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Climate Change: Global Temperature

We study the global temperatures dataset available on:

https://www.kaggle.com/berkeleyearth/climate-change-earth-surface-temperature-data

We focus on the time series 'LandAverageTemperature', which is the monthly global average land temperature in Celsius. We take its yearly averages and only use the data from 1850-2015. Previously, in master.ipynb, we performed some preliminary data analysis. The first difference of this series is stationary. We fitted baseline AR(3) models, using fixed partitioning and rolling forecast.

In this notebook, we create lag features and fit LSTM models on the series, using fixed partitioning and rolling forecast, and compare the model performance with each other, and with the basline AR(3) models.

Preamble

In [1]:
```python
import pandas as pd
# Make the output look better
pd.set_option('display.max_rows', 500)
pd.set_option('display.max_columns', 500)
# pd.set_option('display.width', 1000)
pd.options.mode.chained_assignment = None  # default='warn' # ignores warning about dropping columns inplace


import numpy as np
import seaborn as sn
import matplotlib.pyplot as plt

import os
os.chdir(r'C:\Users\Cedric Yu\Desktop\Works\13_time_series_global_temperatures')

#%% tensorflow

import tensorflow as tf
from tensorflow import keras
from tensorflow.keras import layers
# import tensorflow_addons as tfa # import tfa which contains metrics for regression
# from tensorflow.keras import regularizers
from keras.initializers import glorot_uniform
from tensorflow.random import set_seed
set_seed(0)
np.random.seed(1)
```

load dataset and parse datetime

In [2]:
```python
"""# import GlobalTemperatures dataset and parse datetime column 'dt'"""

from datetime import datetime
def parser(x):
        return datetime.strptime(x, '%Y-%m-%d')

global_temperatures = pd.read_csv('GlobalTemperatures.csv', header = [0], parse_dates= [0], date_parser=parser)
```

In [3]:
```python
temperature = global_temperatures[global_temperatures['dt'] > pd.Timestamp(1849,12,31)]
temperature_yearly = temperature[['dt', 'LandAverageTemperature']].groupby(pd.Grouper(key='dt', freq='1Y')).mean(
```

In [4]:
```python
"""# first difference"""
temperature_yearly_diff = temperature_yearly[['LandAverageTemperature']].diff().iloc[1:]
```

In [5]:
```python
temperature_yearly_diff.head()
```

Out[5]:

	LandAverageTemperature
dt	
1851-12-31	0.277917
1852-12-31	-0.078417
1853-12-31	-0.058333
1854-12-31	0.168667
1855-12-31	-0.099750

Lag features

Create lag 1-4 features

In [127…
```
temperature_yearly.head()
```

Out[127…

	LandAverageTemperature	lag_1	lag_2	lag_3	lag_4
dt					
1854-12-31	8.210500	8.041833	8.100167	8.178583	7.900667
1855-12-31	8.110750	8.210500	8.041833	8.100167	8.178583
1856-12-31	7.995917	8.110750	8.210500	8.041833	8.100167
1857-12-31	7.758167	7.995917	8.110750	8.210500	8.041833
1858-12-31	8.100250	7.758167	7.995917	8.110750	8.210500

In [6]:
```
temperature_yearly['lag_1'] = temperature_yearly.shift(1)
```

In [7]:
```
temperature_yearly['lag_2'] = temperature_yearly['LandAverageTemperature'].shift(2)
temperature_yearly['lag_3'] = temperature_yearly['LandAverageTemperature'].shift(3)
temperature_yearly['lag_4'] = temperature_yearly['LandAverageTemperature'].shift(4)
```

In [8]:
```
temperature_yearly = temperature_yearly.dropna()
```

In [126…
```
temperature_yearly.head()
```

Out[126…

	LandAverageTemperature	lag_1	lag_2	lag_3	lag_4
dt					
1854-12-31	8.210500	8.041833	8.100167	8.178583	7.900667
1855-12-31	8.110750	8.210500	8.041833	8.100167	8.178583
1856-12-31	7.995917	8.110750	8.210500	8.041833	8.100167
1857-12-31	7.758167	7.995917	8.110750	8.210500	8.041833
1858-12-31	8.100250	7.758167	7.995917	8.110750	8.210500

In [13]:
```
temperature_yearly_diff['lag_1'] = temperature_yearly_diff.shift(1)
```

In [15]:
```
temperature_yearly_diff['lag_2'] = temperature_yearly_diff['LandAverageTemperature'].shift(2)
temperature_yearly_diff['lag_3'] = temperature_yearly_diff['LandAverageTemperature'].shift(3)
temperature_yearly_diff['lag_4'] = temperature_yearly_diff['LandAverageTemperature'].shift(4)
```

In [17]:
```
temperature_yearly_diff = temperature_yearly_diff.dropna()
```

In [125…   `temperature_yearly_diff.head()`

Out[125…

dt	LandAverageTemperature	lag_1	lag_2	lag_3	lag_4
1855-12-31	-0.099750	0.168667	-0.058333	-0.078417	0.277917
1856-12-31	-0.114833	-0.099750	0.168667	-0.058333	-0.078417
1857-12-31	-0.237750	-0.114833	-0.099750	0.168667	-0.058333
1858-12-31	0.342083	-0.237750	-0.114833	-0.099750	0.168667
1859-12-31	0.151750	0.342083	-0.237750	-0.114833	-0.099750

In [10]:
```python
print(temperature_yearly.index[0])
print(temperature_yearly.index[-1])
print(len(temperature_yearly))
```

```
1854-12-31 00:00:00
2015-12-31 00:00:00
162
```

In [11]:   `temperature_yearly.index[132]`

Out[11]:   `Timestamp('1986-12-31 00:00:00', freq='A-DEC')`

In [19]:
```python
print(temperature_yearly_diff.index[0])
print(temperature_yearly_diff.index[-1])
print(len(temperature_yearly_diff))
```

```
1855-12-31 00:00:00
2015-12-31 00:00:00
161
```

Train-validation (initial) split

In [40]:
```python
# temperatures_yearly_first_diff.index[0]
# Timestamp('1851-12-31 00:00:00', freq='A-DEC')
# temperatures_yearly_first_diff.index[-1]
# Timestamp('2015-12-31 00:00:00', freq='A-DEC')

"""split at 1986; 1851-1985 is training set, 1986-2015 is validation set"""
split_time = pd.Timestamp(1986,6,30)
# temperatures_yearly_first_diff.index[132]
# Timestamp('1986-12-31 00:00:00', freq='A-DEC')
# 132

temperature_yearly_train = temperature_yearly[temperature_yearly.index < split_time]
temperature_yearly_diff_train = temperature_yearly_diff[temperature_yearly_diff.index < split_time]

temperature_yearly_valid = temperature_yearly[temperature_yearly.index > split_time]
temperature_yearly_diff_valid = temperature_yearly_diff[temperature_yearly_diff.index > split_time]
```

