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first_NN
Python notebook using data from PUBG Finish Placement Prediction (Kernels Only) ·
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Version 37

Submission	Public Score
✔ **Ran successfully**	0.52663
Submitted by seiichiro a year ago	

Notebook   Data   Output   Comments

In [1]:

```python
# This Python 3 environment comes with many helpful analyti
cs libraries installed
# It is defined by the kaggle/python docker image: https://
github.com/kaggle/docker-python
# For example, here's several helpful packages to load in

import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g.
 pd.read_csv)

# Input data files are available in the "../input/" directo
ry.
# For example, running this (by clicking run or pressing Sh
ift+Enter) will list the files in the input directory

import os
print(os.listdir("../input"))

# Any results you write to the current directory are saved
 as output.
```

```
['train_V2.csv', 'test_V2.csv', 'sample_submi
ssion_V2.csv']
```

In [2]:

```python
#!/usr/bin/env python
# coding: utf-8
"""
@author: nakayama.s
"""

import os
import warnings
import gc
import time
from tqdm import tqdm
import pandas as pd
import numpy as np
from sklearn.metrics import log_loss
from sklearn.metrics import mean_squared_error
from sklearn.preprocessing import LabelEncoder
from itertools import product
```

In [3]:

```python
def graph_insight(data):
    print(set(data.dtypes.tolist()))
    df_num = data.select_dtypes(include = ['float64', 'int
64'])
    df_num hist(figsize=(16, 16), bins=50, xlabelsize=8, y
```

```python
    df_num.hist(figsize=(16, 16), bins=50, xlabelsize=8, y
labelsize=8);

def eda(data):
    # print(data)
    print("----------Top-5- Record----------")
    print(data.head(5))
    print("-----------Information-----------")
    print(data.info())
    print("-----------Data Types------------")
    print(data.dtypes)
    print("----------Missing value----------")
    print(data.isnull().sum())
    print("----------Null value-------------")
    print(data.isna().sum())
    print("----------Shape of Data----------")
    print(data.shape)
    print("----------describe---------------")
    print(data.describe())
    print("----------tail-------------------")
    print(data.tail())

def read_csv(path):
  # logger.debug('enter')
  df = pd.read_csv(path)
  # logger.debug('exit')
  return df

def load_train_data():
  # logger.debug('enter')
  df = read_csv(SALES_TRAIN_V2)
  # logger.debug('exit')
  return df

def load_test_data():
  # logger.debug('enter')
  df = read_csv(TEST_DATA)
  # logger.debug('exit')
  return df

def graph_insight(data):
    print(set(data.dtypes.tolist()))
    df_num = data.select_dtypes(include = ['float64', 'int
64'])
    df_num.hist(figsize=(16, 16), bins=50, xlabelsize=8, y
labelsize=8);

def drop_duplicate(data, subset):
    print('Before drop shape:', data.shape)
    before = data.shape[0]
    data.drop_duplicates(subset,keep='first', inplace=True
) #subset is list where you have to put all column for dupl
icate check
    data.reset_index(drop=True, inplace=True)
    print('After drop shape:', data.shape)
```

```
    after = data.shape[0]
    print('Total Duplicate:', before-after)

def unresanable_data(data):
    print("Min Value:",data.min())
    print("Max Value:",data.max())
    print("Average Value:",data.mean())
    print("Center Point of Data:",data.median())


SAMPLE_SUBMISSION      = '../input/sample_submission_V2.csv'
TRAIN_DATA             = '../input/train_V2.csv'
TEST_DATA              = '../input/test_V2.csv'


sample          = read_csv(SAMPLE_SUBMISSION)
train           = read_csv(TRAIN_DATA)
test            = read_csv(TEST_DATA)
```

In [4]:

```
eda(train)
```

```
---------Top-5- Record----------
             Id          groupId      ...
winPoints  winPlacePerc
0  7f96b2f878858a  4d4b580de459be     ...
1466         0.4444
1  eef90569b9d03c  684d5656442f9e     ...
0         0.6400
2  1eaf90ac73de72  6a4a42c3245a74     ...
0         0.7755
3  4616d365dd2853  a930a9c79cd721     ...
0         0.1667
4  315c96c26c9aac  de04010b3458dd     ...
0         0.1875

[5 rows x 29 columns]
----------Information----------
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 4446966 entries, 0 to 4446965
Data columns (total 29 columns):
Id                object
groupId           object
matchId           object
assists           int64
boosts            int64
damageDealt       float64
DBNOs             int64
headshotKills     int64
heals             int64
killPlace         int64
killPoints        int64
kills             int64
killStreaks       int64
longestKill       float64
```

```
matchDuration      int64
matchType          object
maxPlace           int64
numGroups          int64
rankPoints         int64
revives            int64
rideDistance       float64
roadKills          int64
swimDistance       float64
teamKills          int64
vehicleDestroys    int64
walkDistance       float64
weaponsAcquired    int64
winPoints          int64
winPlacePerc       float64
dtypes: float64(6), int64(19), object(4)
memory usage: 983.9+ MB
None
-----------Data Types------------
Id                 object
groupId            object
matchId            object
assists            int64
boosts             int64
damageDealt        float64
DBNOs              int64
headshotKills      int64
heals              int64
killPlace          int64
killPoints         int64
kills              int64
killStreaks        int64
longestKill        float64
matchDuration      int64
matchType          object
maxPlace           int64
numGroups          int64
rankPoints         int64
revives            int64
rideDistance       float64
roadKills          int64
swimDistance       float64
teamKills          int64
vehicleDestroys    int64
walkDistance       float64
weaponsAcquired    int64
winPoints          int64
winPlacePerc       float64
dtype: object
----------Missing value----------
Id                 0
groupId            0
matchId            0
assists            0
boosts             0
```

```
boosts            0
damageDealt       0
DBNOs             0
headshotKills     0
heals             0
killPlace         0
killPoints        0
kills             0
killStreaks       0
longestKill       0
matchDuration     0
matchType         0
maxPlace          0
numGroups         0
rankPoints        0
revives           0
rideDistance      0
roadKills         0
swimDistance      0
teamKills         0
vehicleDestroys   0
walkDistance      0
weaponsAcquired   0
winPoints         0
winPlacePerc      1
dtype: int64
----------Null value------------
Id                0
groupId           0
matchId           0
assists           0
boosts            0
damageDealt       0
DBNOs             0
headshotKills     0
heals             0
killPlace         0
killPoints        0
kills             0
killStreaks       0
longestKill       0
matchDuration     0
matchType         0
maxPlace          0
numGroups         0
rankPoints        0
revives           0
rideDistance      0
roadKills         0
swimDistance      0
teamKills         0
vehicleDestroys   0
walkDistance      0
weaponsAcquired   0
winPoints         0
```

```
winPlacePerc          1
dtype: int64
----------Shape of Data----------
(4446966, 29)
----------describe---------------
           assists        boosts      ...
winPoints  winPlacePerc
count  4.446966e+06  4.446966e+06      ...
4.446966e+06  4.446965e+06
mean   2.338149e-01  1.106908e+00      ...
6.064601e+02  4.728216e-01
std    5.885731e-01  1.715794e+00      ...
7.397004e+02  3.074050e-01
min    0.000000e+00  0.000000e+00      ...
0.000000e+00  0.000000e+00
25%    0.000000e+00  0.000000e+00      ...
0.000000e+00  2.000000e-01
50%    0.000000e+00  0.000000e+00      ...
0.000000e+00  4.583000e-01
75%    0.000000e+00  2.000000e+00      ...
1.495000e+03  7.407000e-01
max    2.200000e+01  3.300000e+01      ...
2.013000e+03  1.000000e+00

[8 rows x 25 columns]
----------tail-------------------
                    Id         groupId
...       winPoints  winPlacePerc
4446961  afff7f652dbc10  d238e426f50de7
...           1507        0.1786
4446962  f4197cf374e6c0  408cdb5c46b2ac
...              0        0.2935
4446963  e1948b1295c88a  e26ac84bdf7cef
...              0        0.4815
4446964  cc032cdd73b7ac  c2223f35411394
...              0        0.8000
4446965  0d8e7ed728b6fd  8c74f72fedf5ff
...              0        0.5464

[5 rows x 29 columns]
```

