loss: 2.1973 - mse: 1.4980 - val_loss: 4.0765 - val_mse: 3.3773
Epoch 1291/3000
6/6 - 0s - loss: 2.1965 - mse: 1.4974 - val_loss: 4.0764 - val_mse: 3.3774
Epoch 1292/3000
6/6 - 0s - loss: 2.1956 - mse: 1.4967 - val_loss: 4.0761 - val_mse: 3.3773
Epoch 1293/3000
6/6 - 0s - loss: 2.1949 - mse: 1.4962 - val_loss: 4.0760 - val_mse: 3.3774
Epoch 1294/3000
6/6 - 0s - loss: 2.1941 - mse: 1.4955 - val_loss: 4.0757 - val_mse: 3.3772
Epoch 1295/3000
6/6 - 0s - loss: 2.1933 - mse: 1.4950 - val_loss: 4.0753 - val_mse: 3.3770
Epoch 1296/3000
6/6 - 0s - loss: 2.1924 - mse: 1.4943 - val_loss: 4.0748 - val_mse: 3.3768
Epoch 1297/3000
6/6 - 0s - loss: 2.1918 - mse: 1.4938 - val_loss: 4.0744 - val_mse: 3.3765
Epoch 1298/3000
6/6 - 0s - loss: 2.1910 - mse: 1.4932 - val_loss: 4.0741 - val_mse: 3.3764
Epoch 1299/3000
6/6 - 0s - loss: 2.1900 - mse: 1.4924 - val_loss: 4.0739 - val_mse: 3.3764
Epoch 1300/3000
6/6 - 0s - loss: 2.1893 - mse: 1.4919 - val_loss: 4.0735 - val_mse: 3.3762
Epoch 1301/3000
6/6 - 0s - loss: 2.1886 - mse: 1.4913 - val_loss: 4.0730 - val_mse: 3.3759
Epoch 1302/3000
6/6 - 0s - loss: 2.1877 - mse: 1.4906 - val_loss: 4.0728 - val_mse: 3.3758
Epoch 1303/3000
6/6 - 0s - loss: 2.1869 - mse: 1.4900 - val_loss: 4.0724 - val_mse: 3.3756
Epoch 1304/3000
6/6 - 0s - loss: 2.1861 - mse: 1.4894 - val_loss: 4.0720 - val_mse: 3.3754
Epoch 1305/3000
6/6 - 0s - loss: 2.1854 - mse: 1.4889 - val_loss: 4.0717 - val_mse: 3.3753
Epoch 1306/3000
6/6 - 0s - loss: 2.1846 - mse: 1.4882 - val_loss: 4.0714 - val_mse: 3.3751
Epoch 1307/3000
6/6 - 0s - loss: 2.1838 - mse: 1.4876 - val_loss: 4.0712 - val_mse: 3.3751
Epoch 1308/3000
6/6 - 0s - loss: 2.1830 - mse: 1.4870 - val_loss: 4.0708 - val_mse: 3.3749
Epoch 1309/3000
6/6 - 0s - loss: 2.1823 - mse: 1.4865 - val_loss: 4.0707 - val_mse: 3.3750
Epoch 1310/3000
6/6 - 0s - loss: 2.1814 - mse: 1.4858 - val_loss: 4.0702 - val_mse: 3.3747
Epoch 1311/3000
6/6 - 0s - loss: 2.1807 - mse: 1.4853 - val_loss: 4.0699 - val_mse: 3.3745
Epoch 1312/3000
6/6 - 0s - loss: 2.1799 - mse: 1.4846 - val_loss: 4.0696 - val_mse: 3.3744
Epoch 1313/3000
6/6 - 0s - loss: 2.1790 - mse: 1.4840 - val_loss: 4.0694 - val_mse: 3.3744
Epoch 1314/3000
6/6 - 0s - loss: 2.1783 - mse: 1.4834 - val_loss: 4.0690 - val_mse: 3.3742
Epoch 1315/3000
6/6 - 0s - loss: 2.1776 - mse: 1.4829 - val_loss: 4.0685 - val_mse: 3.3739
Epoch 1316/3000
6/6 - 0s - loss: 2.1767 - mse: 1.4822 - val_loss: 4.0684 - val_mse: 3.3739
Epoch 1317/3000
6/6 - 0s - loss: 2.1759 - mse: 1.4815 - val_loss: 4.0680 - val_mse: 3.3738
Epoch 1318/3000
6/6 - 0s - loss: 2.1752 - mse: 1.4810 - val_loss: 4.0678 - val_mse: 3.3738
Epoch 1319/3000
6/6 - 0s - loss: 2.1745 - mse: 1.4805 - val_loss: 4.0676 - val_mse: 3.3738
Epoch 1320/3000
6/6 - 0s - loss: 2.1737 - mse: 1.4799 - val_loss: 4.0672 - val_mse: 3.3735
Epoch 1321/3000
6/6 - 0s - loss: 2.1729 - mse: 1.4793 - val_loss: 4.0671 - val_mse: 3.3736
Epoch 1322/3000
6/6 - 0s - loss: 2.1721 - mse: 1.4787 - val_loss: 4.0666 - val_mse: 3.3733
Epoch 1323/3000
6/6 - 0s - loss: 2.1714 - mse: 1.4781 - val_loss: 4.0662 - val_mse: 3.3731
Epoch 1324/3000
6/6 - 0s - loss: 2.1705 - mse: 1.4774 - val_loss: 4.0660 - val_mse: 3.3730
Epoch 1325/3000
6/6 - 0s - loss: 2.1697 - mse: 1.4768 - val_loss: 4.0658 - val_mse: 3.3730
Epoch 1326/3000
6/6 - 0s - loss: 2.1689 - mse: 1.4762 - val_loss: 4.0653 - val_mse: 3.3727
Epoch 1327/3000
6/6 - 0s - loss: 2.1682 - mse: 1.4757 - val_loss: 4.0648 - val_mse: 3.3724
Epoch 1328/3000
6/6 - 0s - loss: 2.1675 - mse: 1.4751 - val_loss: 4.0647 - val_mse: 3.3725
Epoch 1329/3000
6/6 - 0s - loss: 2.1666 - mse: 1.4744 - val_loss: 4.0646 - val_mse: 3.3725
Epoch 1330/3000
6/6 - 0s - loss: 2.1659 - mse: 1.4739 - val_loss: 4.0641 - val_mse: 3.3722
Epoch 1331/3000
6/6 - 0s - loss: 2.1651 - mse: 1.4733 - val_loss: 4.0637 - val_mse: 3.3720
Epoch 1332/3000
6/6 - 0s - loss: 2.1643 - mse: 1.4726 - val_loss: 4.0634 - val_mse: 3.3718
Epoch 1333/3000
6/6 - 0s - loss: 2.1635 - mse: 1.4720 - val_loss: 4.0630 - val_mse: 3.3717
Epoch 1334/3000
6/6 - 0s - loss: 2.1627 - mse: 1.4714 - val_loss: 4.0628 - val_mse: 3.3716
Epoch 1335/3000
6/6 - 0s - loss: 2.1620 - mse: 1.4709 - val_loss: 4.0623 - val_mse: 3.3713
Epoch 1336/3000
6/6 - 0s - loss: 2.1612 - mse: 1.4703 - val_loss: 4.0620 - val_mse: 3.3712
Epoch 1337/3000
6/6 - 0s - loss: 2.1604 - mse: 1.4696 - val_loss: 4.0617 - val_mse: 3.3710
Epoch 1338/3000
6/6 - 0s - loss: 2.1596 - mse: 1.4690 - val_loss: 4.0615 - val_mse: 3.3711
Epoch 1339/3000
6/6 - 0s - loss: 2.1589 - mse: 1.4685 - val_loss: 4.0614 - val_mse: 3.3711
Epoch 1340/3000
6/6 - 0s - loss: 2.1580 - mse: 1.4678 - val_loss: 4.0611 - val_mse: 3.3709
Epoch 1341/3000
6/6 - 0s - loss: 2.1573 - mse: 1.4673 - val_loss: 4.0606 - val_mse: 3.3707
Epoch 1342/3000
6/6 - 0s - loss: 2.1565 - mse: 1.4666 - val_loss: 4.0603 - val_mse: 3.3705
Epoch 1343/3000
6/6 - 0s - loss: 2.1559 - mse: 1.4662 - val_loss: 4.0598 - val_mse: 3.3702
Epoch 1344/3000
6/6 - 0s - loss: 2.1550 - mse: 1.4655 - val_loss: 4.0596 - val_mse: 3.3702
Epoch 1345/3000
6/6 - 0s - loss: 2.1542 - mse: 1.4649 - val_loss: 4.0593 - val_mse: 3.3700
Epoch 1346/3000
6/6 - 0s - loss: 2.1535 - mse: 1.4643 - val_loss: 4.0590 - val_mse: 3.3699
Epoch 1347/3000
6/6 - 0s - loss: 2.1527 - mse: 1.4637 - val_loss: 4.0589 - val_mse: 3.3700
Epoch 1348/3000
6/6 - 0s - loss: 2.1520 - mse: 1.4632 - val_loss: 4.0587 - val_mse: 3.3700
Epoch 1349/3000
6/6 - 0s - loss: 2.1512 - mse: 1.4626 - val_loss: 4.0583 - val_mse: 3.3698
Epoch 1350/3000
6/6 - 0s - loss: 2.1505 - mse: 1.4621 - val_loss: 4.0582 - val_mse: 3.3699
Epoch 1351/3000
6/6 - 0s - loss: 2.1497 - mse: 1.4615 - val_loss: 4.0577 - val_mse: 3.3696
Epoch 1352/3000
6/6 - 0s - loss: 2.1490 - mse: 1.4609 - val_loss: 4.0574 - val_mse: 3.3694
Epoch 1353/3000
6/6 - 0s - loss: 2.1483 - mse: 1.4603 - val_loss: 4.0573 - val_mse: 3.3695
Epoch 1354/3000
6/6 - 0s - loss: 2.1475 - mse: 1.4598 - val_loss: 4.0569 - val_mse: 3.3693
Epoch 1355/3000
6/6 - 0s - loss: 2.1467 - mse: 1.4591 - val_loss: 4.0569 - val_mse: 3.3695
Epoch 1356/3000
6/6 - 0s - loss: 2.1459 - mse: 1.4585 - val_loss: 4.0567 - val_mse: 3.3695
Epoch 1357/3000
6/6 - 0s - loss: 2.1454 - mse: 1.4582 - val_loss: 4.0562 - val_mse: 3.3691
Epoch 1358/3000
6/6 - 0s - loss: 2.1444 - mse: 1.4574 - val_loss: 4.0559 - val_mse: 3.3689
Epoch 1359/3000
6/6 - 0s - loss: 2.1438 - mse: 1.4569 - val_loss: 4.0556 - val_mse: 3.3688
Epoch 1360/3000
6/6 - 0s - loss: 2.1429 - mse: 1.4562 - val_loss: 4.0554 - val_mse: 3.3688
Epoch 1361/3000
6/6 - 0s - loss: 2.1422 - mse: 1.4557 - val_loss: 4.0552 - val_mse: 3.3688
Epoch 1362/3000
6/6 - 0s - loss: 2.1414 - mse: 1.4550 - val_loss: 4.0550 - val_mse: 3.3688
Epoch 1363/3000
6/6 - 0s - loss: 2.1407 - mse: 1.4546 - val_loss: 4.0548 - val_mse: 3.3688
Epoch 1364/3000
6/6 - 0s - loss: 2.1401 - mse: 1.4541 - val_loss: 4.0545 - val_mse: 3.3686
Epoch 1365/3000
6/6 - 0s - loss: 2.1393 - mse: 1.4535 - val_loss: 4.0547 - val_mse: 3.3690
Epoch 1366/3000
6/6 - 0s - loss: 2.1385 - mse: 1.4528 - val_loss: 4.0544 - val_mse: 3.3689
Epoch 1367/3000
6/6 - 0s - loss: 2.1377 - mse: 1.4523 - val_loss: 4.0542 - val_mse: 3.3689
Epoch 1368/3000
6/6 - 0s - loss: 2.1369 - mse: 1.4516 - val_loss: 4.0540 - val_mse: 3.3688
Epoch 1369/3000
6/6 - 0s - loss: 2.1362 - mse: 1.4511 - val_loss: 4.0536 - val_mse: 3.3686
Epoch 1370/3000
6/6 - 0s - loss: 2.1354 - mse: 1.4505 - val_loss: 4.0534 - val_mse: 3.3686
Epoch 1371/3000
6/6 - 0s - loss: 2.1346 - mse: 1.4499 - val_loss: 4.0532 - val_mse: 3.3686
Epoch 1372/3000
6/6 - 0s - loss: 2.1341 - mse: 1.4495 - val_loss: 4.0531 - val_mse: 3.3686
Epoch 1373/3000
6/6 - 0s - loss: 2.1332 - mse: 1.4488 - val_loss: 4.0528 - val_mse: 3.3685
Epoch 1374/3000
6/6 - 0s - loss: 2.1325 - mse: 1.4482 - val_loss: 4.0525 - val_mse: 3.3684
Epoch 1375/3000
6/6 - 0s - loss: 2.1317 - mse: 1.4476 - val_loss: 4.0522 - val_mse: 3.3682
Epoch 1376/3000
6/6 - 0s - loss: 2.1310 - mse: 1.4471 - val_loss: 4.0517 - val_mse: 3.3679
Epoch 1377/3000
6/6 - 0s - loss: 2.1302 - mse: 1.4464 - val_loss: 4.0515 - val_mse: 3.3679
Epoch 1378/3000
6/6 - 0s - loss: 2.1294 - mse: 1.4458 - val_loss: 4.0513 - val_mse: 3.3678
Epoch 1379/3000
6/6 - 0s - loss: 2.1286 - mse: 1.4453 - val_loss: 4.0512 - val_mse: 3.3679
Epoch 1380/3000
6/6 - 0s - loss: 2.1279 - mse: 1.4447 - val_loss: 4.0509 - val_mse: 3.3678
Epoch 1381/3000
6/6 - 0s - loss: 2.1272 - mse: 1.4442 - val_loss: 4.0507 - val_mse: 3.3678
Epoch 1382/3000
6/6 - 0s - loss: 2.1264 - mse: 1.4435 - val_loss: 4.0505 - val_mse: 3.3678
Epoch 1383/3000
6/6 - 0s - loss: 2.1258 - mse: 1.4431 - val_loss: 4.0500 - val_mse: 3.3674
Epoch 1384/3000
6/6 - 0s - loss: 2.1248 - mse: 1.4423 - val_loss: 4.0498 - val_mse: 3.3674
Epoch 1385/3000
6/6 - 0s - loss: 2.1241 - mse: 1.4418 - val_loss: 4.0497 - val_mse: 3.3674
Epoch 1386/3000
6/6 - 0s - loss: 2.1234 - mse: 1.4412 - val_loss: 4.0493 - val_mse: 3.3673
Epoch 1387/3000
6/6 - 0s - loss: 2.1226 - mse: 1.4406 - val_loss: 4.0492 - val_mse: 3.3673
Epoch 1388/3000
6/6 - 0s - loss: 2.1220 - mse: 1.4401 - val_loss: 4.0492 - val_mse: 3.3674
Epoch 1389/3000
6/6 - 0s - loss: 2.1212 - mse: 1.4396 - val_loss: 4.0488 - val_mse: 3.3673
Epoch 1390/3000
6/6 - 0s - loss: 2.1204 - mse: 1.4389 - val_loss: 4.0485 - val_mse: 3.3671
Epoch 1391/3000
6/6 - 0s - loss: 2.1197 - mse: 1.4383 - val_loss: 4.0482 - val_mse: 3.3669
Epoch 1392/3000
6/6 - 0s - loss: 2.1190 - mse: 1.4378 - val_loss: 4.0480 - val_mse: 3.3669
Epoch 1393/3000
6/6 - 0s - loss: 2.1181 - mse: 1.4372 - val_loss: 4.0478 - val_mse: 3.3669
Epoch 1394/3000
6/6 - 0s - loss: 2.1174 - mse: 1.4366 - val_loss: 4.0476 - val_mse: 3.3669
Epoch 1395/3000
6/6 - 0s - loss: 2.1167 - mse: 1.4361 - val_loss: 4.0473 - val_mse: 3.3667
Epoch 1396/3000
6/6 - 0s - loss: 2.1161 - mse: 1.4356 - val_loss: 4.0470 - val_mse: 3.3666
Epoch 1397/3000
6/6 - 0s - loss: 2.1152 - mse: 1.4349 - val_loss: 4.0468 - val_mse: 3.3666
Epoch 1398/3000
6/6 - 0s - loss: 2.1146 - mse: 1.4344 - val_loss: 4.0466 - val_mse: 3.3666
Epoch 1399/3000
6/6 - 0s - loss: 2.1139 - mse: 1.4339 - val_loss: 4.0465 - val_mse: 3.3667
Epoch 1400/3000
6/6 - 0s - loss: 2.1130 - mse: 1.4332 - val_loss: 4.0461 - val_mse: 3.3665
Epoch 1401/3000
6/6 - 0s - loss: 2.1122 - mse: 1.4326 - val_loss: 4.0460 - val_mse: 3.3665
Epoch 1402/3000
6/6 - 0s - loss: 2.1115 - mse: 1.4321 - val_loss: 4.0457 - val_mse: 3.3664
Epoch 1403/3000
6/6 - 0s - loss: 2.1107 - mse: 1.4315 - val_loss: 4.0456 - val_mse: 3.3664
Epoch 1404/3000
6/6 - 0s - loss: 2.1101 - mse: 1.4310 - val_loss: 4.0453 - val_mse: 3.3663
Epoch 1405/3000
6/6 - 0s - loss: 2.1093 - mse: 1.4304 - val_loss: 4.0448 - val_mse: 3.3660
Epoch 1406/3000
6/6 - 0s - loss: 2.1086 - mse: 1.4298 - val_loss: 4.0449 - val_mse: 3.3662
Epoch 1407/3000
6/6 - 0s - loss: 2.1080 - mse: 1.4294 - val_loss: 4.0444 - val_mse: 3.3659
Epoch 1408/3000
6/6 - 0s - loss: 2.1071 - mse: 1.4287 - val_loss: 4.0445 - val_mse: 3.3662
Epoch 1409/3000
6/6 - 0s - loss: 2.1064 - mse: 1.4281 - val_loss: 4.0442 - val_mse: 3.3660
Epoch 1410/3000
```

```
6/6 - 0s - loss: 2.1057 - mse: 1.4277 - val_loss: 4.0438 - val_mse: 3.3659
Epoch 1411/3000
6/6 - 0s - loss: 2.1048 - mse: 1.4269 - val_loss: 4.0438 - val_mse: 3.3660
Epoch 1412/3000
6/6 - 0s - loss: 2.1042 - mse: 1.4264 - val_loss: 4.0435 - val_mse: 3.3659
Epoch 1413/3000
6/6 - 0s - loss: 2.1034 - mse: 1.4258 - val_loss: 4.0433 - val_mse: 3.3658
Epoch 1414/3000
6/6 - 0s - loss: 2.1027 - mse: 1.4253 - val_loss: 4.0431 - val_mse: 3.3658
Epoch 1415/3000
6/6 - 0s - loss: 2.1020 - mse: 1.4248 - val_loss: 4.0430 - val_mse: 3.3659
Epoch 1416/3000
6/6 - 0s - loss: 2.1013 - mse: 1.4243 - val_loss: 4.0426 - val_mse: 3.3656
Epoch 1417/3000
6/6 - 0s - loss: 2.1007 - mse: 1.4238 - val_loss: 4.0425 - val_mse: 3.3657
Epoch 1418/3000
6/6 - 0s - loss: 2.0997 - mse: 1.4230 - val_loss: 4.0423 - val_mse: 3.3657
Epoch 1419/3000
6/6 - 0s - loss: 2.0990 - mse: 1.4225 - val_loss: 4.0420 - val_mse: 3.3655
Epoch 1420/3000
6/6 - 0s - loss: 2.0983 - mse: 1.4219 - val_loss: 4.0417 - val_mse: 3.3654
Epoch 1421/3000
6/6 - 0s - loss: 2.0977 - mse: 1.4214 - val_loss: 4.0416 - val_mse: 3.3655
Epoch 1422/3000
6/6 - 0s - loss: 2.0968 - mse: 1.4208 - val_loss: 4.0416 - val_mse: 3.3656
Epoch 1423/3000
6/6 - 0s - loss: 2.0963 - mse: 1.4204 - val_loss: 4.0412 - val_mse: 3.3655
Epoch 1424/3000
6/6 - 0s - loss: 2.0954 - mse: 1.4196 - val_loss: 4.0411 - val_mse: 3.3655
Epoch 1425/3000
6/6 - 0s - loss: 2.0947 - mse: 1.4191 - val_loss: 4.0409 - val_mse: 3.3655
Epoch 1426/3000
6/6 - 0s - loss: 2.0940 - mse: 1.4186 - val_loss: 4.0407 - val_mse: 3.3655
Epoch 1427/3000
6/6 - 0s - loss: 2.0932 - mse: 1.4180 - val_loss: 4.0407 - val_mse: 3.3656
Epoch 1428/3000
6/6 - 0s - loss: 2.0926 - mse: 1.4176 - val_loss: 4.0405 - val_mse: 3.3655
Epoch 1429/3000
6/6 - 0s - loss: 2.0918 - mse: 1.4170 - val_loss: 4.0402 - val_mse: 3.3655
Epoch 1430/3000
6/6 - 0s - loss: 2.0912 - mse: 1.4166 - val_loss: 4.0400 - val_mse: 3.3654
Epoch 1431/3000
6/6 - 0s - loss: 2.0904 - mse: 1.4159 - val_loss: 4.0399 - val_mse: 3.3655
Epoch 1432/3000
6/6 - 0s - loss: 2.0896 - mse: 1.4153 - val_loss: 4.0396 - val_mse: 3.3654
Epoch 1433/3000
6/6 - 0s - loss: 2.0889 - mse: 1.4148 - val_loss: 4.0393 - val_mse: 3.3653
Epoch 1434/3000
6/6 - 0s - loss: 2.0882 - mse: 1.4141 - val_loss: 4.0391 - val_mse: 3.3651
Epoch 1435/3000
6/6 - 0s - loss: 2.0875 - mse: 1.4137 - val_loss: 4.0387 - val_mse: 3.3649
Epoch 1436/3000
6/6 - 0s - loss: 2.0870 - mse: 1.4133 - val_loss: 4.0387 - val_mse: 3.3652
Epoch 1437/3000
6/6 - 0s - loss: 2.0861 - mse: 1.4126 - val_loss: 4.0385 - val_mse: 3.3651
Epoch 1438/3000
6/6 - 0s - loss: 2.0853 - mse: 1.4119 - val_loss: 4.0382 - val_mse: 3.3649
Epoch 1439/3000
6/6 - 0s - loss: 2.0846 - mse: 1.4114 - val_loss: 4.0379 - val_mse: 3.3648
Epoch 1440/3000
6/6 - 0s - loss: 2.0838 - mse: 1.4108 - val_loss: 4.0378 - val_mse: 3.3648
Epoch 1441/3000
6/6 - 0s - loss: 2.0831 - mse: 1.4103 - val_loss: 4.0377 - val_mse: 3.3649
Epoch 1442/3000
6/6 - 0s - loss: 2.0825 - mse: 1.4098 - val_loss: 4.0373 - val_mse: 3.3647
Epoch 1443/3000
6/6 - 0s - loss: 2.0817 - mse: 1.4092 - val_loss: 4.0369 - val_mse: 3.3645
Epoch 1444/3000
6/6 - 0s - loss: 2.0809 - mse: 1.4086 - val_loss: 4.0368 - val_mse: 3.3645
Epoch 1445/3000
6/6 - 0s - loss: 2.0802 - mse: 1.4081 - val_loss: 4.0367 - val_mse: 3.3646
Epoch 1446/3000
6/6 - 0s - loss: 2.0795 - mse: 1.4075 - val_loss: 4.0365 - val_mse: 3.3646
Epoch 1447/3000
6/6 - 0s - loss: 2.0788 - mse: 1.4069 - val_loss: 4.0364 - val_mse: 3.3647
Epoch 1448/3000
6/6 - 0s - loss: 2.0783 - mse: 1.4066 - val_loss: 4.0362 - val_mse: 3.3646
Epoch 1449/3000
6/6 - 0s - loss: 2.0774 - mse: 1.4059 - val_loss: 4.0360 - val_mse: 3.3645
Epoch 1450/3000
6/6 - 0s - loss: 2.0768 - mse: 1.4054 - val_loss: 4.0358 - val_mse: 3.3645
Epoch 1451/3000
6/6 - 0s - loss: 2.0759 - mse: 1.4047 - val_loss: 4.0357 - val_mse: 3.3647
Epoch 1452/3000
6/6 - 0s - loss: 2.0752 - mse: 1.4042 - val_loss: 4.0357 - val_mse: 3.3648
Epoch 1453/3000
6/6 - 0s - loss: 2.0745 - mse: 1.4037 - val_loss: 4.0355 - val_mse: 3.3647
Epoch 1454/3000
6/6 - 0s - loss: 2.0738 - mse: 1.4031 - val_loss: 4.0353 - val_mse: 3.3647
Epoch 1455/3000
6/6 - 0s - loss: 2.0731 - mse: 1.4025 - val_loss: 4.0353 - val_mse: 3.3648
Epoch 1456/3000
6/6 - 0s - loss: 2.0725 - mse: 1.4021 - val_loss: 4.0352 - val_mse: 3.3649
Epoch 1457/3000
6/6 - 0s - loss: 2.0717 - mse: 1.4015 - val_loss: 4.0349 - val_mse: 3.3648
Epoch 1458/3000
6/6 - 0s - loss: 2.0709 - mse: 1.4009 - val_loss: 4.0347 - val_mse: 3.3648
Epoch 1459/3000
6/6 - 0s - loss: 2.0704 - mse: 1.4005 - val_loss: 4.0344 - val_mse: 3.3646
Epoch 1460/3000
6/6 - 0s - loss: 2.0695 - mse: 1.3998 - val_loss: 4.0344 - val_mse: 3.3648
Epoch 1461/3000
6/6 - 0s - loss: 2.0688 - mse: 1.3993 - val_loss: 4.0344 - val_mse: 3.3649
Epoch 1462/3000
6/6 - 0s - loss: 2.0683 - mse: 1.3989 - val_loss: 4.0340 - val_mse: 3.3647
Epoch 1463/3000
6/6 - 0s - loss: 2.0674 - mse: 1.3982 - val_loss: 4.0340 - val_mse: 3.3649
Epoch 1464/3000
6/6 - 0s - loss: 2.0667 - mse: 1.3976 - val_loss: 4.0339 - val_mse: 3.3650
Epoch 1465/3000
6/6 - 0s - loss: 2.0661 - mse: 1.3972 - val_loss: 4.0336 - val_mse: 3.3649
Epoch 1466/3000
6/6 - 0s - loss: 2.0652 - mse: 1.3965 - val_loss: 4.0335 - val_mse: 3.3649
Epoch 1467/3000
6/6 - 0s - loss: 2.0645 - mse: 1.3960 - val_loss: 4.0333 - val_mse: 3.3649
Epoch 1468/3000
6/6 - 0s - loss: 2.0639 - mse: 1.3955 - val_loss: 4.0332 - val_mse: 3.3650
Epoch 1469/3000
6/6 - 0s - loss: 2.0631 - mse: 1.3949 - val_loss: 4.0330 - val_mse: 3.3648