In [41]:
```python
X_train, y_train = temperature_yearly_train.drop(['LandAverageTemperature'], axis = 1), temperature_yearly_train[
X_valid, y_valid = temperature_yearly_valid.drop(['LandAverageTemperature'], axis = 1), temperature_yearly_valid[

Xdiff_train, ydiff_train = temperature_yearly_diff_train.drop(['LandAverageTemperature'], axis = 1), temperature_
Xdiff_valid, ydiff_valid = temperature_yearly_diff_valid.drop(['LandAverageTemperature'], axis = 1), temperature_
```

In [128…   `temperature_yearly_train.tail()`

Out[128…

dt	LandAverageTemperature	lag_1	lag_2	lag_3	lag_4

dt	LandAverageTemperature	lag_1	lag_2	lag_3	lag_4
1981-12-31	9.165833	8.980333	8.733417	8.692750	8.850250
1982-12-31	8.639167	9.165833	8.980333	8.733417	8.692750
1983-12-31	9.028167	8.639167	9.165833	8.980333	8.733417
1984-12-31	8.691833	9.028167	8.639167	9.165833	8.980333
1985-12-31	8.658000	8.691833	9.028167	8.639167	9.165833

Fixed partitioning

Re-shuffle training set to avoid sequence bias

In [42]:
```python
np.random.seed(0)
temperature_yearly_train_shuffled = temperature_yearly_train.to_numpy().copy()
np.random.shuffle(temperature_yearly_train_shuffled)

temperature_yearly_diff_train_shuffled = temperature_yearly_diff_train.to_numpy().copy()
np.random.shuffle(temperature_yearly_diff_train_shuffled)
```

In [43]:
```python
X_shuffled_train, y_shuffled_train = temperature_yearly_train_shuffled[:,1:], temperature_yearly_train_shuffled[:
Xdiff_shuffled_train, ydiff_shuffled_train = temperature_yearly_diff_train_shuffled[:,1:], temperature_yearly_dif
```

LSTM model for the non-differenced series

In [74]:
```python
tf.keras.backend.clear_session()

from tensorflow.keras.layers import Conv1D

model = tf.keras.models.Sequential([
  tf.keras.layers.Lambda(lambda x: tf.expand_dims(x, axis=-1),
                      input_shape=[None]),
#     Conv1D(filters=64, kernel_size=1, activation='relu'),
   tf.keras.layers.Bidirectional(tf.keras.layers.LSTM(64, return_sequences=True)),
   tf.keras.layers.Bidirectional(tf.keras.layers.LSTM(64, return_sequences=False)),
#     tf.keras.layers.Dropout(0.2),
#   tf.keras.layers.Dense(16, kernel_regularizer=tf.keras.regularizers.l2(l2=1e-4), activation = 'relu'),
     tf.keras.layers.Dense(16),
     tf.keras.layers.Dense(1)
])
```