In [5]:

```
eda(test)
```

```
----------Top-5- Record----------
              Id         groupId    ...
weaponsAcquired  winPoints
0  9329eb41e215eb  676b23c24e70d6    ...
1          0
1  639bd0dcd7bda8  430933124148dd    ...
6          0
2  63d5c8ef8dfe91  0b45f5db20ba99    ...
4          0
```

```
3  cf5b81422591d1  b7497dbdc77f4a    ...
3          0
4  ee6a295187ba21  6604ce20a1d230    ...
4          0

[5 rows x 28 columns]
-----------Information-----------
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1934174 entries, 0 to 1934173
Data columns (total 28 columns):
Id                object
groupId           object
matchId           object
assists           int64
boosts            int64
damageDealt       float64
DBNOs             int64
headshotKills     int64
heals             int64
killPlace         int64
killPoints        int64
kills             int64
killStreaks       int64
longestKill       float64
matchDuration     int64
matchType         object
maxPlace          int64
numGroups         int64
rankPoints        int64
revives           int64
rideDistance      float64
roadKills         int64
swimDistance      float64
teamKills         int64
vehicleDestroys   int64
walkDistance      float64
weaponsAcquired   int64
winPoints         int64
dtypes: float64(5), int64(19), object(4)
memory usage: 413.2+ MB
None
-----------Data Types------------
Id                object
groupId           object
matchId           object
assists            int64
boosts             int64
damageDealt       float64
DBNOs              int64
headshotKills      int64
heals              int64
killPlace          int64
killPoints         int64
kills              int64
killStreaks        int64
```

```
KillStreaks          int64
longestKill          float64
matchDuration        int64
matchType            object
maxPlace             int64
numGroups            int64
rankPoints           int64
revives              int64
rideDistance         float64
roadKills            int64
swimDistance         float64
teamKills            int64
vehicleDestroys      int64
walkDistance         float64
weaponsAcquired      int64
winPoints            int64
dtype: object
----------Missing value----------
Id                   0
groupId              0
matchId              0
assists              0
boosts               0
damageDealt          0
DBNOs                0
headshotKills        0
heals                0
killPlace            0
killPoints           0
kills                0
killStreaks          0
longestKill          0
matchDuration        0
matchType            0
maxPlace             0
numGroups            0
rankPoints           0
revives              0
rideDistance         0
roadKills            0
swimDistance         0
teamKills            0
vehicleDestroys      0
walkDistance         0
weaponsAcquired      0
winPoints            0
dtype: int64
----------Null value------------
Id                   0
groupId              0
matchId              0
assists              0
boosts               0
damageDealt          0
DBNOs                0
```

```
headshotKills        0
heals                0
killPlace            0
killPoints           0
kills                0
killStreaks          0
longestKill          0
matchDuration        0
matchType            0
maxPlace             0
numGroups            0
rankPoints           0
revives              0
rideDistance         0
roadKills            0
swimDistance         0
teamKills            0
vehicleDestroys      0
walkDistance         0
weaponsAcquired      0
winPoints            0
dtype: int64
----------Shape of Data----------
(1934174, 28)
----------describe---------------
             assists         boosts     ...
weaponsAcquired     winPoints
count  1.934174e+06  1.934174e+06     ...
1.934174e+06  1.934174e+06
mean   2.299524e-01  1.104360e+00     ...
3.627590e+00  6.113582e+02
std    5.785920e-01  1.713828e+00     ...
2.359042e+00  7.406629e+02
min    0.000000e+00  0.000000e+00     ...
0.000000e+00  0.000000e+00
25%    0.000000e+00  0.000000e+00     ...
2.000000e+00  0.000000e+00
50%    0.000000e+00  0.000000e+00     ...
3.000000e+00  0.000000e+00
75%    0.000000e+00  2.000000e+00     ...
5.000000e+00  1.495000e+03
max    2.700000e+01  2.400000e+01     ...
1.530000e+02  2.000000e+03

[8 rows x 24 columns]
----------tail------------------
                    Id         groupId
...      weaponsAcquired   winPoints
1934169  a316c3a13887d5   80e82180c90951
...                   5         1526
1934170  5312146b27d875   147264a127c56e
...                   3         1496
1934171  fc8818b5b32ad3   7bbb4779ebedd5
...                   3            0
1934172  a0f91e35f8458f   149a506a64c2b1
```

```
...                          4        0
1934173  3696fc9f3a42b2  c770d7feaf020f
...                          0     1551

[5 rows x 28 columns]
```

In [6]:

```python
train = pd.get_dummies(train,columns=['matchType'])
```

In [7]:

```python
train =train.dropna()
```

In [8]:

```python
test = pd.get_dummies(test,columns=['matchType'])
```

In [9]:

```python
y_train =train['winPlacePerc']
x_train =train.drop(['Id','groupId','matchId','winPlacePer
c'],axis=1)
```

In [10]:

```python
X_train = x_train.values
Y_train = y_train.values
```

In [11]:

```python
X_train.shape
```

Out[11]:

```
(4446965, 40)
```

In [12]:

```python
Y_train.shape
```

Out[12]:

```
(4446965,)
```

In [13]:

```python
from keras import models
from keras import layers
from keras import Sequential
from keras.layers import Dense, Dropout, Input
```

```
def build_model():
    # Because we will need to instantiate
    # the same model multiple times,
    # we use a function to construct it.
    model = Sequential()
    model.add(Dense(80,input_dim=X_train.shape[1],activati
on='relu'))
    model.add(Dense(160,activation='relu'))
    model.add(Dense(320,activation='relu'))
    model.add(Dropout(0.1))
    model.add(Dense(160,activation='relu'))
    model.add(Dense(80,activation='relu'))
    model.add(Dense(40,activation='relu'))
    model.add(Dense(20,activation='relu'))
    model.add(Dense(1,activation='sigmoid'))
    model.compile(optimizer='adam', loss='mse', metrics=[
'mae'])
#     model.summary
#     history = model.fit(X_train, y_train, epochs=70,batch
_size=100000)
    return model
```

Using TensorFlow backend.

In [14]:

```
import numpy as np

k = 4
num_val_samples = len(X_train) // k
# num_epochs = 40
# all_scores = []
# for i in tqdm(range(k)):
#     print('processing fold #', i)
#     # Prepare the validation data: data from partition #
 k
#     val_data = X_train[i * num_val_samples: (i + 1) * num
_val_samples]
#     val_targets = Y_train[i * num_val_samples: (i + 1) *
 num_val_samples]

#     # Prepare the training data: data from all other part
itions
#     partial_train_data = np.concatenate([X_train[:i * num
_val_samples],X_train[(i + 1) * num_val_samples:]],axis=0)
#     partial_train_targets = np.concatenate([Y_train[:i *
 num_val_samples],Y_train[(i + 1) * num_val_samples:]],axis
=0)

#     # Build the Keras model (already compiled)
#     model = build_model()
#     # Train the model (in silent mode, verbose=0)
#     model.fit(partial_train_data, partial_train_targets,
#               epochs=num_epochs, batch_size=100000, verbo
```

```
se=2)
#      # Evaluate the model on the validation data
#      val_mse, val_mae = model.evaluate(val_data, val_targe
ts, verbose=2)
#      all_scores.append(val_mae)
```

In [15]:

```python
# all_scores
```

In [16]:

```python
# np.mean(all_scores)
```

In [17]:

```python
from keras import backend as K

# Some memory clean-up
K.clear_session()
```