Epoch 1470/3000
6/6 - 0s - loss: 2.0624 - mse: 1.3943 - val_loss: 4.0330 - val_mse: 3.3650
Epoch 1471/3000
6/6 - 0s - loss: 2.0618 - mse: 1.3939 - val_loss: 4.0327 - val_mse: 3.3649
Epoch 1472/3000
6/6 - 0s - loss: 2.0610 - mse: 1.3932 - val_loss: 4.0328 - val_mse: 3.3651
Epoch 1473/3000
6/6 - 0s - loss: 2.0603 - mse: 1.3927 - val_loss: 4.0325 - val_mse: 3.3650
Epoch 1474/3000
6/6 - 0s - loss: 2.0595 - mse: 1.3921 - val_loss: 4.0323 - val_mse: 3.3650
Epoch 1475/3000
6/6 - 0s - loss: 2.0589 - mse: 1.3916 - val_loss: 4.0320 - val_mse: 3.3648
Epoch 1476/3000
6/6 - 0s - loss: 2.0581 - mse: 1.3910 - val_loss: 4.0320 - val_mse: 3.3650
Epoch 1477/3000
6/6 - 0s - loss: 2.0574 - mse: 1.3905 - val_loss: 4.0320 - val_mse: 3.3652
Epoch 1478/3000
6/6 - 0s - loss: 2.0567 - mse: 1.3900 - val_loss: 4.0317 - val_mse: 3.3651
Epoch 1479/3000
6/6 - 0s - loss: 2.0562 - mse: 1.3896 - val_loss: 4.0313 - val_mse: 3.3648
Epoch 1480/3000
6/6 - 0s - loss: 2.0555 - mse: 1.3890 - val_loss: 4.0310 - val_mse: 3.3647
Epoch 1481/3000
6/6 - 0s - loss: 2.0545 - mse: 1.3883 - val_loss: 4.0311 - val_mse: 3.3649
Epoch 1482/3000
6/6 - 0s - loss: 2.0539 - mse: 1.3877 - val_loss: 4.0309 - val_mse: 3.3649
Epoch 1483/3000
6/6 - 0s - loss: 2.0531 - mse: 1.3872 - val_loss: 4.0307 - val_mse: 3.3648
Epoch 1484/3000
6/6 - 0s - loss: 2.0526 - mse: 1.3868 - val_loss: 4.0303 - val_mse: 3.3646
Epoch 1485/3000
6/6 - 0s - loss: 2.0517 - mse: 1.3861 - val_loss: 4.0302 - val_mse: 3.3647
Epoch 1486/3000
6/6 - 0s - loss: 2.0511 - mse: 1.3856 - val_loss: 4.0301 - val_mse: 3.3647
Epoch 1487/3000
6/6 - 0s - loss: 2.0503 - mse: 1.3850 - val_loss: 4.0300 - val_mse: 3.3648
Epoch 1488/3000
6/6 - 0s - loss: 2.0497 - mse: 1.3845 - val_loss: 4.0300 - val_mse: 3.3649
Epoch 1489/3000
6/6 - 0s - loss: 2.0489 - mse: 1.3839 - val_loss: 4.0298 - val_mse: 3.3650
Epoch 1490/3000
6/6 - 0s - loss: 2.0482 - mse: 1.3834 - val_loss: 4.0296 - val_mse: 3.3649
Epoch 1491/3000
6/6 - 0s - loss: 2.0475 - mse: 1.3828 - val_loss: 4.0294 - val_mse: 3.3648
Epoch 1492/3000
6/6 - 0s - loss: 2.0469 - mse: 1.3824 - val_loss: 4.0293 - val_mse: 3.3649
Epoch 1493/3000
6/6 - 0s - loss: 2.0461 - mse: 1.3818 - val_loss: 4.0289 - val_mse: 3.3647
Epoch 1494/3000
6/6 - 0s - loss: 2.0454 - mse: 1.3812 - val_loss: 4.0286 - val_mse: 3.3645
Epoch 1495/3000
6/6 - 0s - loss: 2.0446 - mse: 1.3806 - val_loss: 4.0285 - val_mse: 3.3646
Epoch 1496/3000
6/6 - 0s - loss: 2.0440 - mse: 1.3801 - val_loss: 4.0284 - val_mse: 3.3647
Epoch 1497/3000
6/6 - 0s - loss: 2.0433 - mse: 1.3796 - val_loss: 4.0281 - val_mse: 3.3645
Epoch 1498/3000
6/6 - 0s - loss: 2.0426 - mse: 1.3790 - val_loss: 4.0280 - val_mse: 3.3645
Epoch 1499/3000
6/6 - 0s - loss: 2.0418 - mse: 1.3784 - val_loss: 4.0280 - val_mse: 3.3647
Epoch 1500/3000
6/6 - 0s - loss: 2.0412 - mse: 1.3779 - val_loss: 4.0279 - val_mse: 3.3648
Epoch 1501/3000
6/6 - 0s - loss: 2.0405 - mse: 1.3774 - val_loss: 4.0280 - val_mse: 3.3650
Epoch 1502/3000
6/6 - 0s - loss: 2.0397 - mse: 1.3768 - val_loss: 4.0277 - val_mse: 3.3649
Epoch 1503/3000
6/6 - 0s - loss: 2.0390 - mse: 1.3763 - val_loss: 4.0274 - val_mse: 3.3648
Epoch 1504/3000
6/6 - 0s - loss: 2.0383 - mse: 1.3757 - val_loss: 4.0271 - val_mse: 3.3647
Epoch 1505/3000
6/6 - 0s - loss: 2.0377 - mse: 1.3753 - val_loss: 4.0272 - val_mse: 3.3649
Epoch 1506/3000
6/6 - 0s - loss: 2.0369 - mse: 1.3746 - val_loss: 4.0270 - val_mse: 3.3648
Epoch 1507/3000
6/6 - 0s - loss: 2.0362 - mse: 1.3741 - val_loss: 4.0268 - val_mse: 3.3648
Epoch 1508/3000
6/6 - 0s - loss: 2.0355 - mse: 1.3735 - val_loss: 4.0267 - val_mse: 3.3648
Epoch 1509/3000
6/6 - 0s - loss: 2.0349 - mse: 1.3731 - val_loss: 4.0265 - val_mse: 3.3648
Epoch 1510/3000
6/6 - 0s - loss: 2.0343 - mse: 1.3726 - val_loss: 4.0263 - val_mse: 3.3648
Epoch 1511/3000
6/6 - 0s - loss: 2.0333 - mse: 1.3718 - val_loss: 4.0263 - val_mse: 3.3649
Epoch 1512/3000
6/6 - 0s - loss: 2.0327 - mse: 1.3713 - val_loss: 4.0264 - val_mse: 3.3652
Epoch 1513/3000
6/6 - 0s - loss: 2.0321 - mse: 1.3709 - val_loss: 4.0260 - val_mse: 3.3649
Epoch 1514/3000
6/6 - 0s - loss: 2.0312 - mse: 1.3701 - val_loss: 4.0259 - val_mse: 3.3650
Epoch 1515/3000
6/6 - 0s - loss: 2.0305 - mse: 1.3697 - val_loss: 4.0259 - val_mse: 3.3652
Epoch 1516/3000
6/6 - 0s - loss: 2.0298 - mse: 1.3691 - val_loss: 4.0258 - val_mse: 3.3652
Epoch 1517/3000
6/6 - 0s - loss: 2.0291 - mse: 1.3686 - val_loss: 4.0256 - val_mse: 3.3652
Epoch 1518/3000
6/6 - 0s - loss: 2.0284 - mse: 1.3680 - val_loss: 4.0255 - val_mse: 3.3652
Epoch 1519/3000
6/6 - 0s - loss: 2.0279 - mse: 1.3677 - val_loss: 4.0255 - val_mse: 3.3653
Epoch 1520/3000
6/6 - 0s - loss: 2.0270 - mse: 1.3670 - val_loss: 4.0255 - val_mse: 3.3655
Epoch 1521/3000
6/6 - 0s - loss: 2.0263 - mse: 1.3664 - val_loss: 4.0253 - val_mse: 3.3655
Epoch 1522/3000
6/6 - 0s - loss: 2.0256 - mse: 1.3658 - val_loss: 4.0251 - val_mse: 3.3655
Epoch 1523/3000
6/6 - 0s - loss: 2.0250 - mse: 1.3654 - val_loss: 4.0249 - val_mse: 3.3654
Epoch 1524/3000
6/6 - 0s - loss: 2.0241 - mse: 1.3647 - val_loss: 4.0248 - val_mse: 3.3654
Epoch 1525/3000
6/6 - 0s - loss: 2.0235 - mse: 1.3642 - val_loss: 4.0245 - val_mse: 3.3653
Epoch 1526/3000
6/6 - 0s - loss: 2.0228 - mse: 1.3636 - val_loss: 4.0244 - val_mse: 3.3654
Epoch 1527/3000
6/6 - 0s - loss: 2.0220 - mse: 1.3631 - val_loss: 4.0243 - val_mse: 3.3654
Epoch 1528/3000
6/6 - 0s - loss: 2.0214 - mse: 1.3626 - val_loss: 4.0244 - val_mse: 3.3657
Epoch 1529/3000
6/6 - 0s - loss: 2.0207 - mse: 1.3620 - val_loss: 4.0243 - val_mse: 3.3657
Epoch 1530/3000
6/6 - 0s - loss: 2.0200 - mse: 1.3615 - val_loss: 4.0242 - val_mse: 3.3658
Epoch 1531/3000
6/6 - 0s - loss: 2.0194 - mse: 1.3610 - val_loss: 4.0237 - val_mse: 3.3654
Epoch 1532/3000
6/6 - 0s - loss: 2.0187 - mse: 1.3605 - val_loss: 4.0235 - val_mse: 3.3654
Epoch 1533/3000
6/6 - 0s - loss: 2.0179 - mse: 1.3598 - val_loss: 4.0233 - val_mse: 3.3653
Epoch 1534/3000
6/6 - 0s - loss: 2.0173 - mse: 1.3594 - val_loss: 4.0233 - val_mse: 3.3655
Epoch 1535/3000
6/6 - 0s - loss: 2.0165 - mse: 1.3588 - val_loss: 4.0235 - val_mse: 3.3659
Epoch 1536/3000
6/6 - 0s - loss: 2.0158 - mse: 1.3583 - val_loss: 4.0233 - val_mse: 3.3658
Epoch 1537/3000
6/6 - 0s - loss: 2.0152 - mse: 1.3578 - val_loss: 4.0234 - val_mse: 3.3661
Epoch 1538/3000
6/6 - 0s - loss: 2.0144 - mse: 1.3572 - val_loss: 4.0231 - val_mse: 3.3660
Epoch 1539/3000
6/6 - 0s - loss: 2.0138 - mse: 1.3567 - val_loss: 4.0230 - val_mse: 3.3660
Epoch 1540/3000
```

```
6/6 - 0s - loss: 2.0130 - mse: 1.3561 - val_loss: 4.0232 - val_mse: 3.3663
Epoch 1541/3000
6/6 - 0s - loss: 2.0125 - mse: 1.3557 - val_loss: 4.0228 - val_mse: 3.3661
Epoch 1542/3000
6/6 - 0s - loss: 2.0117 - mse: 1.3550 - val_loss: 4.0228 - val_mse: 3.3662
Epoch 1543/3000
6/6 - 0s - loss: 2.0110 - mse: 1.3545 - val_loss: 4.0228 - val_mse: 3.3664
Epoch 1544/3000
6/6 - 0s - loss: 2.0102 - mse: 1.3539 - val_loss: 4.0227 - val_mse: 3.3664
Epoch 1545/3000
6/6 - 0s - loss: 2.0096 - mse: 1.3534 - val_loss: 4.0225 - val_mse: 3.3664
Epoch 1546/3000
6/6 - 0s - loss: 2.0089 - mse: 1.3529 - val_loss: 4.0224 - val_mse: 3.3665
Epoch 1547/3000
6/6 - 0s - loss: 2.0082 - mse: 1.3523 - val_loss: 4.0224 - val_mse: 3.3666
Epoch 1548/3000
6/6 - 0s - loss: 2.0075 - mse: 1.3518 - val_loss: 4.0223 - val_mse: 3.3667
Epoch 1549/3000
6/6 - 0s - loss: 2.0067 - mse: 1.3512 - val_loss: 4.0220 - val_mse: 3.3665
Epoch 1550/3000
6/6 - 0s - loss: 2.0061 - mse: 1.3507 - val_loss: 4.0218 - val_mse: 3.3665
Epoch 1551/3000
6/6 - 0s - loss: 2.0054 - mse: 1.3501 - val_loss: 4.0217 - val_mse: 3.3665
Epoch 1552/3000
6/6 - 0s - loss: 2.0047 - mse: 1.3496 - val_loss: 4.0215 - val_mse: 3.3665
Epoch 1553/3000
6/6 - 0s - loss: 2.0040 - mse: 1.3490 - val_loss: 4.0214 - val_mse: 3.3666
Epoch 1554/3000
6/6 - 0s - loss: 2.0034 - mse: 1.3486 - val_loss: 4.0212 - val_mse: 3.3665
Epoch 1555/3000
6/6 - 0s - loss: 2.0026 - mse: 1.3479 - val_loss: 4.0212 - val_mse: 3.3667
Epoch 1556/3000
6/6 - 0s - loss: 2.0019 - mse: 1.3474 - val_loss: 4.0212 - val_mse: 3.3668
Epoch 1557/3000
6/6 - 0s - loss: 2.0012 - mse: 1.3468 - val_loss: 4.0210 - val_mse: 3.3667
Epoch 1558/3000
6/6 - 0s - loss: 2.0007 - mse: 1.3465 - val_loss: 4.0208 - val_mse: 3.3667
Epoch 1559/3000
6/6 - 0s - loss: 1.9998 - mse: 1.3458 - val_loss: 4.0208 - val_mse: 3.3669
Epoch 1560/3000
6/6 - 0s - loss: 1.9991 - mse: 1.3452 - val_loss: 4.0206 - val_mse: 3.3669
Epoch 1561/3000
6/6 - 0s - loss: 1.9985 - mse: 1.3448 - val_loss: 4.0206 - val_mse: 3.3669
Epoch 1562/3000
6/6 - 0s - loss: 1.9978 - mse: 1.3442 - val_loss: 4.0204 - val_mse: 3.3669
Epoch 1563/3000
6/6 - 0s - loss: 1.9970 - mse: 1.3436 - val_loss: 4.0202 - val_mse: 3.3669
Epoch 1564/3000
6/6 - 0s - loss: 1.9963 - mse: 1.3431 - val_loss: 4.0202 - val_mse: 3.3670
Epoch 1565/3000
6/6 - 0s - loss: 1.9957 - mse: 1.3426 - val_loss: 4.0199 - val_mse: 3.3669
Epoch 1566/3000
6/6 - 0s - loss: 1.9950 - mse: 1.3420 - val_loss: 4.0196 - val_mse: 3.3667
Epoch 1567/3000
6/6 - 0s - loss: 1.9943 - mse: 1.3414 - val_loss: 4.0196 - val_mse: 3.3668
Epoch 1568/3000
6/6 - 0s - loss: 1.9936 - mse: 1.3409 - val_loss: 4.0196 - val_mse: 3.3670
Epoch 1569/3000
6/6 - 0s - loss: 1.9930 - mse: 1.3405 - val_loss: 4.0193 - val_mse: 3.3668
Epoch 1570/3000
6/6 - 0s - loss: 1.9923 - mse: 1.3399 - val_loss: 4.0192 - val_mse: 3.3669
Epoch 1571/3000
6/6 - 0s - loss: 1.9915 - mse: 1.3393 - val_loss: 4.0190 - val_mse: 3.3668
Epoch 1572/3000
6/6 - 0s - loss: 1.9909 - mse: 1.3388 - val_loss: 4.0191 - val_mse: 3.3671
Epoch 1573/3000
6/6 - 0s - loss: 1.9902 - mse: 1.3383 - val_loss: 4.0191 - val_mse: 3.3673
Epoch 1574/3000
6/6 - 0s - loss: 1.9895 - mse: 1.3377 - val_loss: 4.0187 - val_mse: 3.3670
Epoch 1575/3000
6/6 - 0s - loss: 1.9887 - mse: 1.3371 - val_loss: 4.0186 - val_mse: 3.3671
Epoch 1576/3000
6/6 - 0s - loss: 1.9880 - mse: 1.3365 - val_loss: 4.0186 - val_mse: 3.3672
Epoch 1577/3000
6/6 - 0s - loss: 1.9876 - mse: 1.3362 - val_loss: 4.0182 - val_mse: 3.3669
Epoch 1578/3000
6/6 - 0s - loss: 1.9868 - mse: 1.3356 - val_loss: 4.0183 - val_mse: 3.3672
Epoch 1579/3000
6/6 - 0s - loss: 1.9860 - mse: 1.3350 - val_loss: 4.0181 - val_mse: 3.3672
Epoch 1580/3000
6/6 - 0s - loss: 1.9854 - mse: 1.3345 - val_loss: 4.0180 - val_mse: 3.3671
Epoch 1581/3000
6/6 - 0s - loss: 1.9847 - mse: 1.3340 - val_loss: 4.0180 - val_mse: 3.3673
Epoch 1582/3000
6/6 - 0s - loss: 1.9839 - mse: 1.3333 - val_loss: 4.0179 - val_mse: 3.3674
Epoch 1583/3000
6/6 - 0s - loss: 1.9833 - mse: 1.3328 - val_loss: 4.0178 - val_mse: 3.3675
Epoch 1584/3000
6/6 - 0s - loss: 1.9826 - mse: 1.3323 - val_loss: 4.0179 - val_mse: 3.3677
Epoch 1585/3000
6/6 - 0s - loss: 1.9819 - mse: 1.3318 - val_loss: 4.0177 - val_mse: 3.3676
Epoch 1586/3000
6/6 - 0s - loss: 1.9815 - mse: 1.3315 - val_loss: 4.0173 - val_mse: 3.3673
Epoch 1587/3000
6/6 - 0s - loss: 1.9806 - mse: 1.3307 - val_loss: 4.0174 - val_mse: 3.3677
Epoch 1588/3000
6/6 - 0s - loss: 1.9799 - mse: 1.3302 - val_loss: 4.0174 - val_mse: 3.3678
Epoch 1589/3000
6/6 - 0s - loss: 1.9792 - mse: 1.3297 - val_loss: 4.0176 - val_mse: 3.3681
Epoch 1590/3000
6/6 - 0s - loss: 1.9786 - mse: 1.3292 - val_loss: 4.0175 - val_mse: 3.3682
Epoch 1591/3000
6/6 - 0s - loss: 1.9779 - mse: 1.3286 - val_loss: 4.0174 - val_mse: 3.3682
Epoch 1592/3000
6/6 - 0s - loss: 1.9772 - mse: 1.3281 - val_loss: 4.0173 - val_mse: 3.3683
Epoch 1593/3000
6/6 - 0s - loss: 1.9765 - mse: 1.3275 - val_loss: 4.0171 - val_mse: 3.3683
Epoch 1594/3000
6/6 - 0s - loss: 1.9759 - mse: 1.3271 - val_loss: 4.0172 - val_mse: 3.3685
Epoch 1595/3000
6/6 - 0s - loss: 1.9751 - mse: 1.3264 - val_loss: 4.0172 - val_mse: 3.3686
Epoch 1596/3000
6/6 - 0s - loss: 1.9745 - mse: 1.3260 - val_loss: 4.0173 - val_mse: 3.3689
Epoch 1597/3000
6/6 - 0s - loss: 1.9738 - mse: 1.3255 - val_loss: 4.0171 - val_mse: 3.3689
Epoch 1598/3000
6/6 - 0s - loss: 1.9733 - mse: 1.3251 - val_loss: 4.0168 - val_mse: 3.3687
Epoch 1599/3000
6/6 - 0s - loss: 1.9724 - mse: 1.3243 - val_loss: 4.0169 - val_mse: 3.3689
Epoch 1600/3000
6/6 - 0s - loss: 1.9718 - mse: 1.3239 - val_loss: 4.0169 - val_mse: 3.3691
Epoch 1601/3000
6/6 - 0s - loss: 1.9711 - mse: 1.3233 - val_loss: 4.0168 - val_mse: 3.3691
Epoch 1602/3000
6/6 - 0s - loss: 1.9704 - mse: 1.3228 - val_loss: 4.0166 - val_mse: 3.3691
Epoch 1603/3000
6/6 - 0s - loss: 1.9698 - mse: 1.3223 - val_loss: 4.0164 - val_mse: 3.3690
Epoch 1604/3000
6/6 - 0s - loss: 1.9690 - mse: 1.3217 - val_loss: 4.0164 - val_mse: 3.3692
Epoch 1605/3000
6/6 - 0s - loss: 1.9685 - mse: 1.3213 - val_loss: 4.0162 - val_mse: 3.3692
Epoch 1606/3000
6/6 - 0s - loss: 1.9678 - mse: 1.3207 - val_loss: 4.0164 - val_mse: 3.3694
Epoch 1607/3000
6/6 - 0s - loss: 1.9671 - mse: 1.3203 - val_loss: 4.0164 - val_mse: 3.3696
Epoch 1608/3000
6/6 - 0s - loss: 1.9664 - mse: 1.3197 - val_loss: 4.0162 - val_mse: 3.3696
Epoch 1609/3000
6/6 - 0s - loss: 1.9658 - mse: 1.3192 - val_loss: 4.0161 - val_mse: 3.3696
Epoch 1610/3000
6/6 - 0s - loss: 1.9650 - mse: 1.3186 - val_loss: 4.0160 - val_mse: 3.3697
Epoch 1611/3000
6/6 - 0s - loss: 1.9646 - mse: 1.3183 - val_loss: 4.0160 - val_mse: 3.3698
Epoch 1612/3000
6/6 - 0s - loss: 1.9637 - mse: 1.3176 - val_loss: 4.0157 - val_mse: 3.3697
Epoch 1613/3000
6/6 - 0s - loss: 1.9630 - mse: 1.3170 - val_loss: 4.0157 - val_mse: 3.3698
Epoch 1614/3000
6/6 - 0s - loss: 1.9623 - mse: 1.3165 - val_loss: 4.0156 - val_mse: 3.3698
Epoch 1615/3000
6/6 - 0s - loss: 1.9617 - mse: 1.3160 - val_loss: 4.0154 - val_mse: 3.3697
Epoch 1616/3000
6/6 - 0s - loss: 1.9610 - mse: 1.3154 - val_loss: 4.0152 - val_mse: 3.3697
Epoch 1617/3000
6/6 - 0s - loss: 1.9603 - mse: 1.3149 - val_loss: 4.0149 - val_mse: 3.3696
Epoch 1618/3000
6/6 - 0s - loss: 1.9597 - mse: 1.3144 - val_loss: 4.0150 - val_mse: 3.3698
Epoch 1619/3000
6/6 - 0s - loss: 1.9591 - mse: 1.3140 - val_loss: 4.0149 - val_mse: 3.3699
Epoch 1620/3000
6/6 - 0s - loss: 1.9583 - mse: 1.3134 - val_loss: 4.0147 - val_mse: 3.3699
Epoch 1621/3000
6/6 - 0s - loss: 1.9578 - mse: 1.3130 - val_loss: 4.0148 - val_mse: 3.3701
Epoch 1622/3000
6/6 - 0s - loss: 1.9570 - mse: 1.3123 - val_loss: 4.0146 - val_mse: 3.3700
Epoch 1623/3000
6/6 - 0s - loss: 1.9563 - mse: 1.3118 - val_loss: 4.0145 - val_mse: 3.3701
Epoch 1624/3000
6/6 - 0s - loss: 1.9557 - mse: 1.3113 - val_loss: 4.0145 - val_mse: 3.3702
Epoch 1625/3000
6/6 - 0s - loss: 1.9550 - mse: 1.3108 - val_loss: 4.0145 - val_mse: 3.3703
Epoch 1626/3000
6/6 - 0s - loss: 1.9543 - mse: 1.3103 - val_loss: 4.0144 - val_mse: 3.3705
Epoch 1627/3000
6/6 - 0s - loss: 1.9537 - mse: 1.3098 - val_loss: 4.0145 - val_mse: 3.3706
Epoch 1628/3000
6/6 - 0s - loss: 1.9531 - mse: 1.3093 - val_loss: 4.0143 - val_mse: 3.3706
Epoch 1629/3000
6/6 - 0s - loss: 1.9525 - mse: 1.3088 - val_loss: 4.0141 - val_mse: 3.3705
```

```
Epoch 1630/3000
6/6 - 0s - loss: 1.9516 - mse: 1.3083 - val_loss: 6.0140 - val_mse: 3.3706
Epoch 1631/3000
6/6 - 0s - loss: 1.9510 - mse: 1.3076 - val_loss: 6.0140 - val_mse: 3.3707
Epoch 1632/3000
6/6 - 0s - loss: 1.9504 - mse: 1.3072 - val_loss: 6.0140 - val_mse: 3.3709
Epoch 1633/3000
6/6 - 0s - loss: 1.9497 - mse: 1.3067 - val_loss: 6.0141 - val_mse: 3.3711
Epoch 1634/3000
6/6 - 0s - loss: 1.9490 - mse: 1.3061 - val_loss: 6.0138 - val_mse: 3.3710
Epoch 1635/3000
6/6 - 0s - loss: 1.9484 - mse: 1.3057 - val_loss: 6.0139 - val_mse: 3.3712
Epoch 1636/3000
6/6 - 0s - loss: 1.9477 - mse: 1.3051 - val_loss: 6.0137 - val_mse: 3.3712
Epoch 1637/3000
6/6 - 0s - loss: 1.9471 - mse: 1.3046 - val_loss: 6.0135 - val_mse: 3.3712
Epoch 1638/3000
6/6 - 0s - loss: 1.9464 - mse: 1.3041 - val_loss: 6.0135 - val_mse: 3.3712
Epoch 1639/3000
6/6 - 0s - loss: 1.9457 - mse: 1.3035 - val_loss: 6.0132 - val_mse: 3.3711
Epoch 1640/3000
6/6 - 0s - loss: 1.9450 - mse: 1.3030 - val_loss: 6.0132 - val_mse: 3.3713
Epoch 1641/3000
6/6 - 0s - loss: 1.9444 - mse: 1.3025 - val_loss: 6.0130 - val_mse: 3.3712
Epoch 1642/3000
6/6 - 0s - loss: 1.9437 - mse: 1.3019 - val_loss: 6.0129 - val_mse: 3.3712
Epoch 1643/3000
6/6 - 0s - loss: 1.9431 - mse: 1.3015 - val_loss: 6.0130 - val_mse: 3.3714
Epoch 1644/3000
6/6 - 0s - loss: 1.9425 - mse: 1.3010 - val_loss: 6.0127 - val_mse: 3.3713
Epoch 1645/3000
6/6 - 0s - loss: 1.9417 - mse: 1.3004 - val_loss: 6.0125 - val_mse: 3.3713
Epoch 1646/3000
6/6 - 0s - loss: 1.9410 - mse: 1.2998 - val_loss: 6.0125 - val_mse: 3.3714
Epoch 1647/3000
6/6 - 0s - loss: 1.9403 - mse: 1.2993 - val_loss: 6.0122 - val_mse: 3.3712
Epoch 1648/3000
6/6 - 0s - loss: 1.9398 - mse: 1.2989 - val_loss: 6.0118 - val_mse: 3.3709
Epoch 1649/3000