In [75]:
```python
from tensorflow.keras.optimizers.schedules import PolynomialDecay
lr_decay = PolynomialDecay(initial_learning_rate = 1e-3, decay_steps = 2500, end_learning_rate=1e-4, power = 0.5)

callback = tf.keras.callbacks.EarlyStopping(
    monitor='val_mae', mode = 'min', patience=3000, min_delta = 0.00001, restore_best_weights=True)

model.compile(loss="mean_absolute_error", optimizer=tf.keras.optimizers.Adam(learning_rate=1e-4),metrics=["mae"])
history = model.fit(X_shuffled_train, y_shuffled_train,
                    validation_data=(X_valid, y_valid),
                    epochs=2000, callbacks = [callback])
```

```
Epoch 1/2000
5/5 [==============================] - 6s 241ms/step - loss: 8.3559 - mae: 8.3559 - val_loss: 9.1325 - val_mae:
9.1325
Epoch 2/2000
5/5 [==============================] - 0s 10ms/step - loss: 8.1465 - mae: 8.1465 - val_loss: 8.9133 - val_mae: 8.
9133
Epoch 3/2000
5/5 [==============================] - 0s 11ms/step - loss: 7.9333 - mae: 7.9333 - val_loss: 8.6880 - val_mae: 8.
6880
Epoch 4/2000
5/5 [==============================] - 0s 11ms/step - loss: 7.7134 - mae: 7.7134 - val_loss: 8.4540 - val_mae: 8.
4540
Epoch 5/2000
5/5 [==============================] - 0s 11ms/step - loss: 7.4841 - mae: 7.4841 - val_loss: 8.2078 - val_mae: 8.
```

```
2078
Epoch 6/2000
5/5 [==============================] - 0s 10ms/step - loss: 7.2417 - mae: 7.2417 - val_loss: 7.9455 - val_mae: 7.
9455
Epoch 7/2000
5/5 [==============================] - 0s 10ms/step - loss: 6.9826 - mae: 6.9826 - val_loss: 7.6631 - val_mae: 7.
6631
Epoch 8/2000
5/5 [==============================] - 0s 11ms/step - loss: 6.7022 - mae: 6.7022 - val_loss: 7.3561 - val_mae: 7.
3561
Epoch 9/2000
5/5 [==============================] - 0s 10ms/step - loss: 6.3963 - mae: 6.3963 - val_loss: 7.0194 - val_mae: 7.
0194
Epoch 10/2000
5/5 [==============================] - 0s 11ms/step - loss: 6.0594 - mae: 6.0594 - val_loss: 6.6476 - val_mae: 6.
6476
Epoch 11/2000
5/5 [==============================] - 0s 10ms/step - loss: 5.6868 - mae: 5.6868 - val_loss: 6.2361 - val_mae: 6.
2361
Epoch 12/2000
5/5 [==============================] - 0s 12ms/step - loss: 5.2726 - mae: 5.2726 - val_loss: 5.7791 - val_mae: 5.
7791
Epoch 13/2000
5/5 [==============================] - 0s 14ms/step - loss: 4.8125 - mae: 4.8125 - val_loss: 5.2725 - val_mae: 5.
2725
Epoch 14/2000
5/5 [==============================] - 0s 15ms/step - loss: 4.3011 - mae: 4.3011 - val_loss: 4.7122 - val_mae: 4.
7122
Epoch 15/2000
5/5 [==============================] - 0s 11ms/step - loss: 3.7352 - mae: 3.7352 - val_loss: 4.0959 - val_mae: 4.
0959
Epoch 16/2000
5/5 [==============================] - 0s 10ms/step - loss: 3.1120 - mae: 3.1120 - val_loss: 3.4227 - val_mae: 3.
4227
Epoch 17/2000
5/5 [==============================] - 0s 10ms/step - loss: 2.4313 - mae: 2.4313 - val_loss: 2.6960 - val_mae: 2.
6960
Epoch 18/2000
5/5 [==============================] - 0s 11ms/step - loss: 1.6959 - mae: 1.6959 - val_loss: 1.9186 - val_mae: 1.
9186
Epoch 19/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.9105 - mae: 0.9105 - val_loss: 1.0990 - val_mae: 1.
0990
Epoch 20/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2754 - mae: 0.2754 - val_loss: 0.4242 - val_mae: 0.
4242
Epoch 21/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.4050 - mae: 0.4050 - val_loss: 0.3539 - val_mae: 0.
3539
Epoch 22/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.3728 - mae: 0.3728 - val_loss: 0.5966 - val_mae: 0.
5966
Epoch 23/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2236 - mae: 0.2236 - val_loss: 0.8897 - val_mae: 0.
8897
Epoch 24/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2591 - mae: 0.2591 - val_loss: 0.9656 - val_mae: 0.
9656
Epoch 25/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2652 - mae: 0.2652 - val_loss: 0.8569 - val_mae: 0.
8569
Epoch 26/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2313 - mae: 0.2313 - val_loss: 0.6904 - val_mae: 0.
6904
Epoch 27/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2258 - mae: 0.2258 - val_loss: 0.6388 - val_mae: 0.
6388
Epoch 28/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2232 - mae: 0.2232 - val_loss: 0.7137 - val_mae: 0.
7137
Epoch 29/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2200 - mae: 0.2200 - val_loss: 0.7828 - val_mae: 0.
7828
Epoch 30/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2263 - mae: 0.2263 - val_loss: 0.8187 - val_mae: 0.
8187
Epoch 31/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2294 - mae: 0.2294 - val_loss: 0.8187 - val_mae: 0.
8187
Epoch 32/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2268 - mae: 0.2268 - val_loss: 0.7709 - val_mae: 0.
```

```
7709
Epoch 33/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.2183 - mae: 0.2183 - val_loss: 0.6942 - val_mae: 0.
6942
Epoch 34/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.2237 - mae: 0.2237 - val_loss: 0.6507 - val_mae: 0.
6507
Epoch 35/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.2249 - mae: 0.2249 - val_loss: 0.6674 - val_mae: 0.
6674
Epoch 36/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2214 - mae: 0.2214 - val_loss: 0.7323 - val_mae: 0.
7323
Epoch 37/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2205 - mae: 0.2205 - val_loss: 0.7951 - val_mae: 0.
7951
Epoch 38/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2257 - mae: 0.2257 - val_loss: 0.8148 - val_mae: 0.
8148
Epoch 39/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2287 - mae: 0.2287 - val_loss: 0.8112 - val_mae: 0.
8112
Epoch 40/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2258 - mae: 0.2258 - val_loss: 0.7747 - val_mae: 0.
7747
Epoch 41/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2192 - mae: 0.2192 - val_loss: 0.7075 - val_mae: 0.
7075
Epoch 42/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2179 - mae: 0.2179 - val_loss: 0.6455 - val_mae: 0.
6455
Epoch 43/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2282 - mae: 0.2282 - val_loss: 0.6510 - val_mae: 0.
6510
Epoch 44/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2206 - mae: 0.2206 - val_loss: 0.7723 - val_mae: 0.
7723
Epoch 45/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2243 - mae: 0.2243 - val_loss: 0.8055 - val_mae: 0.
8055
Epoch 46/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2253 - mae: 0.2253 - val_loss: 0.7665 - val_mae: 0.
7665
Epoch 47/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2202 - mae: 0.2202 - val_loss: 0.7475 - val_mae: 0.
7475
Epoch 48/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2165 - mae: 0.2165 - val_loss: 0.7181 - val_mae: 0.
7181
Epoch 49/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.2175 - mae: 0.2175 - val_loss: 0.7392 - val_mae: 0.
7392
Epoch 50/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.2188 - mae: 0.2188 - val_loss: 0.7537 - val_mae: 0.
7537
Epoch 51/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.2172 - mae: 0.2172 - val_loss: 0.7037 - val_mae: 0.
7037
Epoch 52/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2189 - mae: 0.2189 - val_loss: 0.6344 - val_mae: 0.
6344
Epoch 53/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2220 - mae: 0.2220 - val_loss: 0.6934 - val_mae: 0.
6934
Epoch 54/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2171 - mae: 0.2171 - val_loss: 0.7288 - val_mae: 0.
7288
Epoch 55/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2152 - mae: 0.2152 - val_loss: 0.6907 - val_mae: 0.
6907
Epoch 56/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2169 - mae: 0.2169 - val_loss: 0.6593 - val_mae: 0.
6593
Epoch 57/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2183 - mae: 0.2183 - val_loss: 0.6819 - val_mae: 0.
6819
Epoch 58/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2156 - mae: 0.2156 - val_loss: 0.6930 - val_mae: 0.
6930
Epoch 59/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.2166 - mae: 0.2166 - val_loss: 0.6594 - val_mae: 0.
```

```
6594
Epoch 60/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.2182 - mae: 0.2182 - val_loss: 0.6762 - val_mae: 0.
6762
Epoch 61/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2160 - mae: 0.2160 - val_loss: 0.6446 - val_mae: 0.
6446
Epoch 62/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2192 - mae: 0.2192 - val_loss: 0.6555 - val_mae: 0.
6555
Epoch 63/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2173 - mae: 0.2173 - val_loss: 0.7133 - val_mae: 0.
7133
Epoch 64/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.2188 - mae: 0.2188 - val_loss: 0.7581 - val_mae: 0.
7581
Epoch 65/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2172 - mae: 0.2172 - val_loss: 0.7034 - val_mae: 0.
7034
Epoch 66/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2129 - mae: 0.2129 - val_loss: 0.6345 - val_mae: 0.
6345
Epoch 67/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2274 - mae: 0.2274 - val_loss: 0.6140 - val_mae: 0.
6140
Epoch 68/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2191 - mae: 0.2191 - val_loss: 0.7172 - val_mae: 0.
7172
Epoch 69/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2183 - mae: 0.2183 - val_loss: 0.7584 - val_mae: 0.
7584
Epoch 70/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2174 - mae: 0.2174 - val_loss: 0.7137 - val_mae: 0.
7137
Epoch 71/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2128 - mae: 0.2128 - val_loss: 0.7041 - val_mae: 0.
7041
Epoch 72/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2129 - mae: 0.2129 - val_loss: 0.6919 - val_mae: 0.
6919
Epoch 73/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2136 - mae: 0.2136 - val_loss: 0.7015 - val_mae: 0.
7015
Epoch 74/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2145 - mae: 0.2145 - val_loss: 0.6242 - val_mae: 0.
6242
Epoch 75/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2179 - mae: 0.2179 - val_loss: 0.6530 - val_mae: 0.
6530
Epoch 76/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2148 - mae: 0.2148 - val_loss: 0.7248 - val_mae: 0.
7248
Epoch 77/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2139 - mae: 0.2139 - val_loss: 0.6982 - val_mae: 0.
6982
Epoch 78/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2145 - mae: 0.2145 - val_loss: 0.6075 - val_mae: 0.
6075
Epoch 79/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2164 - mae: 0.2164 - val_loss: 0.6762 - val_mae: 0.
6762
Epoch 80/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2108 - mae: 0.2108 - val_loss: 0.7074 - val_mae: 0.
7074
Epoch 81/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2106 - mae: 0.2106 - val_loss: 0.6707 - val_mae: 0.
6707
Epoch 82/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2103 - mae: 0.2103 - val_loss: 0.6805 - val_mae: 0.
6805
Epoch 83/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2144 - mae: 0.2144 - val_loss: 0.7293 - val_mae: 0.
7293
Epoch 84/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2146 - mae: 0.2146 - val_loss: 0.7230 - val_mae: 0.
7230
Epoch 85/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2113 - mae: 0.2113 - val_loss: 0.6272 - val_mae: 0.
6272
Epoch 86/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2172 - mae: 0.2172 - val_loss: 0.6360 - val_mae: 0.
```