In [18]:

```python
from keras.callbacks import EarlyStopping

# Early-stopping
# early_stopping = EarlyStopping(patience=0, monitor='val_m
ean_absolute_error',verbose=2,)
# callbacks=[early_stopping]

num_epochs = 500
all_mae_histories = []
for i in tqdm(range(k)):
    print('processing fold #', i)
    # Prepare the validation data: data from partition # k
    val_data = X_train[i * num_val_samples: (i + 1) * num_
val_samples]
    val_targets = Y_train[i * num_val_samples: (i + 1) * n
um_val_samples]

    # Prepare the training data: data from all other partit
ions
    partial_train_data = np.concatenate([X_train[:i * num_
val_samples],X_train[(i + 1) * num_val_samples:]],axis=0)
    partial_train_targets = np.concatenate([Y_train[:i * n
um_val_samples],Y_train[(i + 1) * num_val_samples:]],axis=
0)

    # Build the Keras model (already compiled)
    model = build_model()
    # Train the model (in silent mode, verbose=0)
    history = model.fit(partial_train_data, partial_train_
targets,validation_data=(val_data, val_targets),epochs=num
```

```
_epochs, batch_size=10000, verbose=2)
    mae_history = history.history['val_mean_absolute_erro
r']
    all_mae_histories.append(mae_history)
```

```
  0%|          | 0/4 [00:00<?, ?it/s]
```

```
processing fold # 0
Train on 3335224 samples, validate on 1111741
samples
Epoch 1/500
 - 17s - loss: 0.1012 - mean_absolute_error:
0.2554 - val_loss: 0.0946 - val_mean_absolute
_error: 0.2478
Epoch 2/500
 - 16s - loss: 0.0239 - mean_absolute_error:
0.1095 - val_loss: 0.0147 - val_mean_absolute
_error: 0.0869
Epoch 3/500
 - 15s - loss: 0.0139 - mean_absolute_error:
0.0850 - val_loss: 0.0124 - val_mean_absolute
_error: 0.0794
Epoch 4/500
 - 15s - loss: 0.0126 - mean_absolute_error:
0.0808 - val_loss: 0.0118 - val_mean_absolute
_error: 0.0777
Epoch 5/500
 - 15s - loss: 0.0117 - mean_absolute_error:
0.0776 - val_loss: 0.0110 - val_mean_absolute
_error: 0.0759
Epoch 6/500
 - 15s - loss: 0.0109 - mean_absolute_error:
0.0750 - val_loss: 0.0100 - val_mean_absolute
_error: 0.0716
Epoch 7/500
 - 15s - loss: 0.0103 - mean_absolute_error:
0.0726 - val_loss: 0.0097 - val_mean_absolute
_error: 0.0707
Epoch 8/500
 - 15s - loss: 0.0099 - mean_absolute_error:
0.0714 - val_loss: 0.0107 - val_mean_absolute
_error: 0.0777
Epoch 9/500
 - 15s - loss: 0.0097 - mean_absolute_error:
0.0705 - val_loss: 0.0103 - val_mean_absolute
_error: 0.0724
Epoch 10/500
 - 15s - loss: 0.0094 - mean_absolute_error:
0.0694 - val_loss: 0.0093 - val_mean_absolute
_error: 0.0693
Epoch 11/500
 - 15s - loss: 0.0093 - mean_absolute_error:
0.0691 - val_loss: 0.0094 - val_mean_absolute
_error: 0.0709
```

```
Epoch 12/500
 - 15s - loss: 0.0092 - mean_absolute_error:
0.0686 - val_loss: 0.0089 - val_mean_absolute
_error: 0.0684
Epoch 13/500
 - 15s - loss: 0.0090 - mean_absolute_error:
0.0681 - val_loss: 0.0088 - val_mean_absolute
_error: 0.0683
Epoch 14/500
 - 16s - loss: 0.0089 - mean_absolute_error:
0.0679 - val_loss: 0.0084 - val_mean_absolute
_error: 0.0664
Epoch 15/500
 - 15s - loss: 0.0087 - mean_absolute_error:
0.0672 - val_loss: 0.0084 - val_mean_absolute
_error: 0.0665
Epoch 16/500
 - 15s - loss: 0.0086 - mean_absolute_error:
0.0668 - val_loss: 0.0082 - val_mean_absolute
_error: 0.0660
Epoch 17/500
 - 15s - loss: 0.0085 - mean_absolute_error:
0.0665 - val_loss: 0.0086 - val_mean_absolute
_error: 0.0671
Epoch 18/500
 - 15s - loss: 0.0085 - mean_absolute_error:
0.0663 - val_loss: 0.0081 - val_mean_absolute
_error: 0.0655
Epoch 19/500
 - 15s - loss: 0.0083 - mean_absolute_error:
0.0656 - val_loss: 0.0088 - val_mean_absolute
_error: 0.0680
Epoch 20/500
 - 15s - loss: 0.0083 - mean_absolute_error:
0.0656 - val_loss: 0.0081 - val_mean_absolute
_error: 0.0651
Epoch 21/500
 - 16s - loss: 0.0081 - mean_absolute_error:
0.0651 - val_loss: 0.0080 - val_mean_absolute
_error: 0.0658
Epoch 22/500
 - 15s - loss: 0.0081 - mean_absolute_error:
0.0649 - val_loss: 0.0079 - val_mean_absolute
_error: 0.0639
Epoch 23/500
 - 15s - loss: 0.0079 - mean_absolute_error:
0.0642 - val_loss: 0.0077 - val_mean_absolute
_error: 0.0643
Epoch 24/500
 - 16s - loss: 0.0078 - mean_absolute_error:
0.0638 - val_loss: 0.0077 - val_mean_absolute
_error: 0.0646
Epoch 25/500
 - 15s - loss: 0.0077 - mean_absolute_error:
0.0634 - val_loss: 0.0075 - val_mean_absolute
```

```
0.0034   val_loss: 0.0073   val_mean_absolute
_error: 0.0629
Epoch 26/500
 - 16s - loss: 0.0077 - mean_absolute_error:
0.0634 - val_loss: 0.0080 - val_mean_absolute
_error: 0.0652
Epoch 27/500
 - 15s - loss: 0.0077 - mean_absolute_error:
0.0635 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0634
Epoch 28/500
 - 15s - loss: 0.0075 - mean_absolute_error:
0.0625 - val_loss: 0.0084 - val_mean_absolute
_error: 0.0685
Epoch 29/500
 - 15s - loss: 0.0076 - mean_absolute_error:
0.0628 - val_loss: 0.0086 - val_mean_absolute
_error: 0.0709
Epoch 30/500
 - 15s - loss: 0.0075 - mean_absolute_error:
0.0625 - val_loss: 0.0078 - val_mean_absolute
_error: 0.0639
Epoch 31/500
 - 15s - loss: 0.0074 - mean_absolute_error:
0.0621 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0626
Epoch 32/500
 - 16s - loss: 0.0074 - mean_absolute_error:
0.0619 - val_loss: 0.0076 - val_mean_absolute
_error: 0.0648
Epoch 33/500
 - 15s - loss: 0.0074 - mean_absolute_error:
0.0619 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0615
Epoch 34/500
 - 16s - loss: 0.0074 - mean_absolute_error:
0.0619 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0620
Epoch 35/500
 - 15s - loss: 0.0072 - mean_absolute_error:
0.0613 - val_loss: 0.0084 - val_mean_absolute
_error: 0.0699
Epoch 36/500
 - 15s - loss: 0.0072 - mean_absolute_error:
0.0613 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0621
Epoch 37/500
 - 15s - loss: 0.0072 - mean_absolute_error:
0.0610 - val_loss: 0.0081 - val_mean_absolute
_error: 0.0682
Epoch 38/500
 - 15s - loss: 0.0072 - mean_absolute_error:
0.0610 - val_loss: 0.0079 - val_mean_absolute
_error: 0.0670
Epoch 39/500
```

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 - 15s - loss: 0.0071 - mean_absolute_error:
0.0608 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0626
Epoch 40/500
 - 16s - loss: 0.0072 - mean_absolute_error:
0.0609 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0633
Epoch 41/500
 - 15s - loss: 0.0071 - mean_absolute_error:
0.0606 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0613
Epoch 42/500
 - 15s - loss: 0.0071 - mean_absolute_error:
0.0605 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0623
Epoch 43/500
 - 16s - loss: 0.0070 - mean_absolute_error:
0.0601 - val_loss: 0.0077 - val_mean_absolute
_error: 0.0649
Epoch 44/500
 - 15s - loss: 0.0070 - mean_absolute_error:
0.0603 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0623
Epoch 45/500
 - 16s - loss: 0.0069 - mean_absolute_error:
0.0597 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0608
Epoch 46/500
 - 15s - loss: 0.0070 - mean_absolute_error:
0.0602 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0630
Epoch 47/500
 - 15s - loss: 0.0069 - mean_absolute_error:
0.0598 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0632
Epoch 48/500
 - 15s - loss: 0.0069 - mean_absolute_error:
0.0597 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0640
Epoch 49/500
 - 15s - loss: 0.0069 - mean_absolute_error:
0.0597 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0641
Epoch 50/500
 - 15s - loss: 0.0069 - mean_absolute_error:
0.0597 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0634
Epoch 51/500
 - 15s - loss: 0.0069 - mean_absolute_error:
0.0595 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0614
Epoch 52/500
 - 16s - loss: 0.0069 - mean_absolute_error:
0.0596 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0615
```

```
Epoch 53/500
 - 15s - loss: 0.0069 - mean_absolute_error:
0.0595 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0597
Epoch 54/500
 - 16s - loss: 0.0068 - mean_absolute_error:
0.0592 - val_loss: 0.0077 - val_mean_absolute
_error: 0.0664
Epoch 55/500
 - 15s - loss: 0.0068 - mean_absolute_error:
0.0592 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0643
Epoch 56/500
 - 16s - loss: 0.0068 - mean_absolute_error:
0.0591 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0626
Epoch 57/500
 - 15s - loss: 0.0068 - mean_absolute_error:
0.0592 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0630
Epoch 58/500
 - 15s - loss: 0.0068 - mean_absolute_error:
0.0590 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0623
Epoch 59/500
 - 15s - loss: 0.0068 - mean_absolute_error:
0.0591 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0635
Epoch 60/500
 - 17s - loss: 0.0068 - mean_absolute_error:
0.0591 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0629
Epoch 61/500
 - 17s - loss: 0.0068 - mean_absolute_error:
0.0590 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0644
Epoch 62/500
 - 17s - loss: 0.0067 - mean_absolute_error:
0.0588 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0622
Epoch 63/500
 - 17s - loss: 0.0067 - mean_absolute_error:
0.0590 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0634
Epoch 64/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0588 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0622
Epoch 65/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0586 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0639
Epoch 66/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0589 - val_loss: 0.0074 - val_mean_absolute
```

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0.0589 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0657
Epoch 67/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0586 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0612
Epoch 68/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0585 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0601
Epoch 69/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0586 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0637
Epoch 70/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0584 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0613
Epoch 71/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0585 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 72/500
 - 16s - loss: 0.0067 - mean_absolute_error:
0.0585 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0611
Epoch 73/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0584 - val_loss: 0.0075 - val_mean_absolute
_error: 0.0653
Epoch 74/500
 - 16s - loss: 0.0066 - mean_absolute_error:
0.0584 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0629
Epoch 75/500
 - 16s - loss: 0.0066 - mean_absolute_error:
0.0584 - val_loss: 0.0076 - val_mean_absolute
_error: 0.0658
Epoch 76/500
 - 16s - loss: 0.0066 - mean_absolute_error:
0.0584 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0631
Epoch 77/500
 - 16s - loss: 0.0066 - mean_absolute_error:
0.0584 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0634
Epoch 78/500
 - 16s - loss: 0.0066 - mean_absolute_error:
0.0583 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0621
Epoch 79/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0583 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0648
Epoch 80/500
```

```
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0580 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0644
Epoch 81/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0582 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 82/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0581 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0647
Epoch 83/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0580 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0619
Epoch 84/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0582 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 85/500
 - 16s - loss: 0.0066 - mean_absolute_error:
0.0584 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 86/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0581 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 87/500
 - 16s - loss: 0.0066 - mean_absolute_error:
0.0581 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0655
Epoch 88/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 89/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0580 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0623
Epoch 90/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0582 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 91/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0604
Epoch 92/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 93/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0584 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
```