6/6 - 0s - loss: 1.9390 - mse: 1.2982 - val_loss: 6.0117 - val_mse: 3.3711
Epoch 1650/3000
6/6 - 0s - loss: 1.9383 - mse: 1.2977 - val_loss: 6.0117 - val_mse: 3.3712
Epoch 1651/3000
6/6 - 0s - loss: 1.9377 - mse: 1.2972 - val_loss: 6.0117 - val_mse: 3.3713
Epoch 1652/3000
6/6 - 0s - loss: 1.9370 - mse: 1.2967 - val_loss: 6.0118 - val_mse: 3.3715
Epoch 1653/3000
6/6 - 0s - loss: 1.9363 - mse: 1.2961 - val_loss: 6.0117 - val_mse: 3.3716
Epoch 1654/3000
6/6 - 0s - loss: 1.9358 - mse: 1.2957 - val_loss: 6.0115 - val_mse: 3.3715
Epoch 1655/3000
6/6 - 0s - loss: 1.9350 - mse: 1.2951 - val_loss: 6.0115 - val_mse: 3.3717
Epoch 1656/3000
6/6 - 0s - loss: 1.9343 - mse: 1.2946 - val_loss: 6.0114 - val_mse: 3.3717
Epoch 1657/3000
6/6 - 0s - loss: 1.9337 - mse: 1.2941 - val_loss: 6.0114 - val_mse: 3.3719
Epoch 1658/3000
6/6 - 0s - loss: 1.9330 - mse: 1.2935 - val_loss: 6.0113 - val_mse: 3.3719
Epoch 1659/3000
6/6 - 0s - loss: 1.9324 - mse: 1.2931 - val_loss: 6.0112 - val_mse: 3.3719
Epoch 1660/3000
6/6 - 0s - loss: 1.9317 - mse: 1.2925 - val_loss: 6.0111 - val_mse: 3.3720
Epoch 1661/3000
6/6 - 0s - loss: 1.9310 - mse: 1.2920 - val_loss: 6.0110 - val_mse: 3.3721
Epoch 1662/3000
6/6 - 0s - loss: 1.9304 - mse: 1.2915 - val_loss: 6.0110 - val_mse: 3.3722
Epoch 1663/3000
6/6 - 0s - loss: 1.9298 - mse: 1.2910 - val_loss: 6.0107 - val_mse: 3.3720
Epoch 1664/3000
6/6 - 0s - loss: 1.9291 - mse: 1.2904 - val_loss: 6.0109 - val_mse: 3.3723
Epoch 1665/3000
6/6 - 0s - loss: 1.9285 - mse: 1.2900 - val_loss: 6.0107 - val_mse: 3.3723
Epoch 1666/3000
6/6 - 0s - loss: 1.9276 - mse: 1.2893 - val_loss: 6.0106 - val_mse: 3.3723
Epoch 1667/3000
6/6 - 0s - loss: 1.9271 - mse: 1.2889 - val_loss: 6.0104 - val_mse: 3.3723
Epoch 1668/3000
6/6 - 0s - loss: 1.9265 - mse: 1.2885 - val_loss: 6.0101 - val_mse: 3.3722
Epoch 1669/3000
6/6 - 0s - loss: 1.9257 - mse: 1.2877 - val_loss: 6.0102 - val_mse: 3.3723
Epoch 1670/3000
6/6 - 0s - loss: 1.9250 - mse: 1.2872 - val_loss: 6.0100 - val_mse: 3.3723
Epoch 1671/3000
6/6 - 0s - loss: 1.9243 - mse: 1.2867 - val_loss: 6.0100 - val_mse: 3.3724
Epoch 1672/3000
6/6 - 0s - loss: 1.9237 - mse: 1.2862 - val_loss: 6.0100 - val_mse: 3.3725
Epoch 1673/3000
6/6 - 0s - loss: 1.9230 - mse: 1.2856 - val_loss: 6.0098 - val_mse: 3.3725
Epoch 1674/3000
6/6 - 0s - loss: 1.9224 - mse: 1.2851 - val_loss: 6.0096 - val_mse: 3.3724
Epoch 1675/3000
6/6 - 0s - loss: 1.9217 - mse: 1.2846 - val_loss: 6.0096 - val_mse: 3.3726
Epoch 1676/3000
6/6 - 0s - loss: 1.9209 - mse: 1.2840 - val_loss: 6.0095 - val_mse: 3.3726
Epoch 1677/3000
6/6 - 0s - loss: 1.9204 - mse: 1.2836 - val_loss: 6.0093 - val_mse: 3.3725
Epoch 1678/3000
6/6 - 0s - loss: 1.9197 - mse: 1.2830 - val_loss: 6.0091 - val_mse: 3.3725
Epoch 1679/3000
6/6 - 0s - loss: 1.9191 - mse: 1.2825 - val_loss: 6.0088 - val_mse: 3.3723
Epoch 1680/3000
6/6 - 0s - loss: 1.9183 - mse: 1.2819 - val_loss: 6.0088 - val_mse: 3.3725
Epoch 1681/3000
6/6 - 0s - loss: 1.9177 - mse: 1.2814 - val_loss: 6.0087 - val_mse: 3.3725
Epoch 1682/3000
6/6 - 0s - loss: 1.9170 - mse: 1.2809 - val_loss: 6.0087 - val_mse: 3.3726
Epoch 1683/3000
6/6 - 0s - loss: 1.9163 - mse: 1.2803 - val_loss: 6.0086 - val_mse: 3.3727
Epoch 1684/3000
6/6 - 0s - loss: 1.9157 - mse: 1.2799 - val_loss: 6.0084 - val_mse: 3.3727
Epoch 1685/3000
6/6 - 0s - loss: 1.9150 - mse: 1.2793 - val_loss: 6.0083 - val_mse: 3.3727
Epoch 1686/3000
6/6 - 0s - loss: 1.9144 - mse: 1.2788 - val_loss: 6.0081 - val_mse: 3.3727
Epoch 1687/3000
6/6 - 0s - loss: 1.9138 - mse: 1.2784 - val_loss: 6.0081 - val_mse: 3.3727
Epoch 1688/3000
6/6 - 0s - loss: 1.9132 - mse: 1.2779 - val_loss: 6.0079 - val_mse: 3.3727
Epoch 1689/3000
6/6 - 0s - loss: 1.9124 - mse: 1.2773 - val_loss: 6.0079 - val_mse: 3.3728
Epoch 1690/3000
6/6 - 0s - loss: 1.9118 - mse: 1.2768 - val_loss: 6.0078 - val_mse: 3.3729
Epoch 1691/3000
6/6 - 0s - loss: 1.9111 - mse: 1.2762 - val_loss: 6.0076 - val_mse: 3.3728
Epoch 1692/3000
6/6 - 0s - loss: 1.9105 - mse: 1.2758 - val_loss: 6.0075 - val_mse: 3.3729
Epoch 1693/3000
6/6 - 0s - loss: 1.9099 - mse: 1.2753 - val_loss: 6.0072 - val_mse: 3.3727
Epoch 1694/3000
6/6 - 0s - loss: 1.9092 - mse: 1.2747 - val_loss: 6.0071 - val_mse: 3.3727
Epoch 1695/3000
6/6 - 0s - loss: 1.9085 - mse: 1.2742 - val_loss: 6.0069 - val_mse: 3.3726
Epoch 1696/3000
6/6 - 0s - loss: 1.9078 - mse: 1.2736 - val_loss: 6.0069 - val_mse: 3.3728
Epoch 1697/3000
6/6 - 0s - loss: 1.9072 - mse: 1.2732 - val_loss: 6.0069 - val_mse: 3.3730
Epoch 1698/3000
6/6 - 0s - loss: 1.9065 - mse: 1.2726 - val_loss: 6.0068 - val_mse: 3.3730
Epoch 1699/3000
6/6 - 0s - loss: 1.9058 - mse: 1.2721 - val_loss: 6.0066 - val_mse: 3.3731
Epoch 1700/3000
6/6 - 0s - loss: 1.9052 - mse: 1.2715 - val_loss: 6.0066 - val_mse: 3.3731
Epoch 1701/3000
6/6 - 0s - loss: 1.9045 - mse: 1.2710 - val_loss: 6.0064 - val_mse: 3.3730
Epoch 1702/3000
6/6 - 0s - loss: 1.9039 - mse: 1.2705 - val_loss: 6.0063 - val_mse: 3.3731
Epoch 1703/3000
6/6 - 0s - loss: 1.9032 - mse: 1.2700 - val_loss: 6.0064 - val_mse: 3.3733
Epoch 1704/3000
6/6 - 0s - loss: 1.9026 - mse: 1.2695 - val_loss: 6.0060 - val_mse: 3.3730
Epoch 1705/3000
6/6 - 0s - loss: 1.9019 - mse: 1.2690 - val_loss: 6.0059 - val_mse: 3.3731
Epoch 1706/3000
6/6 - 0s - loss: 1.9012 - mse: 1.2684 - val_loss: 6.0058 - val_mse: 3.3731
Epoch 1707/3000
6/6 - 0s - loss: 1.9007 - mse: 1.2681 - val_loss: 6.0060 - val_mse: 3.3734
Epoch 1708/3000
6/6 - 0s - loss: 1.9000 - mse: 1.2675 - val_loss: 6.0057 - val_mse: 3.3733
Epoch 1709/3000
6/6 - 0s - loss: 1.8994 - mse: 1.2670 - val_loss: 6.0054 - val_mse: 3.3731
Epoch 1710/3000
6/6 - 0s - loss: 1.8986 - mse: 1.2664 - val_loss: 6.0053 - val_mse: 3.3732
Epoch 1711/3000
6/6 - 0s - loss: 1.8980 - mse: 1.2659 - val_loss: 6.0054 - val_mse: 3.3734
Epoch 1712/3000
6/6 - 0s - loss: 1.8974 - mse: 1.2654 - val_loss: 6.0052 - val_mse: 3.3733
Epoch 1713/3000
6/6 - 0s - loss: 1.8966 - mse: 1.2648 - val_loss: 6.0051 - val_mse: 3.3733
Epoch 1714/3000
6/6 - 0s - loss: 1.8961 - mse: 1.2644 - val_loss: 6.0049 - val_mse: 3.3733
Epoch 1715/3000
6/6 - 0s - loss: 1.8954 - mse: 1.2638 - val_loss: 6.0048 - val_mse: 3.3733
Epoch 1716/3000
6/6 - 0s - loss: 1.8948 - mse: 1.2634 - val_loss: 6.0046 - val_mse: 3.3732
Epoch 1717/3000
6/6 - 0s - loss: 1.8940 - mse: 1.2627 - val_loss: 6.0044 - val_mse: 3.3732
Epoch 1718/3000
6/6 - 0s - loss: 1.8933 - mse: 1.2622 - val_loss: 6.0044 - val_mse: 3.3734
Epoch 1719/3000
6/6 - 0s - loss: 1.8927 - mse: 1.2617 - val_loss: 6.0043 - val_mse: 3.3734
Epoch 1720/3000
6/6 - 0s - loss: 1.8920 - mse: 1.2611 - val_loss: 6.0042 - val_mse: 3.3734
Epoch 1721/3000
6/6 - 0s - loss: 1.8914 - mse: 1.2607 - val_loss: 6.0043 - val_mse: 3.3737
Epoch 1722/3000
6/6 - 0s - loss: 1.8907 - mse: 1.2601 - val_loss: 6.0043 - val_mse: 3.3738
Epoch 1723/3000
6/6 - 0s - loss: 1.8901 - mse: 1.2596 - val_loss: 6.0043 - val_mse: 3.3739
Epoch 1724/3000
6/6 - 0s - loss: 1.8895 - mse: 1.2591 - val_loss: 6.0042 - val_mse: 3.3740
Epoch 1725/3000
6/6 - 0s - loss: 1.8888 - mse: 1.2586 - val_loss: 6.0042 - val_mse: 3.3741
Epoch 1726/3000
6/6 - 0s - loss: 1.8882 - mse: 1.2581 - val_loss: 6.0040 - val_mse: 3.3740
Epoch 1727/3000
6/6 - 0s - loss: 1.8875 - mse: 1.2575 - val_loss: 6.0039 - val_mse: 3.3740
Epoch 1728/3000
6/6 - 0s - loss: 1.8868 - mse: 1.2570 - val_loss: 6.0038 - val_mse: 3.3741
Epoch 1729/3000
6/6 - 0s - loss: 1.8862 - mse: 1.2565 - val_loss: 6.0040 - val_mse: 3.3744
Epoch 1730/3000
6/6 - 0s - loss: 1.8855 - mse: 1.2560 - val_loss: 6.0039 - val_mse: 3.3744
Epoch 1731/3000
6/6 - 0s - loss: 1.8848 - mse: 1.2555 - val_loss: 6.0039 - val_mse: 3.3746
Epoch 1732/3000
6/6 - 0s - loss: 1.8843 - mse: 1.2550 - val_loss: 6.0040 - val_mse: 3.3748
Epoch 1733/3000
6/6 - 0s - loss: 1.8836 - mse: 1.2545 - val_loss: 6.0039 - val_mse: 3.3749
Epoch 1734/3000
6/6 - 0s - loss: 1.8830 - mse: 1.2540 - val_loss: 6.0038 - val_mse: 3.3749
Epoch 1735/3000
6/6 - 0s - loss: 1.8823 - mse: 1.2534 - val_loss: 6.0037 - val_mse: 3.3750
Epoch 1736/3000
6/6 - 0s - loss: 1.8816 - mse: 1.2529 - val_loss: 6.0036 - val_mse: 3.3750
Epoch 1737/3000
6/6 - 0s - loss: 1.8810 - mse: 1.2524 - val_loss: 6.0035 - val_mse: 3.3751
Epoch 1738/3000
6/6 - 0s - loss: 1.8803 - mse: 1.2519 - val_loss: 6.0034 - val_mse: 3.3751
Epoch 1739/3000
6/6 - 0s - loss: 1.8798 - mse: 1.2515 - val_loss: 6.0032 - val_mse: 3.3750
Epoch 1740/3000
6/6 - 0s - loss: 1.8790 - mse: 1.2508 - val_loss: 6.0031 - val_mse: 3.3750
Epoch 1741/3000
6/6 - 0s - loss: 1.8784 - mse: 1.2504 - val_loss: 6.0033 - val_mse: 3.3753
Epoch 1742/3000
6/6 - 0s - loss: 1.8777 - mse: 1.2498 - val_loss: 6.0030 - val_mse: 3.3752
Epoch 1743/3000
6/6 - 0s - loss: 1.8771 - mse: 1.2493 - val_loss: 6.0030 - val_mse: 3.3753
Epoch 1744/3000
6/6 - 0s - loss: 1.8764 - mse: 1.2488 - val_loss: 6.0029 - val_mse: 3.3753
Epoch 1745/3000
6/6 - 0s - loss: 1.8757 - mse: 1.2482 - val_loss: 6.0027 - val_mse: 3.3753
Epoch 1746/3000
6/6 - 0s - loss: 1.8752 - mse: 1.2478 - val_loss: 6.0026 - val_mse: 3.3753
Epoch 1747/3000
6/6 - 0s - loss: 1.8744 - mse: 1.2472 - val_loss: 6.0025 - val_mse: 3.3754
Epoch 1748/3000
6/6 - 0s - loss: 1.8738 - mse: 1.2467 - val_loss: 6.0024 - val_mse: 3.3754
Epoch 1749/3000
6/6 - 0s - loss: 1.8732 - mse: 1.2462 - val_loss: 6.0024 - val_mse: 3.3755
Epoch 1750/3000
6/6 - 0s - loss: 1.8726 - mse: 1.2457 - val_loss: 6.0025 - val_mse: 3.3757
Epoch 1751/3000
6/6 - 0s - loss: 1.8720 - mse: 1.2453 - val_loss: 6.0026 - val_mse: 3.3760
Epoch 1752/3000
6/6 - 0s - loss: 1.8714 - mse: 1.2448 - val_loss: 6.0025 - val_mse: 3.3760
Epoch 1753/3000
6/6 - 0s - loss: 1.8706 - mse: 1.2442 - val_loss: 6.0024 - val_mse: 3.3761
Epoch 1754/3000
6/6 - 0s - loss: 1.8701 - mse: 1.2438 - val_loss: 6.0021 - val_mse: 3.3759
Epoch 1755/3000
6/6 - 0s - loss: 1.8693 - mse: 1.2432 - val_loss: 6.0020 - val_mse: 3.3760
Epoch 1756/3000
6/6 - 0s - loss: 1.8687 - mse: 1.2426 - val_loss: 6.0020 - val_mse: 3.3761
Epoch 1757/3000
6/6 - 0s - loss: 1.8680 - mse: 1.2422 - val_loss: 6.0019 - val_mse: 3.3761
Epoch 1758/3000
6/6 - 0s - loss: 1.8675 - mse: 1.2417 - val_loss: 6.0017 - val_mse: 3.3760
Epoch 1759/3000
6/6 - 0s - loss: 1.8667 - mse: 1.2410 - val_loss: 6.0018 - val_mse: 3.3763
Epoch 1760/3000
6/6 - 0s - loss: 1.8661 - mse: 1.2406 - val_loss: 6.0020 - val_mse: 3.3766
Epoch 1761/3000
6/6 - 0s - loss: 1.8655 - mse: 1.2401 - val_loss: 6.0019 - val_mse: 3.3766
Epoch 1762/3000
6/6 - 0s - loss: 1.8648 - mse: 1.2396 - val_loss: 6.0017 - val_mse: 3.3766
Epoch 1763/3000
6/6 - 0s - loss: 1.8641 - mse: 1.2390 - val_loss: 6.0017 - val_mse: 3.3767
Epoch 1764/3000
6/6 - 0s - loss: 1.8635 - mse: 1.2386 - val_loss: 6.0018 - val_mse: 3.3769
Epoch 1765/3000
6/6 - 0s - loss: 1.8629 - mse: 1.2380 - val_loss: 6.0018 - val_mse: 3.3770
Epoch 1766/3000
6/6 - 0s - loss: 1.8623 - mse: 1.2376 - val_loss: 6.0016 - val_mse: 3.3770
Epoch 1767/3000
6/6 - 0s - loss: 1.8616 - mse: 1.2371 - val_loss: 6.0015 - val_mse: 3.3770
Epoch 1768/3000
6/6 - 0s - loss: 1.8611 - mse: 1.2367 - val_loss: 6.0012 - val_mse: 3.3769
Epoch 1769/3000
6/6 - 0s - loss: 1.8603 - mse: 1.2360 - val_loss: 6.0013 - val_mse: 3.3771
Epoch 1770/3000
6/6 - 0s - loss: 1.8597 - mse: 1.2356 - val_loss: 6.0013 - val_mse: 3.3772
Epoch 1771/3000
6/6 - 0s - loss: 1.8590 - mse: 1.2350 - val_loss: 6.0014 - val_mse: 3.3773
Epoch 1772/3000
6/6 - 0s - loss: 1.8585 - mse: 1.2346 - val_loss: 6.0016 - val_mse: 3.3778
Epoch 1773/3000
6/6 - 0s - loss: 1.8578 - mse: 1.2340 - val_loss: 6.0017 - val_mse: 3.3780
Epoch 1774/3000
6/6 - 0s - loss: 1.8572 - mse: 1.2335 - val_loss: 6.0015 - val_mse: 3.3779
Epoch 1775/3000
6/6 - 0s - loss: 1.8567 - mse: 1.2332 - val_loss: 6.0013 - val_mse: 3.3778
Epoch 1776/3000
6/6 - 0s - loss: 1.8559 - mse: 1.2325 - val_loss: 6.0013 - val_mse: 3.3780
Epoch 1777/3000
6/6 - 0s - loss: 1.8553 - mse: 1.2320 - val_loss: 6.0010 - val_mse: 3.3778
Epoch 1778/3000
6/6 - 0s - loss: 1.8546 - mse: 1.2315 - val_loss: 6.0009 - val_mse: 3.3778
Epoch 1779/3000
6/6 - 0s - loss: 1.8539 - mse: 1.2309 - val_loss: 6.0008 - val_mse: 3.3779
Epoch 1780/3000
6/6 - 0s - loss: 1.8533 - mse: 1.2305 - val_loss: 6.0008 - val_mse: 3.3780
Epoch 1781/3000
6/6 - 0s - loss: 1.8527 - mse: 1.2299 - val_loss: 6.0008 - val_mse: 3.3782
Epoch 1782/3000
6/6 - 0s - loss: 1.8520 - mse: 1.2294 - val_loss: 6.0009 - val_mse: 3.3784
Epoch 1783/3000
6/6 - 0s - loss: 1.8514 - mse: 1.2289 - val_loss: 6.0007 - val_mse: 3.3783
Epoch 1784/3000
6/6 - 0s - loss: 1.8508 - mse: 1.2284 - val_loss: 6.0006 - val_mse: 3.3784
Epoch 1785/3000
6/6 - 0s - loss: 1.8501 - mse: 1.2279 - val_loss: 6.0006 - val_mse: 3.3784
Epoch 1786/3000
6/6 - 0s - loss: 1.8494 - mse: 1.2273 - val_loss: 6.0005 - val_mse: 3.3785
Epoch 1787/3000
6/6 - 0s - loss: 1.8488 - mse: 1.2269 - val_loss: 6.0004 - val_mse: 3.3785
Epoch 1788/3000
6/6 - 0s - loss: 1.8481 - mse: 1.2263 - val_loss: 6.0004 - val_mse: 3.3787
Epoch 1789/3000
6/6 - 0s - loss: 1.8476 - mse: 1.2259 - val_loss: 6.0004 - val_mse: 3.3788
Epoch 1790/3000
6/6 - 0s - loss: 1.8468 - mse: 1.2252 - val_loss: 6.0004 - val_mse: 3.3789
Epoch 1791/3000
6/6 - 0s - loss: 1.8462 - mse: 1.2248 - val_loss: 6.0002 - val_mse: 3.3789
Epoch 1792/3000
6/6 - 0s - loss: 1.8455 - mse: 1.2242 - val_loss: 6.0002 - val_mse: 3.3790
Epoch 1793/3000
6/6 - 0s - loss: 1.8449 - mse: 1.2238 - val_loss: 6.0002 - val_mse: 3.3791
Epoch 1794/3000
6/6 - 0s - loss: 1.8442 - mse: 1.2232 - val_loss: 6.0001 - val_mse: 3.3791
Epoch 1795/3000
6/6 - 0s - loss: 1.8437 - mse: 1.2228 - val_loss: 6.0001 - val_mse: 3.3793
Epoch 1796/3000
6/6 - 0s - loss: 1.8431 - mse: 1.2223 - val_loss: 6.0003 - val_mse: 3.3796
Epoch 1797/3000
6/6 - 0s - loss: 1.8423 - mse: 1.2217 - val_loss: 6.0002 - val_mse: 3.3797
Epoch 1798/3000
6/6 - 0s - loss: 1.8417 - mse: 1.2212 - val_loss: 6.0000 - val_mse: 3.3796
Epoch 1799/3000
6/6 - 0s - loss: 1.8411 - mse: 1.2207 - val_loss: 6.0002 - val_mse: 3.3799
Epoch 1800/3000
6/6 - 0s - loss: 1.8407 - mse: 1.2205 - val_loss: 5.9998 - val_mse: 3.3796
Epoch 1801/3000
6/6 - 0s - loss: 1.8398 - mse: 1.2196 - val_loss: 5.9997 - val_mse: 3.3797
Epoch 1802/3000
6/6 - 0s - loss: 1.8392 - mse: 1.2192 - val_loss: 6.0000 - val_mse: 3.3800
Epoch 1803/3000
6/6 - 0s - loss: 1.8386 - mse: 1.2187 - val_loss: 6.0001 - val_mse: 3.3804
Epoch 1804/3000
6/6 - 0s - loss: 1.8379 - mse: 1.2181 - val_loss: 6.0000 - val_mse: 3.3803
Epoch 1805/3000
6/6 - 0s - loss: 1.8373 - mse: 1.2177 - val_loss: 5.9998 - val_mse: 3.3802
Epoch 1806/3000
6/6 - 0s - loss: 1.8365 - mse: 1.2170 - val_loss: 5.9996 - val_mse: 3.3802
Epoch 1807/3000
6/6 - 0s - loss: 1.8359 - mse: 1.2166 - val_loss: 5.9997 - val_mse: 3.3804
Epoch 1808/3000
6/6 - 0s - loss: 1.8353 - mse: 1.2161 - val_loss: 5.9997 - val_mse: 3.3805
Epoch 1809/3000
6/6 - 0s - loss: 1.8347 - mse: 1.2155 - val_loss: 5.9996 - val_mse: 3.3805
Epoch 1810/3000
6/6 - 0s - loss: 1.8340 - mse: 1.2150 - val_loss: 5.9995 - val_mse: 3.3806
Epoch 1811/3000
6/6 - 0s - loss: 1.8334 - mse: 1.2145 - val_loss: 5.9994 - val_mse: 3.3806
Epoch 1812/3000
6/6 - 0s - loss: 1.8329 - mse: 1.2141 - val_loss: 5.9992 - val_mse: 3.3805
Epoch 1813/3000
6/6 - 0s - loss: 1.8321 - mse: 1.2135 - val_loss: 5.9991 - val_mse: 3.3805
Epoch 1814/3000
6/6 - 0s - loss: 1.8314 - mse: 1.2129 - val_loss: 5.9989 - val_mse: 3.3805
Epoch 1815/3000
6/6 - 0s - loss: 1.8307 - mse: 1.2124 - val_loss: 5.9990 - val_mse: 3.3807
Epoch 1816/3000
6/6 - 0s - loss: 1.8301 - mse: 1.2118 - val_loss: 5.9990 - val_mse: 3.3808
Epoch 1817/3000
6/6 - 0s - loss: 1.8295 - mse: 1.2113 - val_loss: 5.9988 - val_mse: 3.3807
Epoch 1818/3000
6/6 - 0s - loss: 1.8290 - mse: 1.2110 - val_loss: 5.9988 - val_mse: 3.3809
Epoch 1819/3000
6/6 - 0s - loss: 1.8282 - mse: 1.2103 - val_loss: 5.9986 - val_mse: 3.3810
Epoch 1820/3000
6/6 - 0s - loss: 1.8276 - mse: 1.2098 - val_loss: 5.9986 - val_mse: 3.3809
Epoch 1821/3000
6/6 - 0s - loss: 1.8269 - mse: 1.2093 - val_loss: 5.9984 - val_mse: 3.3808
Epoch 1822/3000
6/6 - 0s - loss: 1.8263 - mse: 1.2088 - val_loss: 5.9983 - val_mse: 3.3808
Epoch 1823/3000
6/6 - 0s - loss: 1.8257 - mse: 1.2083 - val_loss: 5.9983 - val_mse: 3.3811
Epoch 1824/3000
6/6 - 0s - loss: 1.8250 - mse: 1.2078 - val_loss: 5.9983 - val_mse: 3.3811
Epoch 1825/3000
6/6 - 0s - loss: 1.8243 - mse: 1.2072 - val_loss: 5.9982 - val_mse: 3.3811
Epoch 1826/3000
6/6 - 0s - loss: 1.8237 - mse: 1.2067 - val_loss: 5.9982 - val_mse: 3.3813
Epoch 1827/3000
6/6 - 0s - loss: 1.8231 - mse: 1.2062 - val_loss: 5.9979 - val_mse: 3.3811
Epoch 1828/3000
6/6 - 0s - loss: 1.8225 - mse: 1.2057 - val_loss: 5.9980 - val_mse: 3.3813