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6360
Epoch 87/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2115 - mae: 0.2115 - val_loss: 0.7768 - val_mae: 0.
7768
Epoch 88/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2217 - mae: 0.2217 - val_loss: 0.7664 - val_mae: 0.
7664
Epoch 89/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2120 - mae: 0.2120 - val_loss: 0.6384 - val_mae: 0.
6384
Epoch 90/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2158 - mae: 0.2158 - val_loss: 0.5926 - val_mae: 0.
5926
Epoch 91/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2147 - mae: 0.2147 - val_loss: 0.6677 - val_mae: 0.
6677
Epoch 92/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2096 - mae: 0.2096 - val_loss: 0.6974 - val_mae: 0.
6974
Epoch 93/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2096 - mae: 0.2096 - val_loss: 0.6871 - val_mae: 0.
6871
Epoch 94/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2093 - mae: 0.2093 - val_loss: 0.6431 - val_mae: 0.
6431
Epoch 95/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2085 - mae: 0.2085 - val_loss: 0.7285 - val_mae: 0.
7285
Epoch 96/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2138 - mae: 0.2138 - val_loss: 0.7313 - val_mae: 0.
7313
Epoch 97/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2069 - mae: 0.2069 - val_loss: 0.6312 - val_mae: 0.
6312
Epoch 98/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2116 - mae: 0.2116 - val_loss: 0.5821 - val_mae: 0.
5821
Epoch 99/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2127 - mae: 0.2127 - val_loss: 0.6552 - val_mae: 0.
6552
Epoch 100/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2067 - mae: 0.2067 - val_loss: 0.7303 - val_mae: 0.
7303
Epoch 101/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2142 - mae: 0.2142 - val_loss: 0.7380 - val_mae: 0.
7380
Epoch 102/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2095 - mae: 0.2095 - val_loss: 0.6469 - val_mae: 0.
6469
Epoch 103/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2109 - mae: 0.2109 - val_loss: 0.5638 - val_mae: 0.
5638
Epoch 104/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2107 - mae: 0.2107 - val_loss: 0.6836 - val_mae: 0.
6836
Epoch 105/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2130 - mae: 0.2130 - val_loss: 0.7550 - val_mae: 0.
7550
Epoch 106/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2117 - mae: 0.2117 - val_loss: 0.6661 - val_mae: 0.
6661
Epoch 107/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2043 - mae: 0.2043 - val_loss: 0.6463 - val_mae: 0.
6463
Epoch 108/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2043 - mae: 0.2043 - val_loss: 0.6587 - val_mae: 0.
6587
Epoch 109/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2043 - mae: 0.2043 - val_loss: 0.6561 - val_mae: 0.
6561
Epoch 110/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2045 - mae: 0.2045 - val_loss: 0.6553 - val_mae: 0.
6553
Epoch 111/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2038 - mae: 0.2038 - val_loss: 0.6758 - val_mae: 0.
6758
Epoch 112/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2039 - mae: 0.2039 - val_loss: 0.6277 - val_mae: 0.
6277
Epoch 113/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2162 - mae: 0.2162 - val_loss: 0.5743 - val_mae: 0.
```

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5743
Epoch 114/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2049 - mae: 0.2049 - val_loss: 0.7352 - val_mae: 0.
7352
Epoch 115/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2162 - mae: 0.2162 - val_loss: 0.7443 - val_mae: 0.
7443
Epoch 116/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2130 - mae: 0.2130 - val_loss: 0.6138 - val_mae: 0.
6138
Epoch 117/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2092 - mae: 0.2092 - val_loss: 0.5915 - val_mae: 0.
5915
Epoch 118/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2059 - mae: 0.2059 - val_loss: 0.7014 - val_mae: 0.
7014
Epoch 119/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2057 - mae: 0.2057 - val_loss: 0.6501 - val_mae: 0.
6501
Epoch 120/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2015 - mae: 0.2015 - val_loss: 0.6325 - val_mae: 0.
6325
Epoch 121/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2012 - mae: 0.2012 - val_loss: 0.5950 - val_mae: 0.
5950
Epoch 122/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2031 - mae: 0.2031 - val_loss: 0.6217 - val_mae: 0.
6217
Epoch 123/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2009 - mae: 0.2009 - val_loss: 0.6213 - val_mae: 0.
6213
Epoch 124/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2026 - mae: 0.2026 - val_loss: 0.6844 - val_mae: 0.
6844
Epoch 125/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2046 - mae: 0.2046 - val_loss: 0.6814 - val_mae: 0.
6814
Epoch 126/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2016 - mae: 0.2016 - val_loss: 0.5991 - val_mae: 0.
5991
Epoch 127/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2030 - mae: 0.2030 - val_loss: 0.5920 - val_mae: 0.
5920
Epoch 128/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1989 - mae: 0.1989 - val_loss: 0.6320 - val_mae: 0.
6320
Epoch 129/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1991 - mae: 0.1991 - val_loss: 0.6228 - val_mae: 0.
6228
Epoch 130/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1995 - mae: 0.1995 - val_loss: 0.6175 - val_mae: 0.
6175
Epoch 131/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2085 - mae: 0.2085 - val_loss: 0.6890 - val_mae: 0.
6890
Epoch 132/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1997 - mae: 0.1997 - val_loss: 0.5585 - val_mae: 0.
5585
Epoch 133/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2029 - mae: 0.2029 - val_loss: 0.6306 - val_mae: 0.
6306
Epoch 134/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2024 - mae: 0.2024 - val_loss: 0.6853 - val_mae: 0.
6853
Epoch 135/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2030 - mae: 0.2030 - val_loss: 0.5591 - val_mae: 0.
5591
Epoch 136/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1999 - mae: 0.1999 - val_loss: 0.6366 - val_mae: 0.
6366
Epoch 137/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2020 - mae: 0.2020 - val_loss: 0.6958 - val_mae: 0.
6958
Epoch 138/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2047 - mae: 0.2047 - val_loss: 0.6261 - val_mae: 0.
6261
Epoch 139/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1997 - mae: 0.1997 - val_loss: 0.6132 - val_mae: 0.
6132
Epoch 140/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2034 - mae: 0.2034 - val_loss: 0.6606 - val_mae: 0.
```