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Epoch 94/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 95/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0578 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 96/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0578 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 97/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0578 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0592
Epoch 98/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 99/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0578 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 100/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0612
Epoch 101/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0577 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 102/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0577 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0612
Epoch 103/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0578 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0632
Epoch 104/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0578 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 105/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0577 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0610
Epoch 106/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0577 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 107/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0577 - val_loss: 0.0067 - val_mean_absolute
```

```
0.0577 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0594
Epoch 108/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0576 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0641
Epoch 109/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0577 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0629
Epoch 110/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0578 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 111/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0577 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 112/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0613
Epoch 113/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0622
Epoch 114/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 115/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 116/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0577 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 117/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0624
Epoch 118/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 119/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0576 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0623
Epoch 120/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 121/500
```

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 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 122/500
 - 16s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0630
Epoch 123/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0576 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 124/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0576 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0599
Epoch 125/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0604
Epoch 126/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0596
Epoch 127/500
 - 16s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0622
Epoch 128/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0595
Epoch 129/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 130/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0634
Epoch 131/500
 - 16s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0599
Epoch 132/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 133/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0614
Epoch 134/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0600
```

```
Epoch 135/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 136/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0607
Epoch 137/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 138/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0616
Epoch 139/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 140/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 141/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0598
Epoch 142/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0623
Epoch 143/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0591
Epoch 144/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 145/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0605
Epoch 146/500
 - 16s - loss: 0.0064 - mean_absolute_error:
0.0572 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 147/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0572 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 148/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0068 - val_mean_absolute
```

```
0.0573 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 149/500
 - 16s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0613
Epoch 150/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0617
Epoch 151/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0065 - val_mean_absolute
_error: 0.0586
Epoch 152/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 153/500
 - 16s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0622
Epoch 154/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0617
Epoch 155/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 156/500
 - 16s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 157/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0611
Epoch 158/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0611
Epoch 159/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 160/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0610
Epoch 161/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 162/500
```

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 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 163/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 164/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0626
Epoch 165/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 166/500
 - 16s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 167/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 168/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 169/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 170/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 171/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 172/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0595
Epoch 173/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0622
Epoch 174/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 175/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
```

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Epoch 176/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0626
Epoch 177/500
 - 16s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0596
Epoch 178/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0621
Epoch 179/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0617
Epoch 180/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0611
Epoch 181/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 182/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 183/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 184/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0606
Epoch 185/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 186/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 187/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 188/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0620
Epoch 189/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0066 - val_mean_absolute
```

```
0.0571 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 190/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 191/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 192/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0614
Epoch 193/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 194/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0624
Epoch 195/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0619
Epoch 196/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0596
Epoch 197/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0606
Epoch 198/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0612
Epoch 199/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0605
Epoch 200/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 201/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0636
Epoch 202/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 203/500
```

```
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 204/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0568 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 205/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0611
Epoch 206/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0623
Epoch 207/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 208/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 209/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 210/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0624
Epoch 211/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 212/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0065 - val_mean_absolute
_error: 0.0587
Epoch 213/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 214/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0616
Epoch 215/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 216/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0068 - val_mean_absolute
 error: 0.0605
```

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Epoch 217/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 218/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 219/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0611
Epoch 220/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 221/500
 - 16s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0595
Epoch 222/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 223/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0645
Epoch 224/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0597
Epoch 225/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 226/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 227/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0609
Epoch 228/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0568 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0624
Epoch 229/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0616
Epoch 230/500
 - 15s - loss: 0.0063 - mean_absolute_error:
```

```
0.0568 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 231/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0611
Epoch 232/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0625
Epoch 233/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 234/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 235/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0621
Epoch 236/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 237/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 238/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 239/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0618
Epoch 240/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 241/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 242/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 243/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 244/500
```

```
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 245/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0611
Epoch 246/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 247/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 248/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0065 - val_mean_absolute
_error: 0.0582
Epoch 249/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 250/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 251/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 252/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 253/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0586
Epoch 254/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 255/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 256/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 257/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0071 - val_mean_absolute
 error: 0.0625
```

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Epoch 258/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0610
Epoch 259/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 260/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0619
Epoch 261/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 262/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 263/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0628
Epoch 264/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0620
Epoch 265/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0601
Epoch 266/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 267/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0610
Epoch 268/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 269/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 270/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 271/500
 - 15s - loss: 0.0062 - mean_absolute_error:
```

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0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 272/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 273/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 274/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 275/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 276/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 277/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0612
Epoch 278/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0595
Epoch 279/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 280/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 281/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 282/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 283/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 284/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 285/500
```

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 - 16s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 286/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 287/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0613
Epoch 288/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0611
Epoch 289/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 290/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0595
Epoch 291/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0621
Epoch 292/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 293/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 294/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 295/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0622
Epoch 296/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 297/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0615
Epoch 298/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
```

```
_error: 0.0009
Epoch 299/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 300/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 301/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0604
Epoch 302/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0611
Epoch 303/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0611
Epoch 304/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0616
Epoch 305/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 306/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 307/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 308/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 309/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0629
Epoch 310/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 311/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 312/500
 - 15s - loss: 0.0062 - mean_absolute_error:
```

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0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0604
Epoch 313/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 314/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 315/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 316/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0622
Epoch 317/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 318/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0630
Epoch 319/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0604
Epoch 320/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 321/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0564 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0612
Epoch 322/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0612
Epoch 323/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 324/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 325/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 326/500
```

```
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 327/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 328/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 329/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0611
Epoch 330/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 331/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 332/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 333/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 334/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0638
Epoch 335/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0065 - val_mean_absolute
_error: 0.0585
Epoch 336/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0599
Epoch 337/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 338/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 339/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0612
```

```
_error: 0.0012
Epoch 340/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 341/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0613
Epoch 342/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 343/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0611
Epoch 344/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0604
Epoch 345/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 346/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 347/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0616
Epoch 348/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 349/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 350/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 351/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 352/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 353/500
 - 15s - loss: 0.0062 - mean_absolute_error:
```

```
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 354/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 355/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0583
Epoch 356/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0601
Epoch 357/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 358/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0611
Epoch 359/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 360/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0646
Epoch 361/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 362/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0604
Epoch 363/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 364/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 365/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0596
Epoch 366/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 367/500
```

```
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 368/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 369/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 370/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 371/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0585
Epoch 372/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0615
Epoch 373/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0625
Epoch 374/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0610
Epoch 375/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 376/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0586
Epoch 377/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 378/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0610
Epoch 379/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0611
Epoch 380/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
 error: 0.0598
```

```
_error: 0.0598
Epoch 381/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 382/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 383/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0610
Epoch 384/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 385/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 386/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 387/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 388/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 389/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 390/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0601
Epoch 391/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 392/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0611
Epoch 393/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0600
Epoch 394/500
 - 15s - loss: 0.0061 - mean_absolute_error:
```

```
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 395/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 396/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 397/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0610
Epoch 398/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 399/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0611
Epoch 400/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 401/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 402/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0619
Epoch 403/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0590
Epoch 404/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 405/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 406/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 407/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 408/500
```

```
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 409/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 410/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 411/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 412/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 413/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0585
Epoch 414/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 415/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0586
Epoch 416/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 417/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 418/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 419/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 420/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 421/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
```

```
_error: 0.0587
Epoch 422/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 423/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 424/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 425/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 426/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 427/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 428/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 429/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0621
Epoch 430/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0601
Epoch 431/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 432/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 433/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 434/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 435/500
 - 15s - loss: 0.0061 - mean_absolute_error:
```

```
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 436/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 437/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0629
Epoch 438/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0611
Epoch 439/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0621
Epoch 440/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 441/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 442/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0618
Epoch 443/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 444/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 445/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 446/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 447/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 448/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0595
Epoch 449/500
```

```
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 450/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 451/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0615
Epoch 452/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 453/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0594
Epoch 454/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 455/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0607
Epoch 456/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 457/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0610
Epoch 458/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 459/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 460/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0617
Epoch 461/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 462/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0616
```

```
_error: 0.0616
Epoch 463/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 464/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 465/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0609
Epoch 466/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 467/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 468/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 469/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 470/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 471/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0613
Epoch 472/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0601
Epoch 473/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 474/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 475/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 476/500
 - 15s - loss: 0.0061 - mean_absolute_error:
```

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0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 477/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0620
Epoch 478/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 479/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 480/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 481/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0625
Epoch 482/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 483/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 484/500
 - 16s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 485/500
 - 17s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 486/500
 - 16s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 487/500
 - 17s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 488/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 489/500
 - 17s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 490/500
```

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 - 19s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0613
Epoch 491/500
 - 16s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0613
Epoch 492/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0612
Epoch 493/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 494/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 495/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0610
Epoch 496/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 497/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 498/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0620
Epoch 499/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 500/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0596


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67s/it]


processing fold # 1
Train on 3335224 samples, validate on 1111741
samples
Epoch 1/500
 - 16s - loss: 0.0508 - mean_absolute_error:
0.1608 - val_loss: 0.0161 - val_mean_absolute
_error: 0.0922
```