Epoch 1829/3000
6/6 - 0s - loss: 1.8219 - mse: 1.2051 - val_loss: 5.9978 - val_mse: 3.3813
Epoch 1830/3000
6/6 - 0s - loss: 1.8212 - mse: 1.2047 - val_loss: 5.9975 - val_mse: 3.3811
Epoch 1831/3000
6/6 - 0s - loss: 1.8205 - mse: 1.2041 - val_loss: 5.9976 - val_mse: 3.3813
Epoch 1832/3000
6/6 - 0s - loss: 1.8199 - mse: 1.2036 - val_loss: 5.9976 - val_mse: 3.3814
Epoch 1833/3000
6/6 - 0s - loss: 1.8193 - mse: 1.2031 - val_loss: 5.9977 - val_mse: 3.3816
Epoch 1834/3000
6/6 - 0s - loss: 1.8186 - mse: 1.2026 - val_loss: 5.9975 - val_mse: 3.3815
Epoch 1835/3000
6/6 - 0s - loss: 1.8180 - mse: 1.2020 - val_loss: 5.9973 - val_mse: 3.3815
Epoch 1836/3000
6/6 - 0s - loss: 1.8174 - mse: 1.2016 - val_loss: 5.9974 - val_mse: 3.3817
Epoch 1837/3000
6/6 - 0s - loss: 1.8169 - mse: 1.2012 - val_loss: 5.9973 - val_mse: 3.3816
Epoch 1838/3000
6/6 - 0s - loss: 1.8161 - mse: 1.2004 - val_loss: 5.9972 - val_mse: 3.3817
Epoch 1839/3000
6/6 - 0s - loss: 1.8154 - mse: 1.2000 - val_loss: 5.9972 - val_mse: 3.3818
Epoch 1840/3000
6/6 - 0s - loss: 1.8147 - mse: 1.1994 - val_loss: 5.9971 - val_mse: 3.3819
Epoch 1841/3000
6/6 - 0s - loss: 1.8141 - mse: 1.1990 - val_loss: 5.9969 - val_mse: 3.3818
Epoch 1842/3000
6/6 - 0s - loss: 1.8136 - mse: 1.1985 - val_loss: 5.9968 - val_mse: 3.3818
Epoch 1843/3000
6/6 - 0s - loss: 1.8128 - mse: 1.1979 - val_loss: 5.9969 - val_mse: 3.3821
Epoch 1844/3000
6/6 - 0s - loss: 1.8122 - mse: 1.1974 - val_loss: 5.9969 - val_mse: 3.3822
Epoch 1845/3000
6/6 - 0s - loss: 1.8117 - mse: 1.1970 - val_loss: 5.9968 - val_mse: 3.3822
Epoch 1846/3000
6/6 - 0s - loss: 1.8110 - mse: 1.1964 - val_loss: 5.9968 - val_mse: 3.3823
Epoch 1847/3000
6/6 - 0s - loss: 1.8102 - mse: 1.1958 - val_loss: 5.9968 - val_mse: 3.3824
Epoch 1848/3000
6/6 - 0s - loss: 1.8098 - mse: 1.1955 - val_loss: 5.9969 - val_mse: 3.3827
Epoch 1849/3000
6/6 - 0s - loss: 1.8090 - mse: 1.1948 - val_loss: 5.9968 - val_mse: 3.3827
Epoch 1850/3000
6/6 - 0s - loss: 1.8084 - mse: 1.1944 - val_loss: 5.9968 - val_mse: 3.3828
Epoch 1851/3000
6/6 - 0s - loss: 1.8078 - mse: 1.1939 - val_loss: 5.9968 - val_mse: 3.3829
Epoch 1852/3000
6/6 - 0s - loss: 1.8072 - mse: 1.1933 - val_loss: 5.9966 - val_mse: 3.3828
Epoch 1853/3000
6/6 - 0s - loss: 1.8065 - mse: 1.1928 - val_loss: 5.9965 - val_mse: 3.3829
Epoch 1854/3000
6/6 - 0s - loss: 1.8059 - mse: 1.1923 - val_loss: 5.9964 - val_mse: 3.3829
Epoch 1855/3000
6/6 - 0s - loss: 1.8053 - mse: 1.1918 - val_loss: 5.9965 - val_mse: 3.3831
Epoch 1856/3000
6/6 - 0s - loss: 1.8046 - mse: 1.1912 - val_loss: 5.9965 - val_mse: 3.3832
Epoch 1857/3000
6/6 - 0s - loss: 1.8040 - mse: 1.1908 - val_loss: 5.9964 - val_mse: 3.3833
Epoch 1858/3000
6/6 - 0s - loss: 1.8034 - mse: 1.1903 - val_loss: 5.9963 - val_mse: 3.3834
Epoch 1859/3000
6/6 - 0s - loss: 1.8028 - mse: 1.1898 - val_loss: 5.9964 - val_mse: 3.3835
Epoch 1860/3000
6/6 - 0s - loss: 1.8021 - mse: 1.1893 - val_loss: 5.9964 - val_mse: 3.3836
Epoch 1861/3000
6/6 - 0s - loss: 1.8015 - mse: 1.1888 - val_loss: 5.9965 - val_mse: 3.3838
Epoch 1862/3000
6/6 - 0s - loss: 1.8009 - mse: 1.1883 - val_loss: 5.9964 - val_mse: 3.3839
Epoch 1863/3000
6/6 - 0s - loss: 1.8003 - mse: 1.1878 - val_loss: 5.9966 - val_mse: 3.3842
Epoch 1864/3000
6/6 - 0s - loss: 1.7997 - mse: 1.1874 - val_loss: 5.9963 - val_mse: 3.3840
Epoch 1865/3000
6/6 - 0s - loss: 1.7990 - mse: 1.1867 - val_loss: 5.9963 - val_mse: 3.3842
Epoch 1866/3000
6/6 - 0s - loss: 1.7984 - mse: 1.1862 - val_loss: 5.9964 - val_mse: 3.3844
Epoch 1867/3000
6/6 - 0s - loss: 1.7977 - mse: 1.1857 - val_loss: 5.9963 - val_mse: 3.3844
Epoch 1868/3000
6/6 - 0s - loss: 1.7971 - mse: 1.1852 - val_loss: 5.9962 - val_mse: 3.3844
Epoch 1869/3000
6/6 - 0s - loss: 1.7964 - mse: 1.1846 - val_loss: 5.9963 - val_mse: 3.3846
Epoch 1870/3000
6/6 - 0s - loss: 1.7957 - mse: 1.1841 - val_loss: 5.9962 - val_mse: 3.3847
Epoch 1871/3000
6/6 - 0s - loss: 1.7952 - mse: 1.1837 - val_loss: 5.9963 - val_mse: 3.3848
Epoch 1872/3000
6/6 - 0s - loss: 1.7946 - mse: 1.1832 - val_loss: 5.9961 - val_mse: 3.3848
Epoch 1873/3000
6/6 - 0s - loss: 1.7940 - mse: 1.1827 - val_loss: 5.9961 - val_mse: 3.3849
Epoch 1874/3000
6/6 - 0s - loss: 1.7933 - mse: 1.1821 - val_loss: 5.9962 - val_mse: 3.3851
Epoch 1875/3000
6/6 - 0s - loss: 1.7926 - mse: 1.1816 - val_loss: 5.9960 - val_mse: 3.3851
Epoch 1876/3000
6/6 - 0s - loss: 1.7920 - mse: 1.1811 - val_loss: 5.9961 - val_mse: 3.3853
Epoch 1877/3000
6/6 - 0s - loss: 1.7914 - mse: 1.1806 - val_loss: 5.9962 - val_mse: 3.3855
Epoch 1878/3000
6/6 - 0s - loss: 1.7908 - mse: 1.1801 - val_loss: 5.9960 - val_mse: 3.3854
Epoch 1879/3000
6/6 - 0s - loss: 1.7901 - mse: 1.1796 - val_loss: 5.9958 - val_mse: 3.3853
Epoch 1880/3000
6/6 - 0s - loss: 1.7895 - mse: 1.1791 - val_loss: 5.9957 - val_mse: 3.3854
Epoch 1881/3000
6/6 - 0s - loss: 1.7889 - mse: 1.1787 - val_loss: 5.9959 - val_mse: 3.3857
Epoch 1882/3000
6/6 - 0s - loss: 1.7883 - mse: 1.1782 - val_loss: 5.9957 - val_mse: 3.3856
Epoch 1883/3000
6/6 - 0s - loss: 1.7876 - mse: 1.1776 - val_loss: 5.9957 - val_mse: 3.3857
Epoch 1884/3000
6/6 - 0s - loss: 1.7870 - mse: 1.1771 - val_loss: 5.9956 - val_mse: 3.3857
Epoch 1885/3000
6/6 - 0s - loss: 1.7864 - mse: 1.1766 - val_loss: 5.9956 - val_mse: 3.3858
Epoch 1886/3000
6/6 - 0s - loss: 1.7858 - mse: 1.1761 - val_loss: 5.9955 - val_mse: 3.3859
Epoch 1887/3000
6/6 - 0s - loss: 1.7852 - mse: 1.1756 - val_loss: 5.9955 - val_mse: 3.3860
Epoch 1888/3000
6/6 - 0s - loss: 1.7845 - mse: 1.1750 - val_loss: 5.9954 - val_mse: 3.3860
Epoch 1889/3000
6/6 - 0s - loss: 1.7839 - mse: 1.1745 - val_loss: 5.9954 - val_mse: 3.3861
Epoch 1890/3000
6/6 - 0s - loss: 1.7833 - mse: 1.1740 - val_loss: 5.9954 - val_mse: 3.3862
Epoch 1891/3000
6/6 - 0s - loss: 1.7826 - mse: 1.1734 - val_loss: 5.9953 - val_mse: 3.3863
Epoch 1892/3000
6/6 - 0s - loss: 1.7819 - mse: 1.1729 - val_loss: 5.9953 - val_mse: 3.3866
Epoch 1893/3000
6/6 - 0s - loss: 1.7814 - mse: 1.1725 - val_loss: 5.9953 - val_mse: 3.3867
Epoch 1894/3000
6/6 - 0s - loss: 1.7807 - mse: 1.1719 - val_loss: 5.9954 - val_mse: 3.3867
Epoch 1895/3000
6/6 - 0s - loss: 1.7801 - mse: 1.1713 - val_loss: 5.9953 - val_mse: 3.3867
Epoch 1896/3000
6/6 - 0s - loss: 1.7795 - mse: 1.1709 - val_loss: 5.9954 - val_mse: 3.3869
Epoch 1897/3000
6/6 - 0s - loss: 1.7788 - mse: 1.1704 - val_loss: 5.9953 - val_mse: 3.3870
Epoch 1898/3000
6/6 - 0s - loss: 1.7782 - mse: 1.1698 - val_loss: 5.9953 - val_mse: 3.3870
Epoch 1899/3000
6/6 - 0s - loss: 1.7775 - mse: 1.1693 - val_loss: 5.9954 - val_mse: 3.3873
Epoch 1900/3000
6/6 - 0s - loss: 1.7769 - mse: 1.1689 - val_loss: 5.9954 - val_mse: 3.3874
Epoch 1901/3000
6/6 - 0s - loss: 1.7763 - mse: 1.1684 - val_loss: 5.9954 - val_mse: 3.3875
Epoch 1902/3000
6/6 - 0s - loss: 1.7757 - mse: 1.1679 - val_loss: 5.9955 - val_mse: 3.3878
Epoch 1903/3000
6/6 - 0s - loss: 1.7750 - mse: 1.1673 - val_loss: 5.9956 - val_mse: 3.3879
Epoch 1904/3000
6/6 - 0s - loss: 1.7744 - mse: 1.1668 - val_loss: 5.9955 - val_mse: 3.3881
Epoch 1905/3000
6/6 - 0s - loss: 1.7738 - mse: 1.1663 - val_loss: 5.9954 - val_mse: 3.3881
Epoch 1906/3000
6/6 - 0s - loss: 1.7732 - mse: 1.1658 - val_loss: 5.9953 - val_mse: 3.3880
Epoch 1907/3000
6/6 - 0s - loss: 1.7725 - mse: 1.1652 - val_loss: 5.9952 - val_mse: 3.3881
Epoch 1908/3000
6/6 - 0s - loss: 1.7718 - mse: 1.1647 - val_loss: 5.9953 - val_mse: 3.3883
Epoch 1909/3000
6/6 - 0s - loss: 1.7713 - mse: 1.1643 - val_loss: 5.9951 - val_mse: 3.3882
Epoch 1910/3000
6/6 - 0s - loss: 1.7706 - mse: 1.1637 - val_loss: 5.9951 - val_mse: 3.3883
Epoch 1911/3000
6/6 - 0s - loss: 1.7700 - mse: 1.1632 - val_loss: 5.9948 - val_mse: 3.3881
Epoch 1912/3000
6/6 - 0s - loss: 1.7694 - mse: 1.1627 - val_loss: 5.9947 - val_mse: 3.3881
Epoch 1913/3000
6/6 - 0s - loss: 1.7689 - mse: 1.1623 - val_loss: 5.9946 - val_mse: 3.3881
Epoch 1914/3000
6/6 - 0s - loss: 1.7682 - mse: 1.1617 - val_loss: 5.9945 - val_mse: 3.3881
Epoch 1915/3000
6/6 - 0s - loss: 1.7675 - mse: 1.1612 - val_loss: 5.9945 - val_mse: 3.3882
Epoch 1916/3000
6/6 - 0s - loss: 1.7670 - mse: 1.1607 - val_loss: 5.9945 - val_mse: 3.3885
Epoch 1917/3000
6/6 - 0s - loss: 1.7662 - mse: 1.1601 - val_loss: 5.9947 - val_mse: 3.3887
Epoch 1918/3000
6/6 - 0s - loss: 1.7656 - mse: 1.1596 - val_loss: 5.9947 - val_mse: 3.3887
Epoch 1919/3000
6/6 - 0s - loss: 1.7650 - mse: 1.1591 - val_loss: 5.9947 - val_mse: 3.3888
Epoch 1920/3000
6/6 - 0s - loss: 1.7645 - mse: 1.1588 - val_loss: 5.9948 - val_mse: 3.3891
Epoch 1921/3000
6/6 - 0s - loss: 1.7638 - mse: 1.1581 - val_loss: 5.9946 - val_mse: 3.3890
Epoch 1922/3000
6/6 - 0s - loss: 1.7632 - mse: 1.1577 - val_loss: 5.9947 - val_mse: 3.3893
Epoch 1923/3000
6/6 - 0s - loss: 1.7625 - mse: 1.1571 - val_loss: 5.9945 - val_mse: 3.3891
Epoch 1924/3000
6/6 - 0s - loss: 1.7619 - mse: 1.1566 - val_loss: 5.9943 - val_mse: 3.3891
Epoch 1925/3000
6/6 - 0s - loss: 1.7613 - mse: 1.1561 - val_loss: 5.9944 - val_mse: 3.3892
Epoch 1926/3000
6/6 - 0s - loss: 1.7607 - mse: 1.1556 - val_loss: 5.9943 - val_mse: 3.3893
Epoch 1927/3000
6/6 - 0s - loss: 1.7601 - mse: 1.1551 - val_loss: 5.9942 - val_mse: 3.3893
Epoch 1928/3000
6/6 - 0s - loss: 1.7595 - mse: 1.1546 - val_loss: 5.9943 - val_mse: 3.3895
Epoch 1929/3000
6/6 - 0s - loss: 1.7589 - mse: 1.1541 - val_loss: 5.9942 - val_mse: 3.3895
Epoch 1930/3000
6/6 - 0s - loss: 1.7582 - mse: 1.1536 - val_loss: 5.9943 - val_mse: 3.3898
Epoch 1931/3000
6/6 - 0s - loss: 1.7576 - mse: 1.1531 - val_loss: 5.9943 - val_mse: 3.3899
Epoch 1932/3000
6/6 - 0s - loss: 1.7571 - mse: 1.1527 - val_loss: 5.9941 - val_mse: 3.3898
Epoch 1933/3000
6/6 - 0s - loss: 1.7565 - mse: 1.1522 - val_loss: 5.9941 - val_mse: 3.3901
Epoch 1934/3000
6/6 - 0s - loss: 1.7557 - mse: 1.1516 - val_loss: 5.9943 - val_mse: 3.3902
Epoch 1935/3000
6/6 - 0s - loss: 1.7552 - mse: 1.1511 - val_loss: 5.9940 - val_mse: 3.3901
Epoch 1936/3000
6/6 - 0s - loss: 1.7545 - mse: 1.1506 - val_loss: 5.9940 - val_mse: 3.3902
Epoch 1937/3000
6/6 - 0s - loss: 1.7539 - mse: 1.1501 - val_loss: 5.9941 - val_mse: 3.3904
Epoch 1938/3000
6/6 - 0s - loss: 1.7533 - mse: 1.1497 - val_loss: 5.9941 - val_mse: 3.3904
Epoch 1939/3000
6/6 - 0s - loss: 1.7526 - mse: 1.1490 - val_loss: 5.9940 - val_mse: 3.3905
Epoch 1940/3000
6/6 - 0s - loss: 1.7524 - mse: 1.1489 - val_loss: 5.9938 - val_mse: 3.3903
Epoch 1941/3000
6/6 - 0s - loss: 1.7514 - mse: 1.1480 - val_loss: 5.9939 - val_mse: 3.3906
Epoch 1942/3000
6/6 - 0s - loss: 1.7508 - mse: 1.1475 - val_loss: 5.9939 - val_mse: 3.3908
Epoch 1943/3000
6/6 - 0s - loss: 1.7503 - mse: 1.1471 - val_loss: 5.9941 - val_mse: 3.3911
Epoch 1944/3000
6/6 - 0s - loss: 1.7496 - mse: 1.1466 - val_loss: 5.9940 - val_mse: 3.3912
Epoch 1945/3000
6/6 - 0s - loss: 1.7489 - mse: 1.1460 - val_loss: 5.9941 - val_mse: 3.3913
Epoch 1946/3000
6/6 - 0s - loss: 1.7483 - mse: 1.1455 - val_loss: 5.9940 - val_mse: 3.3913
Epoch 1947/3000
6/6 - 0s - loss: 1.7476 - mse: 1.1449 - val_loss: 5.9938 - val_mse: 3.3912
Epoch 1948/3000
6/6 - 0s - loss: 1.7471 - mse: 1.1446 - val_loss: 5.9939 - val_mse: 3.3914
Epoch 1949/3000
6/6 - 0s - loss: 1.7464 - mse: 1.1440 - val_loss: 5.9939 - val_mse: 3.3914
Epoch 1950/3000
6/6 - 0s - loss: 1.7460 - mse: 1.1436 - val_loss: 5.9939 - val_mse: 3.3916
Epoch 1951/3000
6/6 - 0s - loss: 1.7452 - mse: 1.1430 - val_loss: 5.9937 - val_mse: 3.3915
Epoch 1952/3000
6/6 - 0s - loss: 1.7446 - mse: 1.1424 - val_loss: 5.9938 - val_mse: 3.3917
Epoch 1953/3000
6/6 - 0s - loss: 1.7440 - mse: 1.1420 - val_loss: 5.9938 - val_mse: 3.3919
Epoch 1954/3000
6/6 - 0s - loss: 1.7434 - mse: 1.1414 - val_loss: 5.9938 - val_mse: 3.3919
Epoch 1955/3000
6/6 - 0s - loss: 1.7428 - mse: 1.1410 - val_loss: 5.9936 - val_mse: 3.3920
Epoch 1956/3000
6/6 - 0s - loss: 1.7421 - mse: 1.1404 - val_loss: 5.9936 - val_mse: 3.3920
Epoch 1957/3000
6/6 - 0s - loss: 1.7415 - mse: 1.1399 - val_loss: 5.9938 - val_mse: 3.3923
Epoch 1958/3000
6/6 - 0s - loss: 1.7409 - mse: 1.1394 - val_loss: 5.9937 - val_mse: 3.3923
Epoch 1959/3000
6/6 - 0s - loss: 1.7403 - mse: 1.1389 - val_loss: 5.9938 - val_mse: 3.3925
Epoch 1960/3000
6/6 - 0s - loss: 1.7397 - mse: 1.1384 - val_loss: 5.9935 - val_mse: 3.3923
Epoch 1961/3000
6/6 - 0s - loss: 1.7390 - mse: 1.1378 - val_loss: 5.9935 - val_mse: 3.3925
Epoch 1962/3000
6/6 - 0s - loss: 1.7384 - mse: 1.1374 - val_loss: 5.9937 - val_mse: 3.3927
Epoch 1963/3000
6/6 - 0s - loss: 1.7378 - mse: 1.1370 - val_loss: 5.9937 - val_mse: 3.3928
Epoch 1964/3000
6/6 - 0s - loss: 1.7372 - mse: 1.1364 - val_loss: 5.9938 - val_mse: 3.3930
Epoch 1965/3000
6/6 - 0s - loss: 1.7366 - mse: 1.1359 - val_loss: 5.9936 - val_mse: 3.3930
Epoch 1966/3000
6/6 - 0s - loss: 1.7359 - mse: 1.1354 - val_loss: 5.9936 - val_mse: 3.3931
Epoch 1967/3000
6/6 - 0s - loss: 1.7353 - mse: 1.1348 - val_loss: 5.9935 - val_mse: 3.3930
Epoch 1968/3000
6/6 - 0s - loss: 1.7347 - mse: 1.1344 - val_loss: 5.9935 - val_mse: 3.3932
Epoch 1969/3000
6/6 - 0s - loss: 1.7342 - mse: 1.1340 - val_loss: 5.9935 - val_mse: 3.3933
Epoch 1970/3000
6/6 - 0s - loss: 1.7336 - mse: 1.1334 - val_loss: 5.9934 - val_mse: 3.3933
Epoch 1971/3000
6/6 - 0s - loss: 1.7330 - mse: 1.1329 - val_loss: 5.9934 - val_mse: 3.3934
Epoch 1972/3000
6/6 - 0s - loss: 1.7324 - mse: 1.1325 - val_loss: 5.9934 - val_mse: 3.3937
Epoch 1973/3000
6/6 - 0s - loss: 1.7317 - mse: 1.1319 - val_loss: 5.9934 - val_mse: 3.3937
Epoch 1974/3000
6/6 - 0s - loss: 1.7311 - mse: 1.1314 - val_loss: 5.9934 - val_mse: 3.3938
Epoch 1975/3000
6/6 - 0s - loss: 1.7307 - mse: 1.1311 - val_loss: 5.9935 - val_mse: 3.3939
Epoch 1976/3000
6/6 - 0s - loss: 1.7299 - mse: 1.1304 - val_loss: 5.9935 - val_mse: 3.3941
Epoch 1977/3000
6/6 - 0s - loss: 1.7293 - mse: 1.1300 - val_loss: 5.9934 - val_mse: 3.3942
Epoch 1978/3000
6/6 - 0s - loss: 1.7287 - mse: 1.1295 - val_loss: 5.9932 - val_mse: 3.3940
Epoch 1979/3000
6/6 - 0s - loss: 1.7280 - mse: 1.1290 - val_loss: 5.9932 - val_mse: 3.3942
Epoch 1980/3000
6/6 - 0s - loss: 1.7274 - mse: 1.1284 - val_loss: 5.9934 - val_mse: 3.3944
Epoch 1981/3000
6/6 - 0s - loss: 1.7268 - mse: 1.1279 - val_loss: 5.9935 - val_mse: 3.3946
Epoch 1982/3000
6/6 - 0s - loss: 1.7262 - mse: 1.1274 - val_loss: 5.9934 - val_mse: 3.3947
Epoch 1983/3000
6/6 - 0s - loss: 1.7256 - mse: 1.1269 - val_loss: 5.9933 - val_mse: 3.3946
Epoch 1984/3000
6/6 - 0s - loss: 1.7250 - mse: 1.1264 - val_loss: 5.9933 - val_mse: 3.3948
Epoch 1985/3000
6/6 - 0s - loss: 1.7243 - mse: 1.1258 - val_loss: 5.9933 - val_mse: 3.3949
Epoch 1986/3000
6/6 - 0s - loss: 1.7237 - mse: 1.1253 - val_loss: 5.9932 - val_mse: 3.3949
Epoch 1987/3000
6/6 - 0s - loss: 1.7231 - mse: 1.1248 - val_loss: 5.9931 - val_mse: 3.3949
Epoch 1988/3000
6/6 - 0s - loss: 1.7225 - mse: 1.1244 - val_loss: 5.9931 - val_mse: 3.3950
Epoch 1989/3000
6/6 - 0s - loss: 1.7219 - mse: 1.1239 - val_loss: 5.9930 - val_mse: 3.3950
Epoch 1990/3000
6/6 - 0s - loss: 1.7213 - mse: 1.1234 - val_loss: 5.9930 - val_mse: 3.3951
Epoch 1991/3000
6/6 - 0s - loss: 1.7208 - mse: 1.1229 - val_loss: 5.9931 - val_mse: 3.3953
Epoch 1992/3000
6/6 - 0s - loss: 1.7200 - mse: 1.1223 - val_loss: 5.9931 - val_mse: 3.3954
Epoch 1993/3000
6/6 - 0s - loss: 1.7195 - mse: 1.1218 - val_loss: 5.9930 - val_mse: 3.3955
Epoch 1994/3000
6/6 - 0s - loss: 1.7188 - mse: 1.1213 - val_loss: 5.9931 - val_mse: 3.3957
Epoch 1995/3000
6/6 - 0s - loss: 1.7181 - mse: 1.1207 - val_loss: 5.9931 - val_mse: 3.3958
Epoch 1996/3000
6/6 - 0s - loss: 1.7175 - mse: 1.1202 - val_loss: 5.9930 - val_mse: 3.3957
Epoch 1997/3000
6/6 - 0s - loss: 1.7169 - mse: 1.1197 - val_loss: 5.9929 - val_mse: 3.3958
Epoch 1998/3000
6/6 - 0s - loss: 1.7163 - mse: 1.1193 - val_loss: 5.9929 - val_mse: 3.3958
Epoch 1999/3000
6/6 - 0s - loss: 1.7157 - mse: 1.1187 - val_loss: 5.9926 - val_mse: 3.3957
Epoch 2000/3000
6/6 - 0s - loss: 1.7150 - mse: 1.1182 - val_loss: 5.9927 - val_mse: 3.3959
Epoch 2001/3000
6/6 - 0s - loss: 1.7145 - mse: 1.1177 - val_loss: 5.9928 - val_mse: 3.3960
Epoch 2002/3000
6/6 - 0s - loss: 1.7139 - mse: 1.1172 - val_loss: 5.9927 - val_mse: 3.3961
Epoch 2003/3000
6/6 - 0s - loss: 1.7132 - mse: 1.1166 - val_loss: 5.9927 - val_mse: 3.3961
```

5.085485458374023,
5.080501556396484,
5.07429838180542,
5.068936347961426,
5.0628743171691895,
5.056952953338623,
5.051377296447754,
5.0459980964660645,
5.0408220291137695,
5.034608840942383,
5.029242038726807,
5.023869514465332,
5.017758369445801,
5.012596607208252,
5.006845474243164,
5.001392364501953,
4.995606899261475,
4.990081787109375,
4.984063625335693,
4.978524684906006,
4.973730564117432,