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6606
Epoch 141/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1947 - mae: 0.1947 - val_loss: 0.5594 - val_mae: 0.
5594
Epoch 142/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1987 - mae: 0.1987 - val_loss: 0.6470 - val_mae: 0.
6470
Epoch 143/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1975 - mae: 0.1975 - val_loss: 0.6241 - val_mae: 0.
6241
Epoch 144/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1959 - mae: 0.1959 - val_loss: 0.5917 - val_mae: 0.
5917
Epoch 145/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1951 - mae: 0.1951 - val_loss: 0.6276 - val_mae: 0.
6276
Epoch 146/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.2046 - mae: 0.2046 - val_loss: 0.6786 - val_mae: 0.
6786
Epoch 147/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1970 - mae: 0.1970 - val_loss: 0.5563 - val_mae: 0.
5563
Epoch 148/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1949 - mae: 0.1949 - val_loss: 0.6352 - val_mae: 0.
6352
Epoch 149/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1999 - mae: 0.1999 - val_loss: 0.6538 - val_mae: 0.
6538
Epoch 150/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1956 - mae: 0.1956 - val_loss: 0.5469 - val_mae: 0.
5469
Epoch 151/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1963 - mae: 0.1963 - val_loss: 0.5795 - val_mae: 0.
5795
Epoch 152/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1945 - mae: 0.1945 - val_loss: 0.5764 - val_mae: 0.
5764
Epoch 153/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1937 - mae: 0.1937 - val_loss: 0.6171 - val_mae: 0.
6171
Epoch 154/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1935 - mae: 0.1935 - val_loss: 0.5939 - val_mae: 0.
5939
Epoch 155/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1920 - mae: 0.1920 - val_loss: 0.5640 - val_mae: 0.
5640
Epoch 156/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1936 - mae: 0.1936 - val_loss: 0.5450 - val_mae: 0.
5450
Epoch 157/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1951 - mae: 0.1951 - val_loss: 0.5880 - val_mae: 0.
5880
Epoch 158/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1921 - mae: 0.1921 - val_loss: 0.6456 - val_mae: 0.
6456
Epoch 159/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1966 - mae: 0.1966 - val_loss: 0.5299 - val_mae: 0.
5299
Epoch 160/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1975 - mae: 0.1975 - val_loss: 0.5505 - val_mae: 0.
5505
Epoch 161/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1918 - mae: 0.1918 - val_loss: 0.5693 - val_mae: 0.
5693
Epoch 162/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1975 - mae: 0.1975 - val_loss: 0.5664 - val_mae: 0.
5664
Epoch 163/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1905 - mae: 0.1905 - val_loss: 0.6333 - val_mae: 0.
6333
Epoch 164/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2023 - mae: 0.2023 - val_loss: 0.6081 - val_mae: 0.
6081
Epoch 165/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1999 - mae: 0.1999 - val_loss: 0.4921 - val_mae: 0.
4921
Epoch 166/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2021 - mae: 0.2021 - val_loss: 0.6373 - val_mae: 0.
6373
Epoch 167/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1927 - mae: 0.1927 - val_loss: 0.5642 - val_mae: 0.
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5642
Epoch 168/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1927 - mae: 0.1927 - val_loss: 0.5481 - val_mae: 0.
5481
Epoch 169/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1898 - mae: 0.1898 - val_loss: 0.5742 - val_mae: 0.
5742
Epoch 170/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1896 - mae: 0.1896 - val_loss: 0.5718 - val_mae: 0.
5718
Epoch 171/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1875 - mae: 0.1875 - val_loss: 0.6170 - val_mae: 0.
6170
Epoch 172/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1931 - mae: 0.1931 - val_loss: 0.5437 - val_mae: 0.
5437
Epoch 173/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1878 - mae: 0.1878 - val_loss: 0.6314 - val_mae: 0.
6314
Epoch 174/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1971 - mae: 0.1971 - val_loss: 0.6409 - val_mae: 0.
6409
Epoch 175/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1931 - mae: 0.1931 - val_loss: 0.5488 - val_mae: 0.
5488
Epoch 176/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1878 - mae: 0.1878 - val_loss: 0.5367 - val_mae: 0.
5367
Epoch 177/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1941 - mae: 0.1941 - val_loss: 0.5205 - val_mae: 0.
5205
Epoch 178/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1866 - mae: 0.1866 - val_loss: 0.6235 - val_mae: 0.
6235
Epoch 179/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1936 - mae: 0.1936 - val_loss: 0.5999 - val_mae: 0.
5999
Epoch 180/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1887 - mae: 0.1887 - val_loss: 0.5589 - val_mae: 0.
5589
Epoch 181/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1857 - mae: 0.1857 - val_loss: 0.5558 - val_mae: 0.
5558
Epoch 182/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1856 - mae: 0.1856 - val_loss: 0.5769 - val_mae: 0.
5769
Epoch 183/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1949 - mae: 0.1949 - val_loss: 0.6403 - val_mae: 0.
6403
Epoch 184/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1962 - mae: 0.1962 - val_loss: 0.5387 - val_mae: 0.
5387
Epoch 185/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1846 - mae: 0.1846 - val_loss: 0.5424 - val_mae: 0.
5424
Epoch 186/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1867 - mae: 0.1867 - val_loss: 0.5430 - val_mae: 0.
5430
Epoch 187/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1840 - mae: 0.1840 - val_loss: 0.5516 - val_mae: 0.
5516
Epoch 188/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1836 - mae: 0.1836 - val_loss: 0.5531 - val_mae: 0.
5531
Epoch 189/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1853 - mae: 0.1853 - val_loss: 0.5886 - val_mae: 0.
5886
Epoch 190/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1873 - mae: 0.1873 - val_loss: 0.5336 - val_mae: 0.
5336
Epoch 191/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1845 - mae: 0.1845 - val_loss: 0.5335 - val_mae: 0.
5335
Epoch 192/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2010 - mae: 0.2010 - val_loss: 0.4935 - val_mae: 0.
4935
Epoch 193/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1877 - mae: 0.1877 - val_loss: 0.6240 - val_mae: 0.
6240
Epoch 194/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1942 - mae: 0.1942 - val_loss: 0.5428 - val_mae: 0.
```

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5428
Epoch 195/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1840 - mae: 0.1840 - val_loss: 0.4803 - val_mae: 0.
4803
Epoch 196/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1864 - mae: 0.1864 - val_loss: 0.5268 - val_mae: 0.
5268
Epoch 197/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1838 - mae: 0.1838 - val_loss: 0.4987 - val_mae: 0.
4987
Epoch 198/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1832 - mae: 0.1832 - val_loss: 0.5391 - val_mae: 0.
5391
Epoch 199/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1813 - mae: 0.1813 - val_loss: 0.5101 - val_mae: 0.
5101
Epoch 200/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1817 - mae: 0.1817 - val_loss: 0.5552 - val_mae: 0.
5552
Epoch 201/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1882 - mae: 0.1882 - val_loss: 0.5981 - val_mae: 0.
5981
Epoch 202/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1860 - mae: 0.1860 - val_loss: 0.5054 - val_mae: 0.
5054
Epoch 203/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1868 - mae: 0.1868 - val_loss: 0.4674 - val_mae: 0.
4674
Epoch 204/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1900 - mae: 0.1900 - val_loss: 0.5051 - val_mae: 0.
5051
Epoch 205/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1832 - mae: 0.1832 - val_loss: 0.5667 - val_mae: 0.
5667
Epoch 206/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1872 - mae: 0.1872 - val_loss: 0.5436 - val_mae: 0.
5436
Epoch 207/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1822 - mae: 0.1822 - val_loss: 0.4257 - val_mae: 0.
4257
Epoch 208/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1903 - mae: 0.1903 - val_loss: 0.5476 - val_mae: 0.
5476
Epoch 209/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1865 - mae: 0.1865 - val_loss: 0.5708 - val_mae: 0.
5708
Epoch 210/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1858 - mae: 0.1858 - val_loss: 0.4217 - val_mae: 0.
4217
Epoch 211/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2007 - mae: 0.2007 - val_loss: 0.4993 - val_mae: 0.
4993
Epoch 212/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1969 - mae: 0.1969 - val_loss: 0.6273 - val_mae: 0.
6273
Epoch 213/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1803 - mae: 0.1803 - val_loss: 0.4430 - val_mae: 0.
4430
Epoch 214/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1908 - mae: 0.1908 - val_loss: 0.4881 - val_mae: 0.
4881
Epoch 215/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1878 - mae: 0.1878 - val_loss: 0.6151 - val_mae: 0.
6151
Epoch 216/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1925 - mae: 0.1925 - val_loss: 0.5186 - val_mae: 0.
5186
Epoch 217/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1778 - mae: 0.1778 - val_loss: 0.4682 - val_mae: 0.
4682
Epoch 218/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1822 - mae: 0.1822 - val_loss: 0.5103 - val_mae: 0.
5103
Epoch 219/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1795 - mae: 0.1795 - val_loss: 0.5506 - val_mae: 0.
5506
Epoch 220/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1805 - mae: 0.1805 - val_loss: 0.4392 - val_mae: 0.
4392
Epoch 221/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1849 - mae: 0.1849 - val_loss: 0.5054 - val_mae: 0.
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5054
Epoch 222/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1795 - mae: 0.1795 - val_loss: 0.5269 - val_mae: 0.
5269
Epoch 223/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1782 - mae: 0.1782 - val_loss: 0.4547 - val_mae: 0.
4547
Epoch 224/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1804 - mae: 0.1804 - val_loss: 0.5135 - val_mae: 0.
5135
Epoch 225/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1762 - mae: 0.1762 - val_loss: 0.4579 - val_mae: 0.
4579
Epoch 226/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1818 - mae: 0.1818 - val_loss: 0.4814 - val_mae: 0.
4814
Epoch 227/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1814 - mae: 0.1814 - val_loss: 0.5525 - val_mae: 0.
5525
Epoch 228/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1793 - mae: 0.1793 - val_loss: 0.4517 - val_mae: 0.
4517
Epoch 229/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1768 - mae: 0.1768 - val_loss: 0.5331 - val_mae: 0.
5331
Epoch 230/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1927 - mae: 0.1927 - val_loss: 0.5933 - val_mae: 0.
5933
Epoch 231/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1865 - mae: 0.1865 - val_loss: 0.3891 - val_mae: 0.
3891
Epoch 232/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1966 - mae: 0.1966 - val_loss: 0.4716 - val_mae: 0.
4716
Epoch 233/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1797 - mae: 0.1797 - val_loss: 0.5325 - val_mae: 0.
5325
Epoch 234/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1856 - mae: 0.1856 - val_loss: 0.4363 - val_mae: 0.
4363
Epoch 235/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1773 - mae: 0.1773 - val_loss: 0.4986 - val_mae: 0.
4986
Epoch 236/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1755 - mae: 0.1755 - val_loss: 0.4726 - val_mae: 0.
4726
Epoch 237/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1738 - mae: 0.1738 - val_loss: 0.5556 - val_mae: 0.
5556
Epoch 238/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1976 - mae: 0.1976 - val_loss: 0.5601 - val_mae: 0.
5601
Epoch 239/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1753 - mae: 0.1753 - val_loss: 0.3786 - val_mae: 0.
3786
Epoch 240/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1953 - mae: 0.1953 - val_loss: 0.4453 - val_mae: 0.
4453
Epoch 241/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1737 - mae: 0.1737 - val_loss: 0.5221 - val_mae: 0.
5221
Epoch 242/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1821 - mae: 0.1821 - val_loss: 0.5167 - val_mae: 0.
5167
Epoch 243/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1731 - mae: 0.1731 - val_loss: 0.4520 - val_mae: 0.
4520
Epoch 244/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1737 - mae: 0.1737 - val_loss: 0.4921 - val_mae: 0.
4921
Epoch 245/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1747 - mae: 0.1747 - val_loss: 0.4934 - val_mae: 0.
4934
Epoch 246/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1739 - mae: 0.1739 - val_loss: 0.4716 - val_mae: 0.
4716
Epoch 247/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1737 - mae: 0.1737 - val_loss: 0.4628 - val_mae: 0.
4628
Epoch 248/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1730 - mae: 0.1730 - val_loss: 0.4591 - val_mae: 0.
```