```
_error: 0.0932
Epoch 2/500
 - 15s - loss: 0.0147 - mean_absolute_error:
0.0875 - val_loss: 0.0133 - val_mean_absolute
_error: 0.0841
Epoch 3/500
 - 15s - loss: 0.0127 - mean_absolute_error:
0.0806 - val_loss: 0.0117 - val_mean_absolute
_error: 0.0768
Epoch 4/500
 - 15s - loss: 0.0118 - mean_absolute_error:
0.0778 - val_loss: 0.0116 - val_mean_absolute
_error: 0.0784
Epoch 5/500
 - 15s - loss: 0.0108 - mean_absolute_error:
0.0744 - val_loss: 0.0101 - val_mean_absolute
_error: 0.0722
Epoch 6/500
 - 15s - loss: 0.0102 - mean_absolute_error:
0.0723 - val_loss: 0.0097 - val_mean_absolute
_error: 0.0707
Epoch 7/500
 - 15s - loss: 0.0098 - mean_absolute_error:
0.0707 - val_loss: 0.0094 - val_mean_absolute
_error: 0.0690
Epoch 8/500
 - 15s - loss: 0.0096 - mean_absolute_error:
0.0703 - val_loss: 0.0091 - val_mean_absolute
_error: 0.0678
Epoch 9/500
 - 15s - loss: 0.0094 - mean_absolute_error:
0.0693 - val_loss: 0.0115 - val_mean_absolute
_error: 0.0776
Epoch 10/500
 - 15s - loss: 0.0093 - mean_absolute_error:
0.0691 - val_loss: 0.0089 - val_mean_absolute
_error: 0.0678
Epoch 11/500
 - 15s - loss: 0.0091 - mean_absolute_error:
0.0685 - val_loss: 0.0087 - val_mean_absolute
_error: 0.0675
Epoch 12/500
 - 15s - loss: 0.0089 - mean_absolute_error:
0.0678 - val_loss: 0.0090 - val_mean_absolute
_error: 0.0689
Epoch 13/500
 - 15s - loss: 0.0088 - mean_absolute_error:
0.0675 - val_loss: 0.0086 - val_mean_absolute
_error: 0.0678
Epoch 14/500
 - 15s - loss: 0.0087 - mean_absolute_error:
0.0671 - val_loss: 0.0087 - val_mean_absolute
_error: 0.0681
Epoch 15/500
 - 15s - loss: 0.0086 - mean_absolute_error:
```

```
0.0666 - val_loss: 0.0081 - val_mean_absolute
_error: 0.0653
Epoch 16/500
 - 15s - loss: 0.0085 - mean_absolute_error:
0.0665 - val_loss: 0.0090 - val_mean_absolute
_error: 0.0707
Epoch 17/500
 - 15s - loss: 0.0085 - mean_absolute_error:
0.0663 - val_loss: 0.0084 - val_mean_absolute
_error: 0.0656
Epoch 18/500
 - 15s - loss: 0.0082 - mean_absolute_error:
0.0653 - val_loss: 0.0087 - val_mean_absolute
_error: 0.0695
Epoch 19/500
 - 15s - loss: 0.0081 - mean_absolute_error:
0.0650 - val_loss: 0.0085 - val_mean_absolute
_error: 0.0676
Epoch 20/500
 - 15s - loss: 0.0081 - mean_absolute_error:
0.0649 - val_loss: 0.0076 - val_mean_absolute
_error: 0.0630
Epoch 21/500
 - 15s - loss: 0.0080 - mean_absolute_error:
0.0645 - val_loss: 0.0084 - val_mean_absolute
_error: 0.0678
Epoch 22/500
 - 15s - loss: 0.0079 - mean_absolute_error:
0.0641 - val_loss: 0.0087 - val_mean_absolute
_error: 0.0706
Epoch 23/500
 - 15s - loss: 0.0077 - mean_absolute_error:
0.0634 - val_loss: 0.0075 - val_mean_absolute
_error: 0.0635
Epoch 24/500
 - 15s - loss: 0.0078 - mean_absolute_error:
0.0638 - val_loss: 0.0075 - val_mean_absolute
_error: 0.0636
Epoch 25/500
 - 15s - loss: 0.0077 - mean_absolute_error:
0.0633 - val_loss: 0.0075 - val_mean_absolute
_error: 0.0635
Epoch 26/500
 - 15s - loss: 0.0077 - mean_absolute_error:
0.0634 - val_loss: 0.0075 - val_mean_absolute
_error: 0.0628
Epoch 27/500
 - 15s - loss: 0.0075 - mean_absolute_error:
0.0625 - val_loss: 0.0077 - val_mean_absolute
_error: 0.0638
Epoch 28/500
 - 15s - loss: 0.0075 - mean_absolute_error:
0.0626 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0613
Epoch 29/500
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 - 15s - loss: 0.0074 - mean_absolute_error:
0.0623 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0614
Epoch 30/500
 - 15s - loss: 0.0074 - mean_absolute_error:
0.0619 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0615
Epoch 31/500
 - 15s - loss: 0.0073 - mean_absolute_error:
0.0618 - val_loss: 0.0081 - val_mean_absolute
_error: 0.0645
Epoch 32/500
 - 15s - loss: 0.0073 - mean_absolute_error:
0.0616 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0606
Epoch 33/500
 - 15s - loss: 0.0072 - mean_absolute_error:
0.0612 - val_loss: 0.0078 - val_mean_absolute
_error: 0.0632
Epoch 34/500
 - 15s - loss: 0.0073 - mean_absolute_error:
0.0616 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0628
Epoch 35/500
 - 15s - loss: 0.0072 - mean_absolute_error:
0.0610 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0629
Epoch 36/500
 - 15s - loss: 0.0071 - mean_absolute_error:
0.0609 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0602
Epoch 37/500
 - 15s - loss: 0.0071 - mean_absolute_error:
0.0608 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0606
Epoch 38/500
 - 15s - loss: 0.0070 - mean_absolute_error:
0.0605 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0623
Epoch 39/500
 - 15s - loss: 0.0070 - mean_absolute_error:
0.0605 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0605
Epoch 40/500
 - 15s - loss: 0.0070 - mean_absolute_error:
0.0603 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0605
Epoch 41/500
 - 15s - loss: 0.0070 - mean_absolute_error:
0.0604 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0617
Epoch 42/500
 - 15s - loss: 0.0070 - mean_absolute_error:
0.0601 - val_loss: 0.0080 - val_mean_absolute
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_error: 0.0666
Epoch 43/500
 - 15s - loss: 0.0070 - mean_absolute_error:
0.0601 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0633
Epoch 44/500
 - 15s - loss: 0.0070 - mean_absolute_error:
0.0601 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0611
Epoch 45/500
 - 15s - loss: 0.0069 - mean_absolute_error:
0.0598 - val_loss: 0.0079 - val_mean_absolute
_error: 0.0668
Epoch 46/500
 - 15s - loss: 0.0069 - mean_absolute_error:
0.0598 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 47/500
 - 15s - loss: 0.0069 - mean_absolute_error:
0.0597 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0630
Epoch 48/500
 - 15s - loss: 0.0068 - mean_absolute_error:
0.0594 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0597
Epoch 49/500
 - 15s - loss: 0.0068 - mean_absolute_error:
0.0592 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0612
Epoch 50/500
 - 15s - loss: 0.0068 - mean_absolute_error:
0.0593 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 51/500
 - 15s - loss: 0.0068 - mean_absolute_error:
0.0594 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0599
Epoch 52/500
 - 15s - loss: 0.0068 - mean_absolute_error:
0.0594 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0600
Epoch 53/500
 - 15s - loss: 0.0068 - mean_absolute_error:
0.0591 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0598
Epoch 54/500
 - 15s - loss: 0.0068 - mean_absolute_error:
0.0595 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0597
Epoch 55/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0587 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 56/500
 - 15s - loss: 0.0067 - mean_absolute_error:
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0.0591 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0616
Epoch 57/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0589 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0608
Epoch 58/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0589 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0599
Epoch 59/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0587 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0624
Epoch 60/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0587 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0590
Epoch 61/500
 - 16s - loss: 0.0067 - mean_absolute_error:
0.0586 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0641
Epoch 62/500
 - 16s - loss: 0.0067 - mean_absolute_error:
0.0589 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 63/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0588 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0611
Epoch 64/500
 - 16s - loss: 0.0067 - mean_absolute_error:
0.0586 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0588
Epoch 65/500
 - 16s - loss: 0.0066 - mean_absolute_error:
0.0583 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0597
Epoch 66/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0586 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 67/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0585 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0602
Epoch 68/500
 - 16s - loss: 0.0066 - mean_absolute_error:
0.0584 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0623
Epoch 69/500
 - 16s - loss: 0.0067 - mean_absolute_error:
0.0588 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0607
Epoch 70/500
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 - 15s - loss: 0.0066 - mean_absolute_error:
0.0583 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0623
Epoch 71/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0582 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0582
Epoch 72/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0583 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0594
Epoch 73/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0583 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0627
Epoch 74/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0582 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 75/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0583 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0599
Epoch 76/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0582 - val_loss: 0.0075 - val_mean_absolute
_error: 0.0650
Epoch 77/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0582 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 78/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0581 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 79/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0581 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 80/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0580 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 81/500
 - 15s - loss: 0.0067 - mean_absolute_error:
0.0589 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 82/500
 - 15s - loss: 0.0066 - mean_absolute_error:
0.0583 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 83/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0069 - val_mean_absolute
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_error: 0.0613
Epoch 84/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0580 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0607
Epoch 85/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 86/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0578 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0627
Epoch 87/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0577 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0633
Epoch 88/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0580 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 89/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 90/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0624
Epoch 91/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0578 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0601
Epoch 92/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0577 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 93/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0577 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0613
Epoch 94/500
 - 15s - loss: 0.0065 - mean_absolute_error:
0.0579 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0594
Epoch 95/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0578 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0600
Epoch 96/500
 - 17s - loss: 0.0064 - mean_absolute_error:
0.0576 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 97/500
 - 17s - loss: 0.0064 - mean_absolute_error:
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0.0577 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0641
Epoch 98/500
 - 17s - loss: 0.0065 - mean_absolute_error:
0.0580 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0632
Epoch 99/500
 - 17s - loss: 0.0065 - mean_absolute_error:
0.0577 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 100/500
 - 16s - loss: 0.0065 - mean_absolute_error:
0.0578 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 101/500
 - 16s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0591
Epoch 102/500
 - 16s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0633
Epoch 103/500
 - 17s - loss: 0.0064 - mean_absolute_error:
0.0576 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0591
Epoch 104/500
 - 17s - loss: 0.0064 - mean_absolute_error:
0.0576 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 105/500
 - 17s - loss: 0.0064 - mean_absolute_error:
0.0576 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 106/500
 - 17s - loss: 0.0064 - mean_absolute_error:
0.0577 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 107/500
 - 17s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0596
Epoch 108/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0576 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 109/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0576 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 110/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0577 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0622
Epoch 111/500
```