4.968050956726074,
4.962103843688965,
4.956826686859131,
4.951478481292725,
4.9455718994140625,
4.940605640411377,
4.935210704803467,
4.929703712463379,
4.924526214599609,
4.918194770812988,
4.913447380065918,
4.90756893157959,
4.902594089508057,
4.897117614746094,
4.8916096687316895,
4.886103630065918,
4.881615161895752,
4.875499725341797,
4.870142459869385,
4.865034103393555,
4.8596038818359375,
4.854588985443115,
4.848982334136963,
4.8446431159973145,
4.838754177093506,
4.833189010620117,
4.828309535980225,
4.823095321655273,
4.8177995681762695,
4.812569618225098,
4.807396411895752,
4.802473545074463,
4.796802520751953,
4.792041778564453,
4.786295413970947,
4.781154632568359,
4.776299953460693,
4.770847320556641,
4.7656450271606445,
4.760436534881592,
4.755594253540039,
4.750845432281494,
4.744953155517578,
4.739653587341309,
4.734827995300293,
4.729306221008301,
4.724298000335693,
4.719478130340576,
4.714594841003418,
4.709012985229492,
4.703936576843262,
4.698855400085449,
4.693528175354004,
4.689053535461426,
4.683549404144287,
4.679500579833984,
4.6740827560424805,
4.66870641708374,
4.66382360458374,
4.659240245819092,
4.653895854949951,
4.64921236038208,
4.643815040588379,
4.638850688934326,
4.634209156036377,
4.6295976638793945,
4.624568939208984,
4.619297027587891,
4.614076614379883,
4.609702110290527,
4.604440212249756,
4.599576473236084,
4.59503173828125,
4.590088844299316,
4.5849785804748535,
4.5801682472229,
4.57502555847168,
4.5706915855407715,
4.5651021003723145,
4.560231685638428,
4.555715560913086,
4.551059246063232,
4.546177864074707,
4.541454315185547,
4.536615371704102,
4.531477928161621,
4.526415824890137,
4.521914482116699,
4.517041206359863,
4.512327194213867,
4.507542610168457,
4.502854824066162,
4.497920513153076,
4.492885589599609,
4.4879560470581055,
4.483555316925049,
4.479043960571289,
4.47381067276001,
4.469493865966797,
4.464276313781738,
4.45974588394165,
4.454799175262451,
4.4502129554748535,
4.4453535079956055,
4.440824508666992,
4.43644380569458,
4.431350231170654,
4.426951885223389,
4.422060966491699,
4.417514801025391,
4.412838935852051,
4.408143997192383,
4.4037299156188965,
4.399299621582031,
4.394757270812988,
4.390069007873535,
4.3847455978393555,
4.380569934844971,
4.376269817352295,
4.371396541595459,
4.367501258850098,
4.362313747406006,
4.357631683349609,
4.353443622589111,
4.34895658493042,
4.344031810760498,
4.339515209197998,
4.3355255126953125,
4.330667018890381,
4.326378345489502,
4.321848392486572,
4.316934108734131,
4.312869071960449,
4.308094501495361,
4.30359411239624,
4.299521446228027,
4.294564723968506,
4.29059362411499,
4.286172866821289,
4.281515598297119,
4.277308464050293,
4.273135185241699,
4.268786907196045,
4.264222621917725,
4.259637355804443,
4.255279064178467,
4.251177787780762,
4.246678829193115,
4.2425079345703125,
4.237980365753174,
4.233992099761963,
4.228882789611816,
4.225036144256592,
4.220850467681885,
4.216490745544434,
4.2124738693237305,
4.207318305969238,
4.203248500823975,
4.199342250823975,
4.194705486297607,
4.19046688079834,
[illegible]
3.2665762901306152,
3.2638611793518066,
3.260725498199463,
3.2578330039978027,
3.2552268505096436,
3.251774311065674,
3.2486400604248047,
3.245774269104004,
3.2427520751953125,
3.2401885986328125,
3.23675799369812,
3.2340340614318848,
3.2308852672576904,
3.2279815673828125,
3.2252390384674072,
3.222240924835205,
3.219148635864258,
3.2163100242614746,
3.2132413387298584,
3.2103989124298096,
3.207476854324341,
3.204537868499756,
3.201605796813965,
3.1988983154296875,
3.195974349975586,
3.1927216053009033,
3.1901023387908936,
3.1871585845947266,
3.184153079986572,
3.1813597679138184,
3.178483724594116,
3.17586088180542,
3.1730082035064697,
3.1699609756469727,
3.167163372039795,
3.164091110229492,
3.1614074707031250,
3.1585500240325928,
3.155855178833008,
3.153067111968994,
3.1498327255249023,
3.147073268890381,
3.1445517539978027,
3.1412627696990967,
3.13877010345459,
3.1356759071350098,
3.1329517364501953,
3.1302378177642822,
3.127274513244629,
3.124276876449585,
3.1219253540039062,
3.119025230407715,
3.116009473800659,
3.113363742828369,
3.1106739044189453,
3.1077795028686523,
3.105266809463501,
3.1022510528564453,
3.099627733230591,
3.0973808765411377,
3.094254970550537,
3.0916860103607178,
3.08880877494812,
3.08611798286438,
3.0833098888397217,
3.0807011127471924,
3.0781662464141846,
3.0753188133239746,
3.07281494140625,
3.069777011871338,
3.0672106742858887,
3.0643630027770996,
3.062211036682129,
3.059490919113159,
3.0564322471618652,
3.053828477859497,
3.0515542030334473,
3.048774480819702,
3.0460145473480225,
3.0438072681427,
3.0408284664154053,
3.0380921363830566,
3.035546064376831,
3.033104658126831,
3.0303587913513184,
3.0276854038238525,
3.025381326675415,
3.02250075340271,
3.0201828479766846,
3.0175230503082275,
3.0149307250976562,
3.0124471187591553,
3.009852647781372,
3.0074784755706787,
3.0047686100006104,
3.0023021697998047,
2.9998319149017334,
2.996999979019165,
2.9945075511932373,
2.9920477867126465,
2.9892418384552,
2.9868271350860596,
2.9843218326568604,
2.9817512035369873,
2.9792373180389404,
2.976733922958374,
2.9744248390197754,
2.9716796875,
2.9695022106170654,
2.9668428897857666,
2.964608907699585,
2.9619977474212646,
2.959737777709961,
2.9572229385375977,
2.9547629356384277,
2.9527342319488525,
2.949739933013916,
2.9477181434631348,
2.9454803466796875,
2.9426803588867188,
2.9403023719787598,
2.937962770462036,
2.935579776763916,
2.933281898498535,
2.9310667514801025,
2.9285221099853516,
2.9260752201080322,
2.9238181114196777,
2.92161226272583,
2.919088840484619,
2.9167520999908447,
2.9142322540283203,
2.9121060371398926,
2.9097461700439453,
2.9072442054748535,
2.9049887657165527,
2.9026496410369873,
2.9004039764404297,
2.897932529449463,
2.8958072662353516,
2.893336534500122,
2.8910861015319824,
2.8885464668273926,
2.8863472938537598,
2.8842720985412598,
2.88185453414917,
2.8796160221099854,
2.8773016929626465,
2.8752176761627197,
2.8734116554260254,
2.8705947399139404,
2.8684558868408203,
2.866395950317383,
2.864495038986206,
2.8619790077209473,
2.8597800731658936,
2.858025550842285,
2.855381727218628,
2.853774070739746,
2.8510477542877197,
2.849316358566284,
2.8468017578125,
2.844680070877075,
2.842456102371216,
2.8404440879821777,
2.838385820388794,
2.8361661434173584,
2.8340299129486084,
2.832050085067749,
2.8297460079193115,
2.8276851177215576,
2.8256208896636963,
2.8237268924713135,
2.821366786956787,
2.819457769393921,
2.81718111038208,
2.8151018619537354,
2.813122272491455,
2.8109757900238037,
2.80867075920105,
2.806631326675415,
2.804706335067749,
2.8026883602142334,
2.800506591796875,
2.7983596324920654,
2.7964882850646973,
2.794645309448242,
2.7923192977905273,
2.790468692779541,
2.7882187366485596,
2.786369562149048,
2.7843353748321533,
2.78244686126709,
2.7803351879119873,
2.77866530418396,
2.7765121459960938,
2.7748963832855225,
2.772777795791626,
2.7708451747894287,
2.7690532207489014,
2.766979694366455,
2.7649991512298584,
2.7633073329925537,
2.7611277103424072,
2.7592756748199463,
2.7574303150177,
2.7557413578033447,
2.7535598278045654,
2.751857042312622,
2.7497854232788086,
2.7478911876678467,
2.7461884021759033,
2.7439730167388916,
2.7421064376831055,
2.7400929927825928,
2.7384934425354004,
2.7364063262939453,
2.7344934940338135,
2.732820987701416,
2.730771541595459,
2.729113817214966,
2.7270565032958984,
2.7253339290618896,
2.7235071659088135,
2.721637010574341,
2.7199482917785645,
2.7179558277130127,
2.7161056995391846,
2.714527130126953,
2.712520122528076,
2.710836410522461,
2.708970069885254,
2.707165241241455,
2.705601930618286,
2.7035489082336426,
2.7018966674804688,
2.70023512840271,
2.6983258724212646,
2.6967227458953857,
2.6949822902679443,
2.693026065826416,
2.691319227218628,
2.6894524097442627,
2.6876461505889893,
2.686295509338379,
2.6842453479766846,
2.682363510131836,
2.680718183517456,
2.6789329051971436,
2.6771814823150635,
2.675544500350952,
2.6737236976623535,
2.672018051147461,
2.670212745666504,
2.6684842109680176,
2.666987895965576,
2.6652841567993164,
2.663550615310669,
2.6620497703552246,
2.6602439880371094,
2.6585583686828613,
2.6570262908935547,
2.6553397178649902,
2.6540770530700684,
2.6520349979400635,
2.6506035327911377,
2.6488888263702393,
2.647224187850952,
2.6455795764923096,
2.6439473628997803,
2.6422924995422363,
2.640878677368164,
2.6391148567199707,
2.6373963356018066,
2.6358673572540283,
2.6342949867248535,
2.632598638534546,
2.6309614181518555,
2.629593849182129,
2.627911329269409,
2.6264402866363525,
2.6246702671051025,
2.6232950687408447,
2.6216580867767334,
2.620253562927246,
2.618536949157715,
2.616997003555298,
2.615450859069824,
2.6138668060302734,
2.6123006343841553,
2.610882043838501,
2.609422206878662,
2.6077864170074463,
2.606154203414917,
2.604767084121704,
2.6033096313476562,
2.6019179821014404,
2.600149154663086,
2.5988526344299316,
2.597156047821045,
2.5959606170654297,
2.594233989715576,
2.592655658721924,
2.591115951538086,
2.589566707611084,
2.5880606174468994,
2.5868217945098877,
2.5850303173065186,
2.5838043689727783,
2.582446336746216,
2.5807390213012695,
2.5792441368103027,
2.5778236389160156,
2.5762991905212402,
2.574889898300171,
2.5734970569610596,
2.5718564987182617,
2.570483922958374,
2.5688865184783936,
2.567532777786255,
2.5660715103149414,
2.5646872520446777,
2.5631906986236572,
2.5618174076080322,
2.5604116916656494,
2.5589654445648193,
2.557600498199463,
2.5561439990997314,
2.5547995567321777,
2.553337812423706,
2.5521254539489746,
2.5505640506744385,
2.549225091934204,
2.5477993488311768,
2.54663348197937,
2.545283079147339,
2.5436978340148926,
2.542388439178467,
2.541003704071045,
2.5395750999450684,
2.5381834506988525,
2.5368900299072266,
2.535520553588867,
2.534186840057373,
2.532837152481079,
2.531311511993408,
2.5300395488739014,
2.528594493865967,
2.527243137359619,
2.5261270999908447,
2.524873971939087,
2.523500919342041,
2.522181749343872,
2.5207974910736084,
2.5195531845092773,
2.518220901489258,
2.517258882522583,
2.515562057495117,
2.5143842697143555,
2.5131943225860596,
2.5118308067321777,
2.5105996131896973,
2.5093834400177,
2.507917881011963,
2.506692409515381,
2.50565505027771,
2.5041136741638184,
2.5031375885009766,
2.5016181468963623,
2.5002150535583496,
2.4990615844726562,
2.4978063106536865,
2.4964816570281982,
2.4952919483184814,
2.4939959049224854,
2.492729425430298,
2.4914844036102295,
2.4903316497802734,
2.4889779090881348,
2.4877610206604004,
2.48660945892334,
2.4853832721710205,
2.4841084480285645,
2.4829323291778564,
2.481680154800415,
2.48056960105896,
2.479051351547241,
2.4782462120056152,
2.4766533374786377,
2.4754393100738525,
2.4742517471313477,
2.4732367992401123,
2.471817970275879,
2.4708242416381836,
...],
'mse': [5.212001800537109,
5.20367956161499,
5.195415019989014,
5.188439846038818,
5.179749488830566,
5.172168254852295,
5.1638264656066895,
5.156318187713623,
5.14877986907959,
5.140800952911377,
5.132480621337891,
5.125121593475342,
5.11789083480835,
5.109602451324463,
5.102114200592041,
5.094180107116699,
5.0869035720825195,
5.079061031341553,
5.071361064910889,
5.063751697540283,
5.056176662445068,
5.049314022064209,
5.041476249694824,
5.034024238586426,
5.026761054992676,
5.0192060470581055,
5.012230396270752,
5.0047197341918945,
4.9976091384887695,
4.990222930908203,
4.98293924331665,
4.975701808929443,
4.968725204467773,
4.961678981781006,
4.9546732902526855,
4.947073459625244,
4.940443515777588,
4.9333391189575195,
4.9260454177856445,
4.919254302978516,
4.912327766418457,
4.905124664306641,
4.898292541503906,
4.891188144683838,
4.8847975730896,
4.877277851104736,
4.870575428009033,
4.86380672454834,
4.856407642364502,
4.850533962249756,
4.843302249908447,
4.83645486831665,
4.82952356338501,
4.822791576385498,
4.816510200500488,
4.809401035308838,
4.802860260009766,
4.7958784103393555,
4.789651393890381,
4.782705783843994,
4.7760515213012695,
4.769702434539795,
4.763223171234131,
4.75604248046875,
4.750010013580322,
4.743453502655029,
4.737125396728516,
4.730659008026123,
4.723851203918457,
4.7177734375,
4.711178302764893,
4.704461574554443,
4.6981611251831055,
4.692075252532959,
4.68563175201416,
4.6793599128723145,
4.673266410827637,
4.666952610015869,
4.660454273223877,
4.654808044433594,
4.648200988769531,
4.6420416831970215,
4.635585784912109,
4.629509925842285,
4.623518466949463,
4.616976261138916,
4.610854625701904,
4.605074882507324,
4.598456859588623,
4.592462062835693,
4.586208820343018,
4.58018684387207,
4.573935508728027,
4.567965507507324,
4.561985969543457,
4.5558977127075195,
4.549722194671631,
4.543351650238037,
4.537525177001953,
4.531704425811768,
4.525380611419678,
4.519338130950928,
4.513610363006592,
4.50719690322876,
4.50126838684082,
4.495423793792725,
4.489375114440918,
4.483158111572266,
4.4774489402771,
4.471591949462891,
4.465512752532959,
4.459611415863037,
4.453193187713623,
4.447508335113525,
4.4412455558776855,
4.435818672180176,
4.429747104644775,
4.423722743988037,
4.417943954467773,
4.4119133949279785,
4.406023979187012,
4.399883270263672,
4.394439697265625,
4.388282299041748,
4.382457733154297,
4.377208709716797,
4.371098518371582,
4.365222930908203,

```
[illegible]
4.110110759735107,
4.10437536239624,
4.098785877227783,
4.093541622161865,
4.088489532470703,
4.083630561828613,
4.077737331390381,
4.072696208953857,
4.067647457122803,
4.0618577003479,
4.0570173263549805,
4.051587104797363,
4.04645299911499,
4.040989875793457,
4.0357866287231445,
4.030095100402832,
4.024886608123779,
4.020413398742676,
4.015050888061523,
4.009425163269043,
4.004472255706787,
3.999445676803589,
3.993865966796875,
3.9892258644104004,
3.984149217605591,
3.9789633750915527,
3.9741051197052,
3.96809983253479,
3.9636762142181396,
3.9581212997436523,
3.9534707069396973,
3.9483158588409424,
3.943129539489746,
3.93794584274292,
3.9337735176086426,
3.9279770851135254,
3.922945022583008,
3.9181602001190186,
3.9130547046661377,
3.9083633422851562,
3.903080701828003,
3.899059534072876,
3.893489360809326,
3.8882503509521484,
3.883693218231201,
3.8787953853607178,
3.8738210201263428,
3.868912696838379,
3.8640596866607666,
3.8594536781311035,
3.8540985584259033,
3.8496525287628174,
3.8442223072052,
3.8394031524658203,
3.8348679542541504,
3.829735517501831,
3.8248510360717773,
3.819963216781616,
3.8154404163360596,
3.811004638671875,
3.8054311275482178,
3.8004531860351562,
3.7959461212158203,
3.790743589401245,
3.786058187484741,
3.781550168991089,
3.776973247528076,
3.771704912185669,
3.766946792602539,
3.762183427810669,
3.757178544998169,
3.753021240234375,
3.747832298278086,
3.7440967559814453,
3.7389893531799316,
3.733931064605713,
3.7293694019317627,
3.725104331970215,
3.7200775146484375,
3.7157132625579834,
3.7106316089630127,
3.7059876918792725,
3.7016618251800537,
3.697359800338745,
3.692640542984009,
3.6876838207244873,
3.682781934738159,
3.678723096847534,
3.673780679702759,
3.6692352294921875,
3.665004014968872,
3.6603734493255615,
3.6555771827697754,
3.651078701019287,
3.646249771118164,
3.642225742340088,
3.636950969696045,
3.632399082183838,
3.6281983852386475,
3.623854160308838,
3.6192848682403564,
3.6148741245269775,
3.6103458404541016,
3.6055214405059814,
3.6007769107818604,
3.596590042114258,
3.5920298099517822,
[illegible]
2.1169817447662354,
2.1149299144744873,
2.1129250526428223,
2.1106030941000952,
2.1084694862365723,
2.1061599254608154,
2.104238510131836,
2.102081298828125,
2.0997872352600098,
2.0977394580841064,
2.095604181289673,
2.0935614109039307,
2.09128737449646,
2.0893566608428955,
2.0870862007141113,
2.085036277770996,
2.0826973915100098,
2.080702304840088,
2.0788285732269287,
2.0766124725341797,
2.0745768547058105,
2.072467803955078,
2.0705900192260074,
2.0689821243286133,
2.0663716793060303,
2.064443826675415,
2.0625901222229004,
2.0608873367309570,
2.0585741996765137,
2.0565855503082275,
2.0550332069396973,
2.0525949001312256,
2.0511887073516846,
2.0486605167388916,
2.0471274852752686,
2.0448131561279297,
2.042896270751953,
2.0408778190612793,
2.0390684604644775,
2.0372090339660645,
2.0351877212524414,
2.0332539081573486,
2.0314762592315674,
2.0293769836425780,
2.0275254249572754,
2.0256683826446533,
2.0239741802215576,
2.0218186378479004,
2.0201125144958496,
2.0180370807647705,
2.0161590576171875,
2.0143764019012450,