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4591
Epoch 249/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1731 - mae: 0.1731 - val_loss: 0.4526 - val_mae: 0.
4526
Epoch 250/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1737 - mae: 0.1737 - val_loss: 0.4574 - val_mae: 0.
4574
Epoch 251/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1720 - mae: 0.1720 - val_loss: 0.4933 - val_mae: 0.
4933
Epoch 252/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1716 - mae: 0.1716 - val_loss: 0.4195 - val_mae: 0.
4195
Epoch 253/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1739 - mae: 0.1739 - val_loss: 0.4885 - val_mae: 0.
4885
Epoch 254/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1746 - mae: 0.1746 - val_loss: 0.4777 - val_mae: 0.
4777
Epoch 255/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1772 - mae: 0.1772 - val_loss: 0.4007 - val_mae: 0.
4007
Epoch 256/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1758 - mae: 0.1758 - val_loss: 0.4599 - val_mae: 0.
4599
Epoch 257/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1710 - mae: 0.1710 - val_loss: 0.4562 - val_mae: 0.
4562
Epoch 258/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1737 - mae: 0.1737 - val_loss: 0.4895 - val_mae: 0.
4895
Epoch 259/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1751 - mae: 0.1751 - val_loss: 0.3841 - val_mae: 0.
3841
Epoch 260/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1772 - mae: 0.1772 - val_loss: 0.4646 - val_mae: 0.
4646
Epoch 261/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1794 - mae: 0.1794 - val_loss: 0.5128 - val_mae: 0.
5128
Epoch 262/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1765 - mae: 0.1765 - val_loss: 0.4562 - val_mae: 0.
4562
Epoch 263/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1707 - mae: 0.1707 - val_loss: 0.4451 - val_mae: 0.
4451
Epoch 264/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1703 - mae: 0.1703 - val_loss: 0.4493 - val_mae: 0.
4493
Epoch 265/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1732 - mae: 0.1732 - val_loss: 0.4078 - val_mae: 0.
4078
Epoch 266/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1723 - mae: 0.1723 - val_loss: 0.4625 - val_mae: 0.
4625
Epoch 267/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1805 - mae: 0.1805 - val_loss: 0.5232 - val_mae: 0.
5232
Epoch 268/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1764 - mae: 0.1764 - val_loss: 0.3667 - val_mae: 0.
3667
Epoch 269/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1853 - mae: 0.1853 - val_loss: 0.4233 - val_mae: 0.
4233
Epoch 270/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1725 - mae: 0.1725 - val_loss: 0.4867 - val_mae: 0.
4867
Epoch 271/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1704 - mae: 0.1704 - val_loss: 0.3789 - val_mae: 0.
3789
Epoch 272/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1761 - mae: 0.1761 - val_loss: 0.4259 - val_mae: 0.
4259
Epoch 273/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1692 - mae: 0.1692 - val_loss: 0.4607 - val_mae: 0.
4607
Epoch 274/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1763 - mae: 0.1763 - val_loss: 0.4523 - val_mae: 0.
4523
Epoch 275/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1704 - mae: 0.1704 - val_loss: 0.3773 - val_mae: 0.
```

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3773
Epoch 276/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1716 - mae: 0.1716 - val_loss: 0.4647 - val_mae: 0.
4647
Epoch 277/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1757 - mae: 0.1757 - val_loss: 0.4909 - val_mae: 0.
4909
Epoch 278/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1742 - mae: 0.1742 - val_loss: 0.4305 - val_mae: 0.
4305
Epoch 279/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1679 - mae: 0.1679 - val_loss: 0.4290 - val_mae: 0.
4290
Epoch 280/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1691 - mae: 0.1691 - val_loss: 0.4165 - val_mae: 0.
4165
Epoch 281/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1701 - mae: 0.1701 - val_loss: 0.3870 - val_mae: 0.
3870
Epoch 282/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1683 - mae: 0.1683 - val_loss: 0.4649 - val_mae: 0.
4649
Epoch 283/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1757 - mae: 0.1757 - val_loss: 0.4642 - val_mae: 0.
4642
Epoch 284/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1688 - mae: 0.1688 - val_loss: 0.3811 - val_mae: 0.
3811
Epoch 285/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1697 - mae: 0.1697 - val_loss: 0.4470 - val_mae: 0.
4470
Epoch 286/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1712 - mae: 0.1712 - val_loss: 0.4714 - val_mae: 0.
4714
Epoch 287/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1758 - mae: 0.1758 - val_loss: 0.4036 - val_mae: 0.
4036
Epoch 288/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1717 - mae: 0.1717 - val_loss: 0.3763 - val_mae: 0.
3763
Epoch 289/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1732 - mae: 0.1732 - val_loss: 0.4265 - val_mae: 0.
4265
Epoch 290/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1692 - mae: 0.1692 - val_loss: 0.3491 - val_mae: 0.
3491
Epoch 291/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1706 - mae: 0.1706 - val_loss: 0.4782 - val_mae: 0.
4782
Epoch 292/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1780 - mae: 0.1780 - val_loss: 0.4291 - val_mae: 0.
4291
Epoch 293/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1645 - mae: 0.1645 - val_loss: 0.3538 - val_mae: 0.
3538
Epoch 294/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1737 - mae: 0.1737 - val_loss: 0.4146 - val_mae: 0.
4146
Epoch 295/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1686 - mae: 0.1686 - val_loss: 0.4000 - val_mae: 0.
4000
Epoch 296/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1838 - mae: 0.1838 - val_loss: 0.3632 - val_mae: 0.
3632
Epoch 297/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1770 - mae: 0.1770 - val_loss: 0.4898 - val_mae: 0.
4898
Epoch 298/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1685 - mae: 0.1685 - val_loss: 0.3415 - val_mae: 0.
3415
Epoch 299/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1797 - mae: 0.1797 - val_loss: 0.3838 - val_mae: 0.
3838
Epoch 300/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1659 - mae: 0.1659 - val_loss: 0.4579 - val_mae: 0.
4579
Epoch 301/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1820 - mae: 0.1820 - val_loss: 0.4344 - val_mae: 0.
4344
Epoch 302/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1663 - mae: 0.1663 - val_loss: 0.3606 - val_mae: 0.
```