```
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0586
Epoch 112/500
 - 16s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 113/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 114/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0587
Epoch 115/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0588
Epoch 116/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0575 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0589
Epoch 117/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 118/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0586
Epoch 119/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0626
Epoch 120/500
 - 16s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 121/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0628
Epoch 122/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 123/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0590
Epoch 124/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0067 - val_mean_absolute
```

```
_error: 0.0593
Epoch 125/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0573 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 126/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 127/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0623
Epoch 128/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0594
Epoch 129/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 130/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0573 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 131/500
 - 15s - loss: 0.0064 - mean_absolute_error:
0.0574 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0610
Epoch 132/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0590
Epoch 133/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0573 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 134/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0590
Epoch 135/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 136/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0573 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 137/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 138/500
 - 15s - loss: 0.0063 - mean_absolute_error:
```

```
0.0571 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 139/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0065 - val_mean_absolute
_error: 0.0576
Epoch 140/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 141/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0619
Epoch 142/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 143/500
 - 17s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 144/500
 - 19s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0600
Epoch 145/500
 - 21s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 146/500
 - 21s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 147/500
 - 21s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0631
Epoch 148/500
 - 19s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0589
Epoch 149/500
 - 21s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 150/500
 - 21s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0618
Epoch 151/500
 - 21s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 152/500
```

```
Epoch 152/500
 - 20s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0634
Epoch 153/500
 - 21s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0615
Epoch 154/500
 - 20s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0613
Epoch 155/500
 - 22s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0623
Epoch 156/500
 - 21s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0581
Epoch 157/500
 - 17s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0616
Epoch 158/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0572 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 159/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 160/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0571 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 161/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0615
Epoch 162/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 163/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 164/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 165/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0066 - val_mean_absolute
```

```
_error: 0.0591
Epoch 166/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 167/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0591
Epoch 168/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 169/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 170/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 171/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0586
Epoch 172/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 173/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0568 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 174/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 175/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 176/500
 - 15s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 177/500
 - 17s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 178/500
 - 17s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 179/500
 - 17s - loss: 0.0062 - mean_absolute_error:
```

```
0.0569 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 180/500
 - 19s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0604
Epoch 181/500
 - 18s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0621
Epoch 182/500
 - 17s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 183/500
 - 17s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 184/500
 - 17s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0582
Epoch 185/500
 - 17s - loss: 0.0063 - mean_absolute_error:
0.0569 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 186/500
 - 17s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 187/500
 - 17s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0627
Epoch 188/500
 - 17s - loss: 0.0063 - mean_absolute_error:
0.0570 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0591
Epoch 189/500
 - 17s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 190/500
 - 17s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0605
Epoch 191/500
 - 17s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 192/500
 - 17s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 193/500
```

```
Epoch 193/500
 - 17s - loss: 0.0062 - mean_absolute_error:
0.0569 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 194/500
 - 17s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0590
Epoch 195/500
 - 17s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0596
Epoch 196/500
 - 17s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0624
Epoch 197/500
 - 16s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0595
Epoch 198/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0616
Epoch 199/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 200/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0606
Epoch 201/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0609
Epoch 202/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 203/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0568 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 204/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 205/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 206/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0069 - val_mean_absolute
```

```
_error: 0.0612
Epoch 207/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0604
Epoch 208/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0065 - val_mean_absolute
_error: 0.0584
Epoch 209/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 210/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 211/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 212/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 213/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0619
Epoch 214/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 215/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 216/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 217/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0620
Epoch 218/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 219/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 220/500
 - 15s - loss: 0.0062 - mean_absolute_error:
```

```
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0591
Epoch 221/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 222/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 223/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 224/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0610
Epoch 225/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0567 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0597
Epoch 226/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 227/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 228/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0591
Epoch 229/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0592
Epoch 230/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 231/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 232/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0075 - val_mean_absolute
_error: 0.0655
Epoch 233/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 234/500
```

```
Epoch 234/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0600
Epoch 235/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0612
Epoch 236/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 237/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 238/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 239/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 240/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0611
Epoch 241/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 242/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0610
Epoch 243/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 244/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0594
Epoch 245/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 246/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0615
Epoch 247/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0069 - val_mean_absolute
```

```
_error: 0.0617
Epoch 248/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 249/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0607
Epoch 250/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 251/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0591
Epoch 252/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0594
Epoch 253/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0590
Epoch 254/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0565 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 255/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0609
Epoch 256/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0600
Epoch 257/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 258/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 259/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 260/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 261/500
 - 15s - loss: 0.0062 - mean_absolute_error:
```

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0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 262/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 263/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 264/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0565 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0610
Epoch 265/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0566 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 266/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 267/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 268/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0565 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 269/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 270/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 271/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 272/500
 - 15s - loss: 0.0062 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 273/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 274/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0595
Epoch 275/500
```

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Epoch 275/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0565 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 276/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 277/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 278/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 279/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 280/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 281/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 282/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 283/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 284/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0565 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 285/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0586
Epoch 286/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0598
Epoch 287/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 288/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0068 - val_mean_absolute
```

```
_error: 0.0605
Epoch 289/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 290/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0612
Epoch 291/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0586
Epoch 292/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 293/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 294/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0644
Epoch 295/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0586
Epoch 296/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0615
Epoch 297/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0639
Epoch 298/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 299/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 300/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 301/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0585
Epoch 302/500
 - 14s - loss: 0.0061 - mean_absolute_error:
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0.0563 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0634
Epoch 303/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 304/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 305/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 306/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0065 - val_mean_absolute
_error: 0.0585
Epoch 307/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 308/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0611
Epoch 309/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0612
Epoch 310/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0594
Epoch 311/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0564 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0588
Epoch 312/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 313/500
 - 14s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0623
Epoch 314/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0065 - val_mean_absolute
_error: 0.0585
Epoch 315/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 316/500
```

```
Epoch 316/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0615
Epoch 317/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0592
Epoch 318/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0592
Epoch 319/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 320/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 321/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 322/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0599
Epoch 323/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 324/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 325/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 326/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 327/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0620
Epoch 328/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0065 - val_mean_absolute
_error: 0.0582
Epoch 329/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
```

```
_error: 0.0603
Epoch 330/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 331/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 332/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0624
Epoch 333/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 334/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0563 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 335/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 336/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0591
Epoch 337/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 338/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 339/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 340/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0615
Epoch 341/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 342/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 343/500
 - 15s - loss: 0.0061 - mean_absolute_error:
```

```
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 344/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 345/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0600
Epoch 346/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 347/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 348/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0065 - val_mean_absolute
_error: 0.0583
Epoch 349/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0603
Epoch 350/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 351/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0586
Epoch 352/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 353/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 354/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 355/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 356/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0607
```

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Epoch 357/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 358/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0586
Epoch 359/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 360/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 361/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 362/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 363/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
Epoch 364/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0614
Epoch 365/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0562 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0591
Epoch 366/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 367/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0617
Epoch 368/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0584
Epoch 369/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 370/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
```

```
_error: 0.0591
Epoch 371/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0600
Epoch 372/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 373/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0583
Epoch 374/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 375/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 376/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0597
Epoch 377/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0561 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0614
Epoch 378/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 379/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0594
Epoch 380/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 381/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 382/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 383/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0610
Epoch 384/500
 - 15s - loss: 0.0060 - mean_absolute_error:
```

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 0.0560 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0611
Epoch 385/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0610
Epoch 386/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0616
Epoch 387/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 388/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0590
Epoch 389/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0613
Epoch 390/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 391/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0641
Epoch 392/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0585
Epoch 393/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 394/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 395/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0616
Epoch 396/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 397/500
 - 15s - loss: 0.0061 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0593
```

```
Epoch 398/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 399/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 400/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0598
Epoch 401/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0608
Epoch 402/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0601
Epoch 403/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0561 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 404/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 405/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0561 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 406/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0595
Epoch 407/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0598
Epoch 408/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0591
Epoch 409/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0561 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 410/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 411/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
```