2.0124218463897705,
2.0103185176849365,
2.0084853172302246,
2.0067574977874756,
2.0049352645874023,
2.0029516220092773,
2.0010063648223877,
1.9993315935134888,
1.9976824522018433,
1.9955525398254395,
1.9938994646072388,
1.9918516874313354,
1.9902033805847168,
1.9883699417114258,
1.986685037612915,
1.9847803115844727,
1.9833146333694458,
1.9813668727874756,
1.9799522161483765,
1.978034257888794,
1.9763031005859375,
1.9747080802917480,
1.9728355407714844,
1.9710603952407837,
1.9695689678192139,
1.9675933122634888,
1.9659479856491089,
1.9643083810806274,
1.9628163576126099,
1.9608386754989624,
1.9593391418457031,
1.9574673175811768,
1.9557744264602661,
1.95426607131958,
1.9522430896759033,
1.9505751132965088,
1.9487625360488892,
1.947359323501587,
1.9454689025878906,
1.9437556266784668,
1.9422773122787476,
1.940424919128418,
1.9389638900756836,
1.9371079206466675,
1.9355872869491577,
1.9339596033096313,
1.9322903156280518,
1.9307984113693237,
1.9290046691894531,
1.9273566007614136,
1.9259754419326782,
1.9241666793823242,
1.9226830005645752,
1.921016812324524,
1.9194154739379883,
1.9180492162704468,
1.91619873046875,
1.914751648902893,
1.9132897853851318,
1.9115841388702393,
1.910181999206543,
1.9086353778839111,
1.9068785905838013,
1.9053752422332764,
1.9037078619003296,
1.9020997285842896,
1.9009387493133545,
1.8990792036056519,
1.897395372390747,
1.8959473371505737,
1.8943578004837036,
1.8928024768829346,
1.8913567066192627,
1.8897305727005005,
1.888221263885498,
1.8866194486618042,
1.8850957155227661,
1.8837988376617432,
1.8822920322418213,
1.8807581663131714,
1.8794546127319336,
1.8778486251831055,
1.876368522644043,
1.8750404119491577,
1.8735554218292236,
1.8724883794784546,
1.8706486225128174,
1.8694208860397339,
1.8679081201553345,
1.8664464950561523,
1.865002989768982,
1.8635683059692383,
1.8621160984039307,
1.8608993291854858,
1.8593292236328125,
1.8578089475631714,
1.856480598449707,
1.8551068305969238,
1.853611946105957,
1.852178692817688,
1.851011037826538,
1.8495272397994995,
1.8482531309127808,
1.8466863632202148,
1.8455127477645874,
1.8440775871276855,
1.842870831489563,
1.8413522243499756,
1.8400131464004517,
1.8386681079864502,
1.837285041809082,
1.8359239101409912,
1.8347045183181763,
1.8334379196166992,
1.83199942111969,
1.8305753469467163,
1.8293930292129517,
1.8281327486038208,
1.8269351720809937,
1.8253690004348755,
1.8242729902267456,
1.822777271270752,
1.8217780590057373,
1.820247769355774,
1.8188689947128296,
1.8175278902053833,
1.8161773681640625,
1.8148701190948486,
1.8138267993927002,
1.812233328819275,
1.8112068176269531,
1.8100420236587524,
1.8085330724716187,
1.8072400093078613,
1.8060197830200195,
1.8046977519989014,
1.8034881353378296,
1.8022900819778442,
1.8008482456207275,
1.7996727228164673,
1.7982772588729858,
1.7971230745315552,
1.7958569526672363,
1.7946691513061523,
1.7933706045150757,
1.7921955585479736,
1.790987253189087,
1.7897365093231201,
1.7885687351226807,
1.7873120307922363,
1.7861664295196533,
1.7849071025848389,
1.7838935852050781,
1.7825292348861694,
1.7813944816589355,
1.7801730632781982,
1.7792060375213623,
1.7780510187149048,
1.7766673564910889,
1.775557518005371,
1.774369478225708,
1.7731422185897827,
1.7719528675079346,
1.7708544731140137,
1.769679307937622,
1.7685374021530151,
1.7673789262771606,
1.7660493850708008,
1.7649763822555542,
1.7637320756912231,
1.7625876665115356,
1.7616714239120483,
1.7606120109558105,
1.7594387531280518,
1.7583210468292236,
1.757139801979065,
1.7560985088348389,
1.7549680471420288,
1.7542004585266113,
1.752701759338379,
1.7517303228378296,
1.7507392168045044,
1.7495808601379395,
1.7485507726669312,
1.7475357055664062,
1.7462745904922485,
1.7452489137649536,
1.7444028854370117,
1.7430589199066162,
1.742276906967163,
1.7409465312957764,
1.7397453784942627,
1.738792896270752,
1.7377303838729858,
1.7366034984588623,
1.735611081123352,
1.7345103025436401,
1.7334421873092651,
1.7324007749557495,
1.731446623802185,
1.7302932739257812,
1.7292789220809937,
1.7283228635787964,
1.7272911071777344,
1.72621488571167,
1.7252386808395386,
1.7241859436035156,
1.7232669591903687,
1.7219493389129639,
1.7213398218154907,
1.7199432849884033,
1.7189310789108276,
1.7179439067840576,
1.7171229124069214,
1.7159042358398438,
1.715109944343567,
...],
'val_loss': [8.505990982055664,
8.49750804901123,
8.489075660705566,
8.480375289916992,
8.472036361694336,
8.463561058044434,
8.455286979675293,
8.446806907653809,
8.438302993774414,
8.430025100708008,
8.422072410583496,
8.413844108581543,
8.40541934967041,
8.397266387939453,
8.388992309570312,
8.380866050720215,
8.372540473937988,
8.364328384399414,
8.356200218200684,
8.34809398651123,
8.340065956115723,
8.331792831420898,
8.323772430419922,
8.315838813781738,
8.307914733886719,
8.300161361694336,
8.292261123657227,
8.28441047668457,
8.27652359008789,
8.268643379211426,
8.260771751403809,
8.253069877624512,
8.245153427124023,
8.237299919128418,
8.229352951049805,
8.221686363220215,
8.21382999420166,
8.206116676330566,
8.198528289794922,
8.190840721130371,
8.18305492401123,
8.175424575805664,
8.167684555053711,
8.160106658935547,
8.15223217010498,
8.144757270812988,
8.137184143066406,
8.129620552062988,
8.122365951538086,
8.114578247070312,
8.107105255126953,
8.099729537963867,
8.09244441986084,
8.085137367248535,
8.07750129699707,
8.070131301879883,
8.062666893005371,
8.055362701416016,
8.047807693481445,
8.040595054626465,
8.03341007232666,
8.026138305664062,
8.018852233886719,
8.01201057434082,
8.00489330291748,
7.997737884521484,
7.990410804748535,
7.98305606842041,
7.975914478302002,
7.968551158905029,
7.961413860321045,
7.954456806182861,
7.947536945343018,
7.940516471862793,
7.933539867401123,
7.9266462326049805,
7.919697284698486,
7.912843227386475,
7.906157970428467,
7.899056911468506,
7.892307281494141,
7.885403156280518,
7.8785505294799805,
7.871610641479492,
7.86456298828125,
7.857720375061035,
```

7.850885391235352,
7.843807220458984,
7.837012767791748,
7.830175399780273,
7.823475360870361,
7.816720485687256,
7.809911727905273,
7.803032875061035,
7.796144962310791,
7.789328575134277,
7.782553672790527,
7.775961875915527,
7.769183158874512,
7.7622551918029785,
7.755484580993652,
7.748726844787598,
7.741730213165283,
7.734950065612793,
7.728086948394775,
7.72113037109375,
7.714211463928223,
7.707533359527588,
7.7006707191467285,
7.69378662109375,
7.687033176422119,
7.680140018463135,
7.673562049865723,
7.666776657104492,
7.660245895385742,
7.653378009796143,
7.646511077880859,
7.6396613121032715,
7.632676124572754,
7.625800609588623,
7.618979454040527,
7.6123833656311035,
7.605623245239258,
7.599090099334717,
7.592477798461914,
7.585501194000244,
7.578911781311035,
7.572309970855713,
7.565783977508545,
7.559136390686035,
7.552555084228516,
7.545666217803955,
7.538942813873291,
7.5325927734375,
7.525738716125488,
7.519069671630859,
7.512331485748291,
7.50585412979126,
7.499424934387207,
7.492790699005127,
7.486202239990234,
7.479671478271484,
7.4728875160217285,
7.466246128082275,
7.45952844619751,
7.452904224395752,
7.446297645568848,
7.439634323120117,
7.433279514312744,
7.426400661468506,
7.419559478759766,
7.413000106811523,
7.406562805175781,
7.399895668029785,
7.392743110656738,
7.386218547821045,
7.379640102386475,
7.373061180114746,
7.366450309753418,
7.360080242156982,
7.35387659072876,
7.3473687171936035,
7.340634822845459,
7.334301471710205,
7.327774524688721,
7.32138729095459,
7.315065860748291,
7.308538436889648,
7.3021240234375,
7.2954816818237305,
7.2891364097595215,
7.282393455505371,
7.276004791259766,
7.26947021484375,
7.263267993927002,
7.257272243499756,
7.251182556152344,
7.244808673858643,
7.23817777633667,
7.232046604156494,
7.2256598472595215,
7.219104290008545,
7.212965965270996,
7.20648717880249,
7.200171947479248,
7.193820476531982,
7.187514781951904,
7.181344985961914,
7.17547082901001,
7.169449329376221,
7.162901401519775,
7.156502723693848,
7.150382995605469,
7.144299030303955,
7.138093948364258,
7.132290363311768,
7.1260986328125,
7.120017051696777,
7.113875865936279,
7.107532978057861,
7.101753234863281,
7.095551013946533,
7.089713096618652,
7.083578586578369,
7.077471733093262,
7.071432113647461,
7.065455436706543,
7.058953285217285,
7.053066730499268,
[illegible]
5.820483207702637,
5.816164493560791,
5.811922550201416,
5.807778358459473,
5.803244590759277,
5.798991680145264,
5.794527053833008,
5.790318489074707,
5.786003112792969,
5.781722545623779,
5.77770471572876,
5.773341178894043,
5.769087314605713,
5.765099048614502,
5.760777473449707,
5.756842613220215,
5.752714157104492,
5.748619556427002,
5.744498252868652,
5.740374565124512,
5.736152172088623,
5.731664657592773,
5.727627277374268,
5.723543167114258,
5.71964693069458,
5.715430736541748,
5.711366176605225,
5.706958293914795,
5.702733039855957,
5.698540687561035,
5.694498062133789,
5.690199851989746,
5.68613338470459,
5.682197093963623,
5.678021430969238,
5.673781871795654,
5.669986724853516,
5.665848255157471,
5.661653995513916,
5.657548427581787,
5.653346061706543,
5.649329662322998,
5.645269393920898,
5.640982151031494,
5.637139320373535,
5.632834434509277,
5.6286749839782715,
5.6245598793029785,
5.620393753051758,
5.616339683532715,
5.612343788146973,
5.608392715454102,
5.604298114776611,
5.600197792053223,
5.595802307128906,
5.591954231262207,
5.587794303894043,
5.583746910095215,
5.57938289642334,
5.575447082519531,
5.571596622467041,
5.567483901977539,
5.563248634338379,
5.559100151062012,
5.55510950088501,
5.551177501678467,
5.547065734863281,
5.5432000160217285,
5.53948450088501,
5.535506725311279,
5.531538486480713,
5.527624130249023,
5.523482322692871,
5.519793510437012,
5.516030311584473,
5.512368202209473,
5.508426666259766,
5.504430294036865,
5.500699996948242,
5.496578216552734,
5.4926252365112305,
5.488736629486084,
5.484647750854492,
5.480924129486084,
5.47711181640625,
5.4730939865112305,
5.469043254852295,
5.465420246124268,
5.461500644683838,
5.457494735717773,
5.453467845916748,
5.44965124130249,
5.445810317993164,
5.4422430992126465,
5.438292503356934,
5.434490203857422,
5.430799961090088,
5.4268798828125,
5.423170566558838,
5.419483661651611,
5.416015625,
5.411851406097412,
5.4078545570373535,
5.403721809387207,
5.399724006652832,
5.396193504333496,
5.3924126625061035,
5.388673305511475,
5.384644031524658,
5.380692958831787,
5.376965045928955,
5.373082637786865,
5.36936616897583,
5.365821838378906,
5.361968517303467,
5.358277320861816,
5.354286193847656,
5.350502967834473,
5.3466925621032715,
5.343111038208008,
5.339493274688721,
5.335639476776123,
5.332000255584717,
5.328208923339844,
5.324368476867676,
5.320891380310059,
5.317278861999512,
5.313586711883545,
5.309743881225586,
5.3060808181762695,
5.302006721496582,
5.298480033874512,
5.294823169708252,
5.290987491607666,
5.287254810333252,
5.283777236938477,
5.28024959564209,
5.2767333984375,
5.273080825805664,
5.269625186920166,
5.265978813171387,
5.262082576751709,
5.258549690246582,
5.254842281341553,
5.251133441925049,
5.24761962890625,
5.244016170501709,
5.240612983703613,
5.23654317855835,
5.232728958129883,
5.229172229766846,
5.225692272186279,
5.222291946411133,
5.218847274780273,
5.215263366699219,
5.211797714233398,
5.208212852478027,
5.204713821411133,
5.201040267944336,
5.197457313537598,
5.194029331207275,
5.190566539764404,
5.187065124511719,
5.183516025543213,
5.179724216461182,
5.17626953125,
5.173007011413574,
5.16945219039917,
5.165884494781494,
5.16213321685791,
5.158958435058594,
5.155465126037598,
5.152072906494141,
5.148612022399902,
5.144942283630371,
5.141500473022461,
5.138085842132568,
5.134649276733398,
5.131181240081787,
5.127660274505615,
5.124155044555664,
5.120704174041748,
5.117311954498291,
5.113701820373535,
5.110256195068359,
5.1069746017456055,
5.10355806350708,
5.100037574768066,
5.096719741821289,
5.093379974365234,
5.089928150177002,
5.086454391479492,
5.082877159118652,
5.0795512199401855,
5.076219081878662,
5.073157787322998,
5.069775581359863,
5.066509246826172,
5.062961578369141,
5.0593695640563965,
5.056151866912842,
5.052801132202148,
5.0493083000183105,
5.0461859703063965,
5.042677402496338,
5.039577960968018,
5.036262512207031,
5.032814025878906,
5.0294928550720215,
5.026313781738281,
5.022716999053955,
5.019249439239502,
5.01603364944458,
5.012779235839844,
5.0095534324646,
5.00635290145874,
5.003006458282471,
5.000015735626221,
4.99692440032959,
4.993537425994873,
4.990429401397705,
4.987183094024658,
4.984126091003418,
4.980789661407471,
4.9775896072387695,
4.974289894104004,
4.9708943367004395,
4.967599868774414,
4.964180946350098,
4.961172580718994,
4.958034038543701,
4.95505952835083,
4.9516401290893555,
4.948399543762207,
4.945499897003174,
4.942652702331543,
4.939356803894043,
4.93619441986084,
4.933126449584961,
4.929745674133301,
4.926674842834473,
4.923638343811035,
4.920536518096924,
4.91733455657959,
4.914278507232666,
4.911154747009277,
4.907893180847168,
4.904921054840088,
4.9017839431762695,
4.898698329925537,
4.895732402801514,
4.892604827880859,
4.8895368576049805,
4.88632869720459,
4.883382797241211,
4.8803277015686035,
4.87733268737793,
4.8744401931762695,
4.871392250061035,
4.868171215057373,
4.865265369415283,
4.862117767333984,
4.858977794647217,
4.855899333953857,
4.852828025817871,
4.849818229675293,
4.846800327301025,
4.844038963317871,
4.840976238250732,
4.838139533996582,
4.8351945877075195,
4.832305431365967,
4.829310417175293,
4.826329708099365,
4.823529243469238,
4.820533752441406,
4.817927360534668,
4.814939498901367,
4.811932563781738,
4.809168815612793,
4.806446552276611,
4.803673267364502,
4.800924301147461,
4.798028945922852,
4.795089244842529,
4.792374134063721,
4.789700031280518,
4.786893367767334,
4.783815860748291,
4.781077861785889,
4.7782392501831055,
4.775707721710205,
4.772827625274658,
4.770037651062012,
4.767529010772705,
4.764800071716309,
4.762137413024902,
4.75913143157959,
4.756136417388916,
4.75319766998291,
4.750344753265381,
4.747405529022217,
4.744767189025879,
4.74207878112793,
4.73927116394043,
4.736593246459961,
4.733877182006836,
4.731405735015869,
4.728761196136475,
4.725836753845215,
4.723444938659668,
4.721022605895996,
4.718385219573975,
4.7156267166137695,
4.71311616897583,
4.710770606994629,
4.708089828491211,
4.7057623863220215,
4.702785491943359,
4.7002949714660645,
4.697420597076416,
4.695069789886475,
4.6925554275512695,
4.690122127532959,
4.687564373016357,
4.6849799156188965,
4.6824631690979,
4.6800127029418945,
4.67745304107666,
4.675058841705322,
4.672715187072754,
4.670382022857666,
4.66776704788208,
4.665468215942383,
4.662935256958008,
4.660450458526611,
4.6578593254089355,
4.655155181884766,
4.652435302734375,
4.650179386138916,
4.647689342498779,
4.645156383514404,
4.642504692077637,
4.640087604522705,
4.637811660766602,
4.635257244110107,
4.632523059844971,
4.630209445953369,
4.627798557281494,
4.6255598068237305,
4.623163223266602,
4.620761871337891,
4.6184983253479,
4.61636209487915,
4.613960266113281,
4.611832141876221,
4.60952091217041,
4.607179164886475,
4.604909896850586,
4.602514743804932,
4.600165843963623,
4.598022937774658,
4.595629692077637,
4.593588829040527,
4.591475486755371,
4.589257717132568,
4.586833953857422,
4.58469295501709,
4.582343101501465,
4.580275535583496,
4.578099250793457,
4.575549602508545,
4.573287487030029,
4.571083068847656,
4.568881988525391,
4.566428184509277,
4.5642218589782715,
4.561988353729248,
4.559607028961182,
4.557476043701172,
4.555178165435791,
4.553229331970215,
4.551023006439209,
4.548767566680908,
4.546530723571777,
4.5442705154418945,
4.542173862457275,
4.540183067321777,
4.537883758544922,
4.535849571228027,
4.533686637878418,
4.531673431396484,
4.529569625854492,
4.5273003578186035,
4.525390148162842,
4.523405075073242,
4.521239757537842,
4.5192694664001465,
4.517167568206787,
4.515072345733643,
4.513031482696533,
4.510978698730469,
4.508852958679199,
4.5068230628967285,
4.504456043243408,
4.502259731292725,
4.500247955322266,
4.498089790344238,
4.496025085449219,
4.493956089019775,
4.4918999671936035,
4.4897871017456055,
4.4878668785095215,
4.486079216003418,
4.484198093414307,
4.482246398925781,
4.480195999145508,
4.478296279907227,
4.476250171661377,
4.474357604980469,
4.47266149520874,
4.470683574676514,
4.468864440917969,
4.4669189453125,
4.465124130249023,
4.463194370269775,