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3606
Epoch 303/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1680 - mae: 0.1680 - val_loss: 0.4077 - val_mae: 0.
4077
Epoch 304/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1662 - mae: 0.1662 - val_loss: 0.4029 - val_mae: 0.
4029
Epoch 305/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1657 - mae: 0.1657 - val_loss: 0.3716 - val_mae: 0.
3716
Epoch 306/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1671 - mae: 0.1671 - val_loss: 0.3697 - val_mae: 0.
3697
Epoch 307/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.4356 - val_mae: 0.
4356
Epoch 308/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1725 - mae: 0.1725 - val_loss: 0.4282 - val_mae: 0.
4282
Epoch 309/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1687 - mae: 0.1687 - val_loss: 0.3704 - val_mae: 0.
3704
Epoch 310/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1656 - mae: 0.1656 - val_loss: 0.4037 - val_mae: 0.
4037
Epoch 311/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1655 - mae: 0.1655 - val_loss: 0.3756 - val_mae: 0.
3756
Epoch 312/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1663 - mae: 0.1663 - val_loss: 0.3875 - val_mae: 0.
3875
Epoch 313/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1665 - mae: 0.1665 - val_loss: 0.4496 - val_mae: 0.
4496
Epoch 314/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1716 - mae: 0.1716 - val_loss: 0.3794 - val_mae: 0.
3794
Epoch 315/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1713 - mae: 0.1713 - val_loss: 0.3084 - val_mae: 0.
3084
Epoch 316/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1743 - mae: 0.1743 - val_loss: 0.4308 - val_mae: 0.
4308
Epoch 317/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1696 - mae: 0.1696 - val_loss: 0.4322 - val_mae: 0.
4322
Epoch 318/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1726 - mae: 0.1726 - val_loss: 0.3782 - val_mae: 0.
3782
Epoch 319/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1664 - mae: 0.1664 - val_loss: 0.3714 - val_mae: 0.
3714
Epoch 320/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1656 - mae: 0.1656 - val_loss: 0.4072 - val_mae: 0.
4072
Epoch 321/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1680 - mae: 0.1680 - val_loss: 0.3393 - val_mae: 0.
3393
Epoch 322/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1659 - mae: 0.1659 - val_loss: 0.4333 - val_mae: 0.
4333
Epoch 323/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1686 - mae: 0.1686 - val_loss: 0.3414 - val_mae: 0.
3414
Epoch 324/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1847 - mae: 0.1847 - val_loss: 0.3484 - val_mae: 0.
3484
Epoch 325/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1815 - mae: 0.1815 - val_loss: 0.4910 - val_mae: 0.
4910
Epoch 326/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2302 - val_mae: 0.
2302
Epoch 327/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2167 - mae: 0.2167 - val_loss: 0.3917 - val_mae: 0.
3917
Epoch 328/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1840 - mae: 0.1840 - val_loss: 0.4644 - val_mae: 0.
4644
Epoch 329/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1721 - mae: 0.1721 - val_loss: 0.2694 - val_mae: 0.
```

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2694
Epoch 330/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1802 - mae: 0.1802 - val_loss: 0.4210 - val_mae: 0.
4210
Epoch 331/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1758 - mae: 0.1758 - val_loss: 0.4139 - val_mae: 0.
4139
Epoch 332/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1808 - mae: 0.1808 - val_loss: 0.2801 - val_mae: 0.
2801
Epoch 333/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1661 - mae: 0.1661 - val_loss: 0.4780 - val_mae: 0.
4780
Epoch 334/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2007 - mae: 0.2007 - val_loss: 0.4156 - val_mae: 0.
4156
Epoch 335/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2731 - val_mae: 0.
2731
Epoch 336/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1837 - mae: 0.1837 - val_loss: 0.3634 - val_mae: 0.
3634
Epoch 337/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1648 - mae: 0.1648 - val_loss: 0.3993 - val_mae: 0.
3993
Epoch 338/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1646 - mae: 0.1646 - val_loss: 0.3450 - val_mae: 0.
3450
Epoch 339/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.3835 - val_mae: 0.
3835
Epoch 340/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1856 - mae: 0.1856 - val_loss: 0.3996 - val_mae: 0.
3996
Epoch 341/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1779 - mae: 0.1779 - val_loss: 0.2902 - val_mae: 0.
2902
Epoch 342/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1763 - mae: 0.1763 - val_loss: 0.4734 - val_mae: 0.
4734
Epoch 343/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1737 - mae: 0.1737 - val_loss: 0.3230 - val_mae: 0.
3230
Epoch 344/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1718 - mae: 0.1718 - val_loss: 0.3592 - val_mae: 0.
3592
Epoch 345/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1725 - mae: 0.1725 - val_loss: 0.4026 - val_mae: 0.
4026
Epoch 346/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1720 - mae: 0.1720 - val_loss: 0.2723 - val_mae: 0.
2723
Epoch 347/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1729 - mae: 0.1729 - val_loss: 0.3833 - val_mae: 0.
3833
Epoch 348/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1640 - mae: 0.1640 - val_loss: 0.3385 - val_mae: 0.
3385
Epoch 349/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1697 - mae: 0.1697 - val_loss: 0.3453 - val_mae: 0.
3453
Epoch 350/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1641 - mae: 0.1641 - val_loss: 0.4063 - val_mae: 0.
4063
Epoch 351/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1639 - mae: 0.1639 - val_loss: 0.3132 - val_mae: 0.
3132
Epoch 352/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1685 - mae: 0.1685 - val_loss: 0.3568 - val_mae: 0.
3568
Epoch 353/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1632 - mae: 0.1632 - val_loss: 0.3555 - val_mae: 0.
3555
Epoch 354/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1630 - mae: 0.1630 - val_loss: 0.3040 - val_mae: 0.
3040
Epoch 355/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1681 - mae: 0.1681 - val_loss: 0.3823 - val_mae: 0.
3823
Epoch 356/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1660 - mae: 0.1660 - val_loss: 0.4190 - val_mae: 0.
```