```
_error: 0.0595
Epoch 412/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 413/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 414/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0597
Epoch 415/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 416/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0630
Epoch 417/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 418/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 419/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0065 - val_mean_absolute
_error: 0.0579
Epoch 420/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0616
Epoch 421/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0594
Epoch 422/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0609
Epoch 423/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 424/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 425/500
 - 15s - loss: 0.0060 - mean_absolute_error:
```

```
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 426/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0592
Epoch 427/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 428/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0594
Epoch 429/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0633
Epoch 430/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0594
Epoch 431/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 432/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 433/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0601
Epoch 434/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 435/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 436/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0591
Epoch 437/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0589
Epoch 438/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
```

```
Epoch 439/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0607
Epoch 440/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 441/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0615
Epoch 442/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0585
Epoch 443/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 444/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0612
Epoch 445/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0601
Epoch 446/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 447/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0595
Epoch 448/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0560 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0607
Epoch 449/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0622
Epoch 450/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 451/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0583
Epoch 452/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0068 - val_mean_absolute
```

```
_error: 0.0603
Epoch 453/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0586
Epoch 454/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 455/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0590
Epoch 456/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 457/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0591
Epoch 458/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 459/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 460/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0601
Epoch 461/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 462/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0603
Epoch 463/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 464/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0624
Epoch 465/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0600
Epoch 466/500
 - 15s - loss: 0.0060 - mean_absolute_error:
```

```
         0.0559 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0604
Epoch 467/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 468/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 469/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0594
Epoch 470/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0609
Epoch 471/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 472/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 473/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 474/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0619
Epoch 475/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0615
Epoch 476/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0599
Epoch 477/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0590
Epoch 478/500
 - 17s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 479/500
 - 16s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0601
```

```
Epoch 480/500
 - 16s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0616
Epoch 481/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0605
Epoch 482/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0587
Epoch 483/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0589
Epoch 484/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0615
Epoch 485/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 486/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 487/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0605
Epoch 488/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0596
Epoch 489/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0592
Epoch 490/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0602
Epoch 491/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0588
Epoch 492/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 493/500
 - 16s - loss: 0.0060 - mean_absolute_error:
0.0557 - val_loss: 0.0067 - val_mean_absolute
```

```
_error: 0.0596
Epoch 494/500
 - 17s - loss: 0.0060 - mean_absolute_error:
0.0559 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0592
Epoch 495/500
 - 16s - loss: 0.0060 - mean_absolute_error:
0.0557 - val_loss: 0.0069 - val_mean_absolute
_error: 0.0608
Epoch 496/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0602
Epoch 497/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0606
Epoch 498/500
 - 15s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0067 - val_mean_absolute
_error: 0.0593
Epoch 499/500
 - 16s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0066 - val_mean_absolute
_error: 0.0589
Epoch 500/500
 - 16s - loss: 0.0060 - mean_absolute_error:
0.0558 - val_loss: 0.0068 - val_mean_absolute
_error: 0.0598


 50%|██████     | 2/4 [4:14:29<4:14:30, 7635.4
7s/it]


processing fold # 2
Train on 3335224 samples, validate on 1111741
samples
Epoch 1/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4729 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 2/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 3/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 4/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 5/500
 - 16s - loss: 0.3181 - mean_absolute_error:
```

```
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 6/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 7/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 8/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 9/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 10/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 11/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 12/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 13/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 14/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 15/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 16/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 17/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 18/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
```

```
Epoch 19/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 20/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 21/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 22/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 23/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 24/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 25/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 26/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 27/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 28/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 29/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 30/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 31/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 32/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
```

```
_error: 0.4728
Epoch 33/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 34/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 35/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 36/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 37/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 38/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 39/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 40/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 41/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 42/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 43/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 44/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 45/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 46/500
 - 16s - loss: 0.3181 - mean_absolute_error:
```

```
                     loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 47/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 48/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 49/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 50/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 51/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 52/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 53/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 54/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 55/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 56/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 57/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 58/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 59/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
```

```
Epoch 60/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 61/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 62/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 63/500
 - 19s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 64/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 65/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 66/500
 - 19s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 67/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 68/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 69/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 70/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 71/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 72/500
 - 19s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 73/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
```

```
_error: 0.4728
Epoch 74/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 75/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 76/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 77/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 78/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 79/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 80/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 81/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 82/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 83/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 84/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 85/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 86/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 87/500
 - 14s - loss: 0.3181 - mean_absolute_error:
```

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- 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 88/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 89/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 90/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 91/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 92/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 93/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 94/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 95/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 96/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 97/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 98/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 99/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 100/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
```

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Epoch 101/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 102/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 103/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 104/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 105/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 106/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 107/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 108/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 109/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 110/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 111/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 112/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 113/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 114/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
```

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_error: 0.4728
Epoch 115/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 116/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 117/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 118/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 119/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 120/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 121/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 122/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 123/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 124/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 125/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 126/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 127/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 128/500
 - 16s - loss: 0.3181 - mean_absolute_error:
```

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 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 129/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 130/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 131/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 132/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 133/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 134/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 135/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 136/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 137/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 138/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 139/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 140/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 141/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
```

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Epoch 142/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 143/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 144/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 145/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 146/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 147/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 148/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 149/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 150/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 151/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 152/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 153/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 154/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 155/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
```

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_error: 0.4728
Epoch 156/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 157/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 158/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 159/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 160/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 161/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 162/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 163/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 164/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 165/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 166/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 167/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 168/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 169/500
 - 18s - loss: 0.3181 - mean_absolute_error:
```

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 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 170/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 171/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 172/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 173/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 174/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 175/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 176/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 177/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 178/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 179/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 180/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 181/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 182/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
```

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Epoch 183/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 184/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 185/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 186/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 187/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 188/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 189/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 190/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 191/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 192/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 193/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 194/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 195/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 196/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
```

```
_error: 0.4728
Epoch 197/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 198/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 199/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 200/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 201/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 202/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 203/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 204/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 205/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 206/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 207/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 208/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 209/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 210/500
 - 15s - loss: 0.3181 - mean_absolute_error:
```

```
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 211/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 212/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 213/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 214/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 215/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 216/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 217/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 218/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 219/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 220/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 221/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 222/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 223/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
```

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Epoch 224/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 225/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 226/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 227/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 228/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 229/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 230/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 231/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 232/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 233/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 234/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 235/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 236/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 237/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
```

```
_error: 0.4728
Epoch 238/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 239/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 240/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 241/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 242/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 243/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 244/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 245/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 246/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 247/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 248/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 249/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 250/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 251/500
```

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 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 252/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 253/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 254/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 255/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 256/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 257/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 258/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 259/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 260/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 261/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 262/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 263/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 264/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
```

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Epoch 265/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 266/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 267/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 268/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 269/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 270/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 271/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 272/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 273/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 274/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 275/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 276/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 277/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 278/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
```

```
_error: 0.4728
Epoch 279/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 280/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 281/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 282/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 283/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 284/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 285/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 286/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 287/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 288/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 289/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 290/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 291/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 292/500
```

```
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 293/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 294/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 295/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 296/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 297/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 298/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 299/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 300/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 301/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 302/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 303/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 304/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 305/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
```

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Epoch 306/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 307/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 308/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 309/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 310/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 311/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 312/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 313/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 314/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 315/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 316/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 317/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 318/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 319/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
```

```
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 320/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 321/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 322/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 323/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 324/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 325/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 326/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 327/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 328/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 329/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 330/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 331/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 332/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 333/500
```

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 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 334/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 335/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 336/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 337/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 338/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 339/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 340/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 341/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 342/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 343/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 344/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 345/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 346/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
```

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Epoch 347/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 348/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 349/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 350/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 351/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 352/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 353/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 354/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 355/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 356/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 357/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 358/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 359/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 360/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
```

```
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 361/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 362/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 363/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 364/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 365/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 366/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 367/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 368/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 369/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 370/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 371/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 372/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 373/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 374/500
```

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 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 375/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 376/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 377/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 378/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 379/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 380/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 381/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 382/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 383/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 384/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 385/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 386/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 387/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
```

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Epoch 388/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 389/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 390/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 391/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 392/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 393/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 394/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 395/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 396/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 397/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 398/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 399/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 400/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 401/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
```

```
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 402/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 403/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 404/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 405/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 406/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 407/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 408/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 409/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 410/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 411/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 412/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 413/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 414/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 415/500
```

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 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 416/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 417/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 418/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 419/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 420/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 421/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 422/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 423/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 424/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 425/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 426/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 427/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 428/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
```

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Epoch 429/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 430/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 431/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 432/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 433/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 434/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 435/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 436/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 437/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 438/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 439/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 440/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 441/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 442/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
```

```
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 443/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 444/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 445/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 446/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 447/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 448/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 449/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 450/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 451/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 452/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 453/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 454/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 455/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 456/500
```

```
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 457/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 458/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 459/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 460/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 461/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 462/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 463/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 464/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 465/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 466/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 467/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 468/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 469/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
```

```
Epoch 470/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 471/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 472/500
 - 14s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 473/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 474/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 475/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 476/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 477/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 478/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 479/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 480/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 481/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 482/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 483/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
```

```
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 484/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 485/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 486/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 487/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 488/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 489/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 490/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 491/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 492/500
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 493/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 494/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 495/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 496/500
 - 18s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 497/500
```

```
 - 16s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 498/500
 - 15s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 499/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728
Epoch 500/500
 - 17s - loss: 0.3181 - mean_absolute_error:
0.4728 - val_loss: 0.3180 - val_mean_absolute
_error: 0.4728