4.461369037628174,
4.459736347198486,
4.45793342590332,
4.455934047698975,
4.45402193069458,
4.451948165893555,
4.450126647949219,
4.448307991027832,
4.446344375610352,
4.444507598876953,
4.442743301391602,
4.441014766693115,
4.439011096954346,
4.437118053436279,
4.435296058654785,
4.433755397796631,
4.431902885437012,
4.43018102645874,
4.428389072418213,
4.42661190032959,
4.42480993270874,
4.4230523109436035,
4.421432971954346,
4.4199748039245605,
4.417959213256836,
4.416091442108154,
4.414359092712402,
4.412790298461914,
4.411102294921875,
4.409230709075928,
4.4073920249938965,
4.405888557434082,
4.404144287109375,
4.402648448944092,
4.400664806365967,
4.398954391479492,
4.397420883178711,
4.39561653137207,
4.39382266998291,
4.392195701599121,
4.3902788162231445,
4.388813495635986,
4.387092113494873,
4.385229110717773,
4.383744716644287,
4.382308483123779,
4.380745887756348,
4.379203796386719,
4.377493381500244,
4.375766754150391,
4.374232292175293,
4.372646331787109,
4.371026515960693,
4.369339466094971,
4.367672443389893,
4.366044044494629,
4.364558219909668,
4.362931251525879,
4.361361026763916,
4.359793186187744,
4.358123779296875,
4.356647968292236,
4.3550872802734375,
4.353802680969238,
4.351988315582275,
4.350472927093506,
4.349165439605713,
4.347843170166016,
4.346124649047852,
4.344582557678223,
4.343264102935791,
4.341835975646973,
4.34035062789917,
4.338966369628906,
4.337429523468018,
4.335857391357422,
4.334207534790039,
4.332571506500244,
4.330873489379883,
4.329482555389404,
4.327989101409912,
4.326654434204102,
4.325402736663818,
4.3239264488220215,
4.322547912597656,
4.321180820465088,
4.319857597351074,
4.318763256072998,
4.317524433135986,
4.316099643707275,
4.31447696685791,
4.313309192657471,
4.312045574188232,
4.3106842041015625,
4.309493541717529,
4.3082051277160645,
4.306868076324463,
4.305629730224609,
4.304187774658203,
4.302642345428467,
4.301511287689209,
4.299737930297852,
4.298317909240723,
4.2972731590271,
4.295708656311035,
4.294489860534668,
4.293189525604248,
4.291877746582031,
4.290586471557617,
4.289315700531006,
4.2882819175720215,
4.287056922912598,
4.286002159118652,
4.28472900390625,
4.283454895019531,
4.282186031341553,
4.281002044677734,
4.279717922210693,
4.278435230255127,
4.277076721191406,
4.275907039642334,
4.274604320526123,
4.273375511169434,
4.272172451019287,
4.270980358123779,
4.269524574279785,
4.268668174743652,
4.267385005950928,
...],
'val_mse': [7.490143299102783,
7.481990814208984,
7.473887920379639,
7.465508460998535,
7.457498550415039,
7.449349880218506,
7.441408634185791,
7.433254718780518,
7.425077438354492,
7.417129993438721,
7.409512042999268,
7.401613712310791,
7.393515586853027,
7.385693073272705,
7.377748966217041,
7.369952201843262,
7.361952781677246,
7.35407018661499,
7.346271991729736,
7.338496208190918,
7.3308000564575195,
7.322852611541748,
7.315162181854248,
7.307559967041016,
7.299968242645264,
7.292548179626465,
7.28497838973999,
7.277463436126709,
7.269906997680664,
7.262357711791992,
7.254817962646484,
7.247445583343506,
7.239859580993652,
7.232335090637207,
7.224714756011963,
7.217381477355957,
7.209854602813721,
7.202471733093262,
7.195215702056885,
7.187860965728760,
7.180404186248779,
7.1731061935424805,
7.165698051452637,
7.158451080322266,

```
 6.68222713470459,
 6.675690174102783,
 6.669153213500977,
 6.662633895874023,
 6.655980110168457,
 6.649436950683594,
 6.642946243286133,
 6.636684417724609,
 6.63025426864624,
 6.62405252456665,
 6.617775917053223,
 6.611124038696289,
 6.604865550994873,
 6.598597049713135,
 6.592403888702393,
 6.586085319519043,
 6.579833984375,
 6.573270320892334,
 6.566873550415039,
 6.560861110687256,
 6.554335117340088,
 6.547991752624512,
 6.541579246520996,
 6.535434722900391,
 6.52933931350708,
 6.523036003112793,
 6.516777992248535,
 6.510580062866211,
 6.50412130355835,
 6.497809410095215,
 6.491419792175293,
 6.485125541687012,
 6.478847980499268,
 6.472513198852539,
 6.466493129730225,
 6.459941387176514,
 6.453422546386719,
 6.447192668914795,
 6.441088676452637,
 6.43474817276001,
 6.427914142608643,
 6.421717643737793,
 6.415468692779541,
 6.409215927124023,
 6.40293550491333,
 6.3968939781188965,
 6.391025066375732,
 6.384842395782471,
 6.378432273864746,
 6.372428894042969,
 6.366227626800537,
 6.360165119171143,
 6.354170799255371,
 6.347968578338623,
 6.341881275177002,
 6.335557460784912,
 6.329537868499756,
 6.323112964630127,
 6.317051887512207,
 6.310841083526611,
 6.304966926574707,
 6.299304008483887,
 6.293543815612793,
 6.287493705749512,
 6.281176567077637,
 6.27537202835083,
 6.269310474395752,
 6.263073921203613,
 6.257259845733643,
 6.251100063323975,
 6.245108604431152,
 6.23907470703125,
 6.233091831207275,
 6.2272443771362305,
 6.221700668334961,
 6.216006755828857,
 6.209775447845459,
 6.203693866729736,
 6.197899341583252,
 6.19213867187
 6.186254024505615,
 6.180784225463867,
 6.174910545349121,
 6.169149398803711,
 6.163330078125,
 6.157304286956787,
 6.15185546875,
 6.14597225189209,
 6.140462875366211,
 6.13464879989624,
 6.1288628578186035,
 6.12314510345459,
 6.117492198944092,
 6.111299514770508,
 6.105739593505859,
 6.100171089172363,
 6.094557762145996,
 6.089111328125,
 6.083531379699707,
 6.078088760375977,
 6.071918964385986,
 6.066309928894043,
 6.060778617858887,
 6.055004596710205,
 6.049344539642334,
 6.043675422668457,
 6.0380353927612305,
 6.03235387802124,
 6.026472568511963,
 6.020832538604736,
 6.014897346496582,
 6.009374618530273,
 6.003777027130127,
 5.998040199279785,
 5.992490291595459,
 5.9870123863220215,
 5.981622695922852,
 5.975996971130371,
 5.9701056480407715,
 5.964648723602295,
 5.959393501281738,
 5.9538445472717285,
 5.9484992027282715,
 5.942996978759766,
 5.937173366546631,
 5.931326866149902,
 5.9257941246032715,
 5.920290470123291,
 5.9149065017700195,
 5.909786224365234,
 5.904210567474365,
 5.898995876312256,
 5.893254280090332,
 5.8877058029174805,
 5.88250732421875,
 5.877232551574707,
 5.871675968170166,
 5.8664422035217285,
 5.860821723937988,
 5.855525970458984,
 5.850203037261963,
 5.844586372375488,
 5.838802814483643,
 5.833133697509766,
 5.827683448791504,
 5.822456359863281,
 5.81689977645874,
 5.811755657196045,
 5.806525230407715,
 5.800951957702637,
 5.795319080352783,
 5.789804458618164,
 5.784247398376465,
 5.7787604331970215,
 5.773045539855957,
 5.767824649810791,
 5.762616157531738,
 5.7573137283325195,
 5.7518815994262695,
 5.746402740478516,
 5.740921974182129,
 5.735574245452881,
 5.730424404144287,
 5.725503921508789,
 5.720178604125977,
 5.714778900146484,
 5.70937967300415,
 5.703873157501221,
 5.698379993438721,
 5.693092346191406,
 5.68784761428833,
 5.682778835296631,
 5.6774163246154785,
 5.671950340270996,
 5.666736125946045,
 5.661227703094482,
 5.656092643737793,
 5.65065336227417,
 5.6454668045043945,
 5.640201568603516,
 5.6351823806762695,
 5.630002975463867,
 5.624638557434082,
 5.6195573806762695,
 5.614388465881348,
 5.609449863433838,
 5.604384422302246,
 5.599374294281006,
 5.594438076019287,
 5.589302062988281,
 5.58388614654541,
 5.578541278839111,
 5.573326587677002,
 5.5687150955200195,
 5.563840389251709,
 5.558784008026123,
 5.5538225173950195,
 5.548426151275635,
 5.543497085571289,
 5.5387139320373535,
 5.533725261688232,
 5.528735637664795,
 5.524024963378906,
 5.519179344177246,
 5.513881683349609,
 5.50891637802124,
 5.503760814666748,
 5.498790264129639,
 5.494063854217529,
 5.488986968994141,
 5.484238624572754,
 5.479517936706543,
 5.474570274353027,
 5.4700026512146,
 5.465062141418457,
 5.460247993469238,
 5.455459117889404,
 5.450596809387207,
 5.445619106292725,
 5.440788269042969,
 5.436100959777832,
 5.431586265563965,
 5.426957130432129,
 5.422138690948486,
 5.417344570159912,
 5.412330627441406,
 5.40759801864624,
 5.402613162994385,
 5.398217678070068,
 5.393415927886963,
 5.3886284828186035,
 5.383834362030029,
 5.378855228424072,
 5.374443054199219,
 5.369847774505615,
 5.364909648895264,
 5.360313892364502,
 5.355525970458984,
 5.35085916519165,
 5.345966815948486,
 5.341054916381836,
 5.33633279800415,
 5.331723690032959,
 5.326934337615967,
 5.322287559509277,
 5.317377090454102,
 5.312995433807373,
 5.308371543884277,
 5.303586483001709,
 5.299216270446777,
 5.294527530670166,
 5.290029048919678,
 5.285464763641357,
 5.280849456787109,
 5.276652812957764,
 5.272021770477295,
 5.267436504364014,
 5.262731552124023,
 5.258424758911133,
 5.253380298614502,
 5.248772621154785,
 5.244545936584473,
 5.240330696105957,
 5.235654354095459,
 5.231234073638916,
 5.226681232452393,
 5.222038269042969,
 5.217785835266113,
 5.213250160217285,
 5.208559513092041,
 5.204245090484619,
 5.199775218963623,
 5.195137023925781,
 5.190837383270264,
 5.186282634735107,
 5.181503772735596,
 5.17714786529541,
 5.172695159912109,
 5.168393611907959,
 5.164237976074219,
 5.1596856117248535,
 5.155533313751221,
 5.151297092437744,
 5.147308349609375,
 5.143092155456543,
 5.138750076293945,
 5.134643077850342,
 5.130473613739014,
 5.126175880432129,
 5.121962547302246,
 5.117887496948242,
 5.1140875816345215,
 5.110008716583252,
 5.105627059936523,
 5.101306915283203,
 5.097156524658203,
 5.092679977416992,
 5.0885329246521,
 5.084519863128662,
 5.080338001251221,
 5.075995922088623,
 5.0715765953063965,
 5.067479610443115,
 5.063255310058594,
 5.059427261352539,
 5.0551581382751465,
 5.051243305206299,
 5.046998500823975,
 5.04300594329834,
 5.038906097412109,
 5.034689903259277,
 5.030637264251709,
 5.026505947113037,
 5.022485256195068,
 5.0184454917907715,
 5.01451301574707,
 5.010493278503418,
 5.006625652313232,
 5.002145767211914,
 4.998098373413086,
 4.994154453277588,
 4.9899773597717285,
 4.9860334396362305,
 4.981880187988281,
 4.9779486656188965,
 4.973928451538086,
 4.96981954574585,
 4.965714931488037,
 4.96162223815918,
 4.957492351531982,
 4.953321933746338,
 4.949023723602295,
 4.944781303405762,
 4.940734386444092,
 4.936770915985107,
 4.932901382446289,
 4.928631782531738,
 4.924648761749268,
 4.9204511642456055,
 4.9165143966674805,
 4.912467002868652,
 4.908456802368164,
 4.904717445373535,
 4.9006218910217285,
 4.896633625030518,
 4.892922878265381,
 4.888863563537598,
 4.885205268859863,
 4.881345748901367,
 4.87752103805542,
 4.873666763305664,
 4.86981201171875,
 4.865855693817139,
 4.861624240875244,
 4.857858180999756,
 4.854043960571289,
 4.850419521331787,
 4.846464157104492,
 4.842668056488037,
 4.8385186195373535,
 4.834555149078369,
 4.830626964569092,
 4.826850414276123,
 4.822813510894775,
 4.819015979766846,
 4.815345287322998,
 4.811429977416992,
 4.8074517250061035,
 4.803925514221191,
 4.800048351287842,
 4.796115875244141,
 4.79226541519165,
 4.7883219718933105,
 4.784565448760986,
 4.780765056610107,
 4.776730537414551,
 4.773155212402344,
 4.769103527069092,
 4.765199661254883,
 4.761344909667969,
 4.757432460784912,
 4.753636360168457,
 4.749901294708252,
 4.746207237243652,
 4.742373943328857,
 4.738529205322266,
 4.734380722045898,
 4.7307963371276855,
 4.72689151763916,
 4.723099708557129,
 4.7189812660217285,
 4.715302467346191,
 4.711709499359131,
 4.707850456237793,
 4.703863143920898,
 4.699963569641113,
 4.696229457855225,
 4.692550182342529,
 4.6886887550354,
 4.68507719039917,
 4.6816205978393555,
 4.677894592285156,
 4.674178600311279,
 4.670517921447754,
 4.666619300842285,
 4.6631879806518555,
 4.659681797027588,
 4.656277179718018,
 4.652584552764893,
 4.648838043212891,
 4.645359516143799,
 4.641477584838867,
 4.6377692222595215,
 4.634128093719482,
 4.630283355712891,
 4.626811981201172,
 4.623250484466553,
 4.619476795196533,
 4.615668773651123,
 4.612298488616943,
 4.6086225509643555,
 4.604856014251709,
 4.601071834564209,
 4.597502708435059,
 4.593908309936523,
 4.590591907501221,
 4.586881160736084,
 4.583323955535889,
 4.579880714416504,
 4.576202869415283,
 4.572740077972412,
 4.569300651550293,
 4.5660081996154785,
 4.562155246734619,
 4.558394908905029,
 4.554493427276611,
 4.550729751586914,
 4.547447681427002,
 4.54390811920166,
 4.540410995483398,
 4.536615371704102,
 4.532894611358643,
 4.52940559387207,
 4.525761604309082,
 4.522283554077148,
 4.518983364105225,
 4.515366554260254,
 4.511913776397705,
 4.508153438568115,
 4.504606246948242,
 4.501033306121826,
 4.497695446014404,
 4.494314193725586,
 4.490692615509033,
 4.487293720245361,
 4.483734130859375,
 4.480125427246094,
 4.476894378662109,
 4.473520278930664,
 4.470064163208008,
 4.466452598571777,
 4.4630255699157715,
 4.459175109863281,
 4.455886363983154,
 4.4524641036987305,
 4.448856830596924,
 4.445356845855713,
 4.442117691040039,
 4.438828945159912,
 4.435552120208740,
 4.432132244110107,
 4.428913593292236,
 4.425502300262451,
 4.4218316078186035,
 4.418532848358154,
 4.415055751800537,
 4.411572456359863,
 4.408292293548584,
 4.404921054840088,
 4.4017510414123535,
 4.397897720336914,
 4.394306659698486,
 4.390979766845703,
 4.387731552124023,
 4.3845672607421875,
 4.381356239318848,
 4.378001689910889,
 4.3747687339782715,
 4.371415138244629,
 4.368143558502197,
 4.364690780639648,
 4.361335754394531,
 4.3581414222717285,
 4.354902744293213,
 4.35162878036499,
 4.348306655883789,
 4.344733238220215,
 4.341507911682129,
 4.338475227355957,
 4.335144519805908,
 4.3318047523498535,
 4.328269958496094,
 4.325325012207031,
 4.322057723999023,
 4.318893909454346,
 4.315658092498779,
 4.312209606170654,
 4.30898904800415,
 4.3058013916015625,
 4.30258846282959,
 4.299345970153809,
 4.296043872833252,
 4.29276180267334,
 4.28953218460083,
 4.286360740661621,
 4.282966613769531,
 4.279740810394287,
 4.27668571472168,
 4.273488998413086,
 4.270187854766846,
 4.267094612121582,
 4.263975143432617,
 4.260744094848633,
 4.257484436035156,
 4.254124641418457,
 4.2510199546813965,
 4.247908115386963,
 4.245070934295654,
 4.241907596588135,
 4.238857269287109,
 4.235520839691162,
 4.232138633728027,
 4.229140281677246,
 4.22600793838501,
 4.222727298736572,
 4.219829082489014,
 4.216531753540039,
 4.2136549949646,
 4.21055269241333,
 4.207314968109131,
 4.204209327697754,
 4.201249599456787,
 4.197859764099121,
 4.194602012634277,
 4.1916022300720215,
 4.188562393188477,
 4.185548782348633,
 4.182568550109863,
 4.179437637329102,
 4.176669597625732,
 4.173794269561768,
 4.170616149902344,
 4.167725086212158,
 4.1646904945373535,
 4.1618523597717285,
 4.158724308013916,
 4.15573787689209,
 4.152647018432617,
 4.149455547332764,
 4.146367073059082,
 4.143154621124268,
 4.14036226272583,
 4.137438774108887,
 4.134683609008789,
 4.131465435028076,
 4.128432273864746,
 4.125753402709961,
 4.123126029968262,
 4.120033264160156,
 4.117081165313721,
 4.114223480224609,
 4.11104154586792,
 4.10818338394165,
 4.105361461639404,
 4.102470874786377,
 4.0994744300842285,
 4.096630573272705,
 4.093719959259033,
 4.090662479400635,
 4.087901154174805,
 4.084972381591797,
 4.082096576690674,
 4.079339981079102,
 4.076417922973633,
 4.073559284210205,
 4.070554733276367,
 4.067819118499756,
 4.064974308013916,
 4.0621819496154785,
 4.059503555297852,
 4.056661128997803,
 4.053639888763428,
 4.050942897796631,
 4.047995090484619,
 4.045056343078613,
 4.042180061340332,
 4.039312839508057,
 4.036509990692139,
 4.033697128295898,
 4.031148910522461,
 4.0282883644104,
 4.025659561157227,
 4.022919178009033,
 4.02023983001709,
 4.017449378967285,
 4.01467752456665,
 4.012085914611816,
 4.0092902183532715,
 4.006902694702148,
 4.004116535186768,
 4.001306533813477,
 3.998753547668457,
 3.9962382316589355,
 3.993673801422119,
 3.991132259368896,
 3.98844313621521,
 3.9857053756713867,
 3.9831948280334473,
 3.9807324409484863,
 3.9781277179718018,
 3.9752490520477295,
 3.9727160930633545,
 3.9700801372528076,
 3.967759132385254,
 3.965081453323364,
 3.962493896484375,
 3.960197687149048,
 3.9576728343963623,
 3.955216407775879,
 3.9524054527282715,
 3.949610948562622,
 3.9468672275543213,
 3.944216728210449,
 3.941474199295044,
 3.939041376113892,
 3.936555862426758,
 3.933948278427124,
 3.9314727783203125,
 3.928959846496582,
 3.9266960620880127,
 3.924255609512329,
 3.9215264320373535,
 3.9193484783172607,
 3.9171347618103027,
 3.914700746536255,
 3.9121387004852295,
 3.909834861755371,
 3.9077014923095703,
 3.9052162170410156,
 3.9031028747558594,
 3.900315284729004,
 3.8980307579040527,
 3.895350694656372,
 3.893204689025879,
 3.8908932209014893,
 3.888667106628418,
 3.8863086700439453,
 3.883922576904297,
 3.8816072940826416,
 3.879358768463135,
 3.877000570297241,
 3.874814987182617,
 3.87267804145813,
 3.870551586151123,
 3.8681342601776123,
 3.866044759750366,
 3.86370849609375,
 3.861426830291748,
 3.8590383529663086,
 3.8565239906311035,
 3.853999376296997,
 3.851952075958252,
 3.849660634994507,
 3.8473243713378906,
 3.84486985206604,
 3.842653751373291,
 3.8405778408050537,
 3.838219165802002,
 3.835677146911621,
 3.833564281463623,
 3.8313488960266113,
 3.8293144702911377,
 3.8271172046661377,
 3.8249194622039795,
 3.8228580951690674,
 3.8209328651428223,
 3.81872820854187,
 3.8168108463287354,
 3.814695358276367,
 3.8125572204589844,
 3.810487747192383,
 3.8082892894744873,
 3.806145191192627,
 3.8042066097259521,
 3.802011728286743,
 3.8001792430877686,
 3.798271656036377,
 3.7962565422058105,
 3.794027090072632,
 3.7920966148376465,
 3.7899441719055176,
 3.7880795001983643,
 3.786102056503296,
 3.783740997314453,
 3.7816765308380127,
 3.7796690464019775,
 3.777672052383423,
 3.7754087448120117,
 3.773402452468872,
 3.7713685035705566,
 3.7691805362701416,
 3.7672488689422607,
 3.765145778656006,
 3.7634036540985107,
 3.7613959312438965,
 3.759341001510620,
 3.757303476333618,
 3.755237102508545,
 3.753342628479004,
 3.7515552043914795,
 3.74944806098938,
 3.74761700630188,
 3.745652437210083,
 3.7438435554504395,
 3.7419397830963135,
 3.739866256713867,
 3.7381629943847656,
 3.736381769180298,
 3.7344133853912354,
 3.7326500415802,
 3.7307443618774414,
 3.728844404220581,
 3.727006196975708,
 3.7251553535461426,
 3.7232260704040527,
 3.7213945388793945,
 3.7192137241363525,
 3.717209815979004,
 3.715400457382202,
 3.713437080383301,
 3.71156907081604,
 3.7096946239471436,
 3.707827568054199,
 3.705911874771118,
 3.704190492630005,
 3.7026073932647705,
 3.7009313106536865,
 3.6991748809814453,
 3.6973233222961426,
 3.695624828338623,
 3.693774700164795,
 3.692084550857544,
 3.69059419631958,
 3.6888186931610107,
 3.687201738357544,
 3.6854488849639893,
 3.6838631629943848,
 3.682133197784424,
 3.6805107593536377,
 3.6790809631347656,
 3.677475929260254,
 3.6756746768951416,
 3.6739678382873535,
 3.672084331512451,
 3.6704587936401367,
 3.66884183883667,
 3.667076587677002,
 3.665438652038574,
 3.663877010345459,
 3.662353515625,
 3.6605477333068848,
 3.65885329246521,
 3.657228469848633,
 3.655895471572876,
 3.654240369796753,
 3.6527223587036133,
 3.6511247158050537,
 3.649548053741455,
 3.6479482650756836,
 3.646390438079834,
 3.644972085952759,
 3.6437201499938965,
 3.6418983936309814,
 3.6402249336242676,
 3.638693332672119,
 3.6373355388641357,
 3.635847330093384,
 3.6341724395751953,
 3.63252854347229,
 3.631230354309082,
 3.6296815872192383,
 3.6283929347991943,
 3.6265993118286133,
 3.6250879764556885,
 3.6237547397613525,
 3.622147798538208,
 3.6205525398254395,
 3.6191246509552,
 3.617398500442505,
 3.616138219833374,
 3.6146132946014404,
 3.6129443645477295,
 3.6116583347320557,
 3.610426187515259,
 3.6090636253356934,
 3.60772442817688,
 3.6062090396881104,
 3.60467791557312,
 3.603343963623047,
 3.601954698562622,
 3.6005373001098633,
 3.599045991897583,
 3.5975751876831055,
 3.596142292022705,
 3.5948574542999268,
 3.5934271812438965,
 3.592054605484009,
 3.5906827449798584,
 3.5892107486724854,
 3.5879364013671875,
 3.586574077606201,
 3.585495948791504,
 3.5838727951049805,
 3.582559823989868,
 3.581455945968628,
 3.580339193344116,
 3.578815460205078,
 3.577469825744629,
 3.5763559341430664,
 3.5751237869262695,
 3.573836326599121,
 3.5726559162139893,
 3.571316957473755,
 3.5699398517608643,
 3.568485975265503,
 3.567038059234619,
 3.565530300140381,
 3.5643410682678223,
 3.5630438327789307,
 3.5619142055511475,
 3.560868263244629,
 3.5595881938934326,
 3.5584068298339844,
 3.5572402477264404,
 3.5561180114746094,
 3.5552289485931396,
 3.554190158843994,
 3.5529677867889404,
 3.5515336990356445,
 3.5505728721618652,
 3.5495121479034424,
 3.5483503341674805,
 3.547365188598633,
 3.5462770462036133,
 3.5451419353485107,
 3.54410719871521,
 3.5428621768951416,
 3.5415050983428955,
 3.540579319000244,
 3.5389885902404785,
 3.5377655029296875,
 3.5369279384613037,
 3.5355539321899414,
 3.534532308578491,
 3.5334312915802,
 3.5323126316070557,
 3.531219482421875,
 3.53014874458313,
 3.5293192863464355,
 3.5282905101776123,
 3.527440071105957,
 3.5263662338256836,
 3.52528715133667,
 3.524210214614868,
 3.5232291221618652,
 3.5221457481384277,
 3.521059036254883,
 3.5198910236358643,
 3.5189292430877686,
 3.5178139209747314,
 3.516786575317383,
 3.515784978866577,
 3.514791250228882,
 3.513526439666748,
 3.5128777027130127,
 3.5117852687835693,
 ...])
```

```
[8]: hist = pd.DataFrame(model_histo
```

```
hist
```

Out[38]:

	loss	mse	val_loss	val_mse
0	6.228053	5.212002	8.505991	7.490143
1	6.219394	5.203680	8.497508	7.481991
2	6.210801	5.195415	8.489076	7.473888
3	6.203500	5.188440	8.480375	7.465508
4	6.194484	5.179749	8.472036	7.457499
...	...	...	...	...
2014	1.705927	1.110648	3.992495	3.397284
2015	1.705299	1.110135	3.992620	3.397521
2016	1.704737	1.109681	3.992536	3.397540
2017	1.704114	1.109159	3.992657	3.397762
2018	1.703473	1.108623	3.992794	3.398008

2019 rows × 4 columns

In [39]:
```
hist['epoch'] = model_history.epoch
```

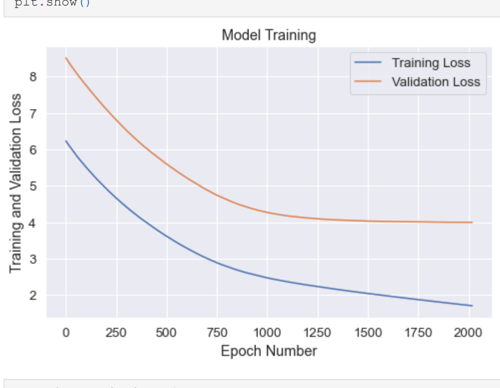
In [40]:
```
hist
```

Out[40]:

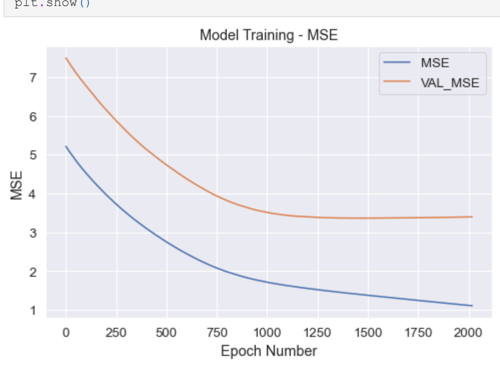
	loss	mse	val_loss	val_mse	epoch
0	6.228053	5.212002	8.505991	7.490143	0
1	6.219394	5.203680	8.497508	7.481991	1
2	6.210801	5.195415	8.489076	7.473888	2
3	6.203500	5.188440	8.480375	7.465508	3
4	6.194484	5.179749	8.472036	7.457499	4
...	...	...	...	...	...
2014	1.705927	1.110648	3.992495	3.397284	2014
2015	1.705299	1.110135	3.992620	3.397521	2015
2016	1.704737	1.109681	3.992536	3.397540	2016
2017	1.704114	1.109159	3.992657	3.397762	2017
2018	1.703473	1.108623	3.992794	3.398008	2018

2019 rows × 5 columns

In [41]:
```
plt.figure(figsize=(8,5))
plt.plot(model_history.history['loss'])
plt.plot(model_history.history['val_loss'])
plt.title("Model Training")
plt.ylabel("Training and Validation Loss")
plt.xlabel("Epoch Number")
plt.legend(['Training Loss', 'Validation Loss'])
plt.show()
```



In [42]:
```
plt.figure(figsize=(8,5))
plt.plot(model_history.history['mse'])
plt.plot(model_history.history['val_mse'])
plt.title("Model Training - MSE")
plt.ylabel("MSE")
plt.xlabel("Epoch Number")
plt.legend(['MSE','VAL_MSE'])
plt.show()
```



Model Evaluation

In [43]:
```
model.get_weights()
```

Out[43]:
```
[array([[-0.05297512, -0.12366547,  0.07736905, ..., -0.09062039,
          0.06347909, -0.20646802],
        [ 0.07098177,  0.03261359, -0.15519755, ...,  0.05719507,
         -0.15749949, -0.10113611],
        [ 0.04887106,  0.00890229,  0.0305215 , ..., -0.03756858,
          0.22047883,  0.05023079],
        ...,
        [ 0.00669095,  0.08665477,  0.21863142, ...,  0.11498241,
         -0.22320448, -0.02883197],
        [ 0.07771438, -0.00941532,  0.1424937 , ...,  0.15572394,
          0.01894218,  0.06721682],
        [-0.18693943,  0.13739987, -0.16098392, ...,  0.17147072,
          0.15384378, -0.0786418 ]], dtype=float32),
 array([ 0.02286501,  0.05595629,  0.00629237,  0.04838721,  0.03751145,
         0.0583783 ,  0.00977572,  0.00928267,  0.03593256,  0.03126948,
         0.0205111 , -0.00657973,  0.04227478,  0.02382563,  0.01991147,
         0.02659311,  0.02421512,  0.01672214,  0.03921797,  0.01986597,
         0.0157018 ,  0.02551727,  0.02921482,  0.02828117, -0.03395299,
         0.01385191,  0.00488556,  0.02775309,  0.02842942,  0.01569038,
         0.00961349,  0.04344428, -0.01884883,  0.03810513,  0.04133326,
         0.00993282,  0.01908422,  0.0247392 ,  0.01945011,  0.01810755,
         0.02757343,  0.0003002 ,  0.01042781,  0.03299244, -0.00842451,
         0.03537451, -0.00486113,  0.03444086,  0.01632731, -0.00494784,
         0.02895826,  0.04090858,  0.01624953, -0.00232494,  0.03320777,
         0.02880607,  0.00932558,  0.01108106,  0.01900231,  0.00590762,
         0.01495663,  0.03224392,  0.02279348,  0.00956912,  0.03479084,
         0.03201027,  0.03735344,  0.03164657,  0.02834768,  0.02609827,
         0.01470054,  0.02500943,  0.04311519,  0.04978966,  0.04149166,
         0.00990919,  0.03031854,  0.02596855,  0.04233734,  0.00772767,
         0.01478912,  0.02874257,  0.03725343,  0.03459123, -0.00632979,
         0.0195595 ,  0.03106309,  0.01895577,  0.04748554,  0.0296518 ,
         0.02844439,  0.02226294,  0.00356059,  0.02874099,  0.00481089,
         0.02929419,  0.04231519,  0.02573755,  0.03442017,  0.02246939],
       dtype=float32),
 array([[ 0.01932846, -0.06379972,  0.03528106, ...,  0.02721103,
         -0.06627891, -0.09619927],
        [ 0.04493451,  0.00656852,  0.02879464, ...,  0.10298236,
          0.12347642,  0.0790211 ],
        [ 0.10854605, -0.0068546 ,  0.07407635, ...,  0.0044572 ,
         -0.00207024,  0.08878914],
        ...,
        [ 0.1396535 , -0.04051942, -0.00445042, ...,  0.04680633,
          0.12956887,  0.09798314],
        [ 0.02053706,  0.02908778,  0.10291904, ...,  0.06987229,
          0.03162135, -0.09036664],
        [ 0.11015532, -0.02761587, -0.03520921, ...,  0.01708783,
         -0.06405288,  0.05709064]], dtype=float32),
 array([ 0.01630714,  0.00099641,  0.02342422,  0.03041459, -0.01091548,
         0.02370039,  0.02377683, -0.00821587,  0.02551295,  0.02527285,
         0.00426583,  0.02821421,  0.02721922, -0.01164966, -0.01868976,
         0.02700692,  0.0074912 ,  0.02741081,  0.0164098 ,  0.02065276,
         0.01861774,  0.02307676,  0.02213335,  0.02518474,  0.0012639 ,
         0.02137186,  0.00907708,  0.02548635,  0.01295699, -0.02586252,
         0.01023637,  0.01955277,  0.02945013,  0.02716623,  0.02647329,
         0.0240985 ,  0.01169613,  0.03748401,  0.02509284,  0.02338381,
         0.02692194,  0.03857735,  0.03489181,  0.02900954,  0.02710829,
         0.01242332,  0.026138  ,  0.03142025,  0.02358344,  0.02807993,
         0.02781942,  0.0327286 ,  0.02216413,  0.00988645, -0.00147242,
         0.01393692,  0.00290914,  0.02329304,  0.01355721,  0.02473922,
         0.00133924,  0.01345306,  0.01188673,  0.01756324,  0.01164875,
         0.00410176,  0.03048343,  0.04753087,  0.00755803,  0.02925803,
         0.02488935,  0.00831269,  0.02454482,  0.02858614,  0.02305795,
         0.0321452 , -0.00792221,  0.03532981,  0.01933076,  0.01506962,
         0.02606578,  0.02109972,  0.03459637, -0.00016614, -0.00102375,
         0.01814243,  0.00190724,  0.02770859,  0.01932088,  0.01561605,
         0.01171505,  0.02421564,  0.00732737,  0.02337352,  0.02996152,
         0.01547399,  0.03777861, -0.00568226,  0.02551151,  0.02648873],
       dtype=float32),
 array([[-0.22588977],
        [ 0.16904639],
        [ 0.05371038],
        [ 0.25027236],
        [-0.07141335],
        [-0.2988813 ],
        [ 0.17238206],
        [-0.11384952],
        [ 0.09266353],
        [ 0.25406265],
        [-0.21250758],
        [ 0.08650818],
        [ 0.1537262 ],
        [-0.27764058],
        [-0.07687674],
        [ 0.08438861],
        [-0.12691034],
        [ 0.1382819 ],
        [ 0.30734628],
        [-0.27995613],
        [ 0.25349355],
        [-0.16406277],
        [-0.08648181],
        [ 0.17945851],
        [-0.20591398],
        [-0.20706494],
        [ 0.29878476],
        [ 0.30075517],
        [-0.27687076],
        [ 0.03653288],
        [ 0.04586389],
        [ 0.28601742],
        [ 0.23488227],
        [ 0.12337863],
        [ 0.13417761],
        [ 0.23447405],
        [ 0.2104664 ],
        [ 0.06035161],
        [ 0.16009642],
        [ 0.20422143],
        [ 0.17106517],
        [-0.3100447 ],
        [-0.24016683],
        [-0.1563393 ],
        [ 0.31357655],
        [-0.10226043],
        [ 0.12418597],
        [ 0.05983278],
        [ 0.13532527],
        [ 0.12617171],
        [ 0.14278556],
        [ 0.18430334],
        [ 0.2419832 ],
        [-0.23127195],
        [ 0.06561269],
        [-0.10979528],
        [ 0.0478153 ],
        [-0.2688555 ],
        [-0.25366443],
        [-0.16682777],
        [-0.2234427 ],
        [-0.0988427 ],
        [-0.28043368],
        [-0.31948337],
        [-0.24627833],
        [-0.19419248],
        [-0.3210379 ],
        [-0.09730595],
        [-0.18817177],
        [-0.22419067],
        [-0.2218875 ],
        [ 0.2602077 ],
        [ 0.153298  ],
        [ 0.11866332],
        [ 0.24079604],
        [-0.31990212],
        [-0.2111475 ],
        [ 0.06587303],
        [-0.27023652],
        [-0.22321294],
        [ 0.28342387],
        [ 0.14152497],
        [ 0.3060754 ],
        [-0.23415774],
        [-0.23870659],
        [ 0.2080592 ],
        [-0.12197859],
        [ 0.20669596],
        [-0.10314799],
        [-0.19274594],
        [-0.11509818],
        [ 0.05561753],
        [-0.02352788],
        [ 0.2887438 ],
        [ 0.1723902 ],
        [ 0.07997457],
        [-0.252106  ],
        [-0.27027738],
        [ 0.16019955],
        [-0.19936158]], dtype=float32),
 array([0.02274327], dtype=float32)]
```

In [44]:
```
test_loss, test_mse = model.evaluate(X_test_scaled,y_test)
```

```
3/3 [==============================] - 0s 998us/step - loss: 2.4563 - mse: 1.8615
```

In [45]:
```
print("Test MSE: {}".format(test_mse))
```

```
Test MSE: 1.8615323305130005
```

Model Prediction

In [46]:
```
y_pred = model.predict(X_test_scaled)
```

In [47]:
```
y_pred[0:5]
```

Out[47]:
```
array([[ 1.2393335 ],
       [-0.07362135],
       [-0.10825673],
       [ 0.4234009 ],
       [ 0.45786145]], dtype=float32)
```

In [48]:
```
y_pred.round()[0:5]
```

Out[48]:
```
array([[ 1.],
       [-0.],
       [-0.],
       [ 0.],
       [ 0.]], dtype=float32)
```

In [49]:
```
y_test[0:5]
```

Out[49]:
```
array([4., 0., 0., 0., 0.])
```

In [50]:
```
mse = mean_squared_error(y_test,y_pred.round())
mse
```

Out[50]:
```
2.051282051282051
```

In [51]:
```
rmse = np.sqrt(mse)
rmse
```

Out[51]:
```
1.4322297480788657
```

In [52]:
```
r2 = r2_score(y_test,y_pred.round())
r2
```

Out[52]:
```
0.31488801054018445
```

In [53]:
```
n = len(X_test)
n
```

Out[53]:
```
78
```

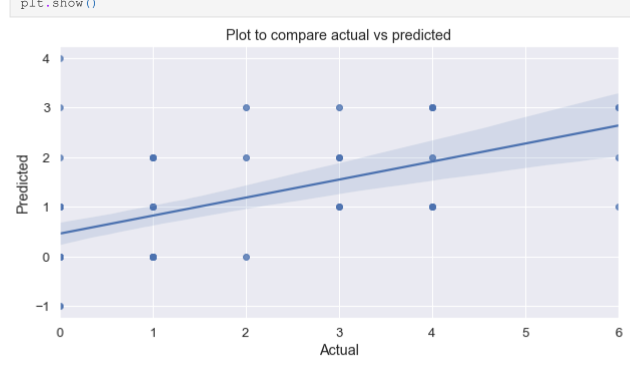
In [54]:
```
p = X_test.shape[1]
p
```

Out[54]:
```
42
```

In [55]:
```
#Adjusted R2 Score
adjr2 = 1-(1-r2)*(n-1)/(n-p-1)
adjr2
```

Out[55]:
```
-0.5072463768115942
```

In [56]:
```
fig, ax = plt.subplots(figsize=(10,5))
sns.regplot(x=y_test, y=y_pred.round(), ax=ax)
plt.title("Plot to compare actual vs predicted")
plt.ylabel("Predicted")
plt.xlabel("Actual")
plt.show()
```



Save the Model

In [57]:
```
model.save("dnnPartB.h5")
```

Cross Validation

Build a model (regression or classifier) first

In [58]:
```
def build_regressor():
    model = Sequential()
    model.add(Dense(units=100,activation='relu',input_dim=42))
    #model.add(BatchNormalization())
    #model.add(Dropout(0.2))
    model.add(Dense(units=100,activation='relu',kernel_regularizer='l2'))
    #model.add(BatchNormalization())
    #model.add(Dropout(0.2))
    model.add(Dense(units=1,activation='linear'))
    optimizer = Adam(learning_rate=0.00001)
    model.compile(optimizer=optimizer, loss='mean_squared_error', metrics=["mse"])
    return model
```

In [59]:
```
model = KerasRegressor(build_fn=build_regressor, epochs=3000)
```

In [60]:
```
kfold = StratifiedKFold(n_splits=5,shuffle=True,random_state=0)
```

In [61]:
```
cv = cross_val_score(estimator=model,X=X_train_scaled, y=y_train, cv=kfold, n_jobs=-1, verbose=2)
```

```
[Parallel(n_jobs=-1)]: Using backend LokyBackend with 4 concurrent workers.
[Parallel(n_jobs=-1)]: Done   5 out of   5 | elapsed:  1.5min finished
```

In [62]:
```
cv
```

Out[62]:
```
array([-4.08172989, -3.07708287, -4.10006762, -2.8819921 , -3.49925804])
```

In [63]:
```
cv.mean()
```

Out[63]:
```
-3.5280261039733887
```

In [64]:
```
cv.std()
```

Out[64]:
```
0.501070195491264
```

In [65]:
```
mse_mean = abs(cv.mean())
mse_mean
```

Out[65]:
```
3.5280261039733887
```

In [66]:
```
rmse = np.sqrt(mse_mean)
rmse
```

Out[66]:
```
1.8783040499273245
```

Model Hyperparameter Tuning

Create a regressor or classifier function

[illegible]

Use RandomSearch CV

[illegible]

Final Model

[illegible]