 75%|████████▌  | 3/4 [6:19:37<2:06:37, 7597.
19s/it]


processing fold # 3
Train on 3335224 samples, validate on 1111741
samples
Epoch 1/500
 - 16s - loss: 0.0576 - mean_absolute_error:
0.1705 - val_loss: 0.0151 - val_mean_absolute
_error: 0.0888
Epoch 2/500
 - 15s - loss: 0.0143 - mean_absolute_error:
0.0865 - val_loss: 0.0128 - val_mean_absolute
_error: 0.0816
Epoch 3/500
 - 15s - loss: 0.0129 - mean_absolute_error:
0.0812 - val_loss: 0.0120 - val_mean_absolute
_error: 0.0780
Epoch 4/500
 - 16s - loss: 0.0120 - mean_absolute_error:
0.0784 - val_loss: 0.0112 - val_mean_absolute
_error: 0.0750
Epoch 5/500
 - 15s - loss: 0.0111 - mean_absolute_error:
0.0754 - val_loss: 0.0104 - val_mean_absolute
_error: 0.0723
Epoch 6/500
 - 15s - loss: 0.0103 - mean_absolute_error:
0.0727 - val_loss: 0.0100 - val_mean_absolute
_error: 0.0719
Epoch 7/500
 - 15s - loss: 0.0099 - mean_absolute_error:
0.0712 - val_loss: 0.0094 - val_mean_absolute
_error: 0.0691
Epoch 8/500
 - 15s - loss: 0.0096 - mean_absolute_error:
0.0700 - val_loss: 0.0091 - val_mean_absolute
_error: 0.0679
```

```
Epoch 9/500
 - 16s - loss: 0.0094 - mean_absolute_error:
0.0692 - val_loss: 0.0089 - val_mean_absolute
_error: 0.0679
Epoch 10/500
 - 15s - loss: 0.0092 - mean_absolute_error:
0.0687 - val_loss: 0.0092 - val_mean_absolute
_error: 0.0706
Epoch 11/500
 - 15s - loss: 0.0090 - mean_absolute_error:
0.0681 - val_loss: 0.0086 - val_mean_absolute
_error: 0.0670
Epoch 12/500
 - 15s - loss: 0.0089 - mean_absolute_error:
0.0677 - val_loss: 0.0086 - val_mean_absolute
_error: 0.0672
Epoch 13/500
 - 16s - loss: 0.0087 - mean_absolute_error:
0.0672 - val_loss: 0.0086 - val_mean_absolute
_error: 0.0665
Epoch 14/500
 - 15s - loss: 0.0085 - mean_absolute_error:
0.0665 - val_loss: 0.0100 - val_mean_absolute
_error: 0.0716
Epoch 15/500
 - 15s - loss: 0.0085 - mean_absolute_error:
0.0663 - val_loss: 0.0083 - val_mean_absolute
_error: 0.0656
Epoch 16/500
 - 15s - loss: 0.0083 - mean_absolute_error:
0.0656 - val_loss: 0.0087 - val_mean_absolute
_error: 0.0694
Epoch 17/500
 - 15s - loss: 0.0082 - mean_absolute_error:
0.0653 - val_loss: 0.0083 - val_mean_absolute
_error: 0.0664
Epoch 18/500
 - 15s - loss: 0.0081 - mean_absolute_error:
0.0649 - val_loss: 0.0086 - val_mean_absolute
_error: 0.0660
Epoch 19/500
 - 15s - loss: 0.0079 - mean_absolute_error:
0.0643 - val_loss: 0.0080 - val_mean_absolute
_error: 0.0661
Epoch 20/500
 - 15s - loss: 0.0078 - mean_absolute_error:
0.0640 - val_loss: 0.0076 - val_mean_absolute
_error: 0.0631
Epoch 21/500
 - 15s - loss: 0.0078 - mean_absolute_error:
0.0637 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0627
Epoch 22/500
 - 15s - loss: 0.0078 - mean_absolute_error:
0.0638 - val_loss: 0.0075 - val_mean_absolute
```

```
0.0638 - val_loss: 0.0075 - val_mean_absolute
_error: 0.0628
Epoch 23/500
 - 15s - loss: 0.0077 - mean_absolute_error:
0.0633 - val_loss: 0.0075 - val_mean_absolute
_error: 0.0632
Epoch 24/500
 - 15s - loss: 0.0075 - mean_absolute_error:
0.0627 - val_loss: 0.0077 - val_mean_absolute
_error: 0.0649
Epoch 25/500
 - 15s - loss: 0.0075 - mean_absolute_error:
0.0624 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0619
Epoch 26/500
 - 15s - loss: 0.0075 - mean_absolute_error:
0.0626 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0616
Epoch 27/500
 - 15s - loss: 0.0074 - mean_absolute_error:
0.0621 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0633
Epoch 28/500
 - 14s - loss: 0.0073 - mean_absolute_error:
0.0617 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0615
Epoch 29/500
 - 16s - loss: 0.0073 - mean_absolute_error:
0.0615 - val_loss: 0.0074 - val_mean_absolute
_error: 0.0631
Epoch 30/500
 - 15s - loss: 0.0072 - mean_absolute_error:
0.0614 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0620
Epoch 31/500
 - 15s - loss: 0.0072 - mean_absolute_error:
0.0613 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0609
Epoch 32/500
 - 15s - loss: 0.0071 - mean_absolute_error:
0.0609 - val_loss: 0.0071 - val_mean_absolute
_error: 0.0612
Epoch 33/500
 - 16s - loss: 0.0071 - mean_absolute_error:
0.0608 - val_loss: 0.0073 - val_mean_absolute
_error: 0.0616
Epoch 34/500
 - 15s - loss: 0.0070 - mean_absolute_error:
0.0605 - val_loss: 0.0070 - val_mean_absolute
_error: 0.0601
Epoch 35/500
 - 15s - loss: 0.0071 - mean_absolute_error:
0.0607 - val_loss: 0.0072 - val_mean_absolute
_error: 0.0627
Epoch 36/500
```

```
   - 15s - loss: 0.0070 - mean_absolute_error:
  0.0603 - val_loss: 0.0071 - val_mean_absolute
  _error: 0.0603
  Epoch 37/500
```

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Show your appreciation with an upvote

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10

Data

Data Sources

⌄ 🏆 PUBG Finish Placement Prediction (Kernels Only)

⊞ sample_submission_V2.csv   1.93m x 2

⊞ test_V2.csv   1.93m x 28

⊞ train_V2.csv   4.45m x 29

PUBG Finish Placement Prediction (Kernels Only)

Can you predict the battle royale finish of PUBG Players?

Last Updated: a year ago

About this Competition

In a PUBG game, up to 100 players start in each match (matchId). Players can be on teams (groupId) which get ranked at the end of the game (winPlacePerc) based on how many other teams are still alive when they are eliminated. In game, players can pick up different munitions, revive downed-but-not-out (knocked) teammates, drive vehicles, swim, run, shoot, and experience all of the consequences -- such as falling too far or running themselves over and eliminating themselves.

You are provided with a large number of anonymized PUBG game stats, formatted so that each row contains one player's post-game stats. The data comes from matches of all types: solos, duos, squads, and custom; there is no guarantee of there being 100 players per match, nor at most 4 player per group.

You must create a model which predicts players' finishing placement based on their final stats, on a scale from 1 (first place) to 0 (last place).

File descriptions

- **train_V2.csv** - the training set
- **test_V2.csv** - the test set
- **sample_submission_V2.csv** - a sample submission file in the correct format

Data fields

New Dataset   New Notebook   Download All   ⤡

Output Files

Output Files

| About this file |

⊞ sample_submission_v1.csv

This file was created from a Kernel, it does not have a description.

⊞ **sample_submission_v1.csv**   ⬇ ⛶

1	Id	winPlacePe rc
2	9329eb41e2 15eb	1.0
3	639bd0dcd7 bda8	1.0
4	63d5c8ef8 dfe91	1.0
5	cf5b81422 591d1	1.0
6	ee6a295187 ba21	1.0
7	3e2539b5d7 8183	1.0
8	d812d2f1d 88a02	1.0
9	a8a377e4d4 3bf8	1.0
10	f18301e30 d47d3	1.0
11	ec7b965ef 978b3	1.0
12	29da9623f 0e316	1.0
13	9a7777f18 68aba	1.0
14	aeded11e3d 6daa	1.0
15	2f42b452c f99f7	1.0
16	8ee93e13e6 7ae9	1.0
17	8e3d9efdb 90cdc	1.0
18	8b20f5f39 95b98	1.0
19	bdc658de5c c405	1.0
20	d9463ae291	1.0

Comments (5)

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Click here to comment...

Juanyangyang · Posted on Version 18 of 41 · a year ago · Options · Reply   ∧ 1

I have a question „why don't you use Onehot Encode after Label Encode on mathType?

> **makogarei** [Kernel Author] · Posted on Version 18 of 41 · a year ago · Options · Reply   ∧ 0
>
> I never thought about that until you mentioned it just now.
> I will try Onehot Encode!

> **Ben Greenwalt** · Posted on Version 23 of 41 · a year ago · Options · Reply   ∧ 1
>
> I tried this with a baseline model and it decreased the accuracy score.

makogarei [Kernel Author] · Posted on Version 2 of 41 · a year ago · Options · Reply   ∧ 0

Please give me some advice

a year ago

This Comment was deleted.

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