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4190
Epoch 357/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1680 - mae: 0.1680 - val_loss: 0.3015 - val_mae: 0.
3015
Epoch 358/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1844 - mae: 0.1844 - val_loss: 0.2950 - val_mae: 0.
2950
Epoch 359/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.4251 - val_mae: 0.
4251
Epoch 360/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1685 - mae: 0.1685 - val_loss: 0.3343 - val_mae: 0.
3343
Epoch 361/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.3962 - val_mae: 0.
3962
Epoch 362/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1832 - mae: 0.1832 - val_loss: 0.4045 - val_mae: 0.
4045
Epoch 363/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1660 - mae: 0.1660 - val_loss: 0.2434 - val_mae: 0.
2434
Epoch 364/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1789 - mae: 0.1789 - val_loss: 0.3794 - val_mae: 0.
3794
Epoch 365/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1708 - mae: 0.1708 - val_loss: 0.3515 - val_mae: 0.
3515
Epoch 366/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1702 - mae: 0.1702 - val_loss: 0.2802 - val_mae: 0.
2802
Epoch 367/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1668 - mae: 0.1668 - val_loss: 0.4042 - val_mae: 0.
4042
Epoch 368/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1683 - mae: 0.1683 - val_loss: 0.3251 - val_mae: 0.
3251
Epoch 369/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1788 - mae: 0.1788 - val_loss: 0.2736 - val_mae: 0.
2736
Epoch 370/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1735 - mae: 0.1735 - val_loss: 0.4008 - val_mae: 0.
4008
Epoch 371/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.2872 - val_mae: 0.
2872
Epoch 372/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1768 - mae: 0.1768 - val_loss: 0.3521 - val_mae: 0.
3521
Epoch 373/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1759 - mae: 0.1759 - val_loss: 0.4264 - val_mae: 0.
4264
Epoch 374/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1627 - mae: 0.1627 - val_loss: 0.2109 - val_mae: 0.
2109
Epoch 375/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1963 - mae: 0.1963 - val_loss: 0.4021 - val_mae: 0.
4021
Epoch 376/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1963 - mae: 0.1963 - val_loss: 0.4657 - val_mae: 0.
4657
Epoch 377/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1801 - mae: 0.1801 - val_loss: 0.2050 - val_mae: 0.
2050
Epoch 378/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.2119 - mae: 0.2119 - val_loss: 0.3823 - val_mae: 0.
3823
Epoch 379/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1936 - mae: 0.1936 - val_loss: 0.4913 - val_mae: 0.
4913
Epoch 380/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1696 - mae: 0.1696 - val_loss: 0.2395 - val_mae: 0.
2395
Epoch 381/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.2050 - mae: 0.2050 - val_loss: 0.3396 - val_mae: 0.
3396
Epoch 382/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1919 - mae: 0.1919 - val_loss: 0.4999 - val_mae: 0.
4999
Epoch 383/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1800 - mae: 0.1800 - val_loss: 0.2911 - val_mae: 0.
```

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2911
Epoch 384/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1702 - mae: 0.1702 - val_loss: 0.3101 - val_mae: 0.
3101
Epoch 385/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1649 - mae: 0.1649 - val_loss: 0.3419 - val_mae: 0.
3419
Epoch 386/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.3494 - val_mae: 0.
3494
Epoch 387/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1680 - mae: 0.1680 - val_loss: 0.3792 - val_mae: 0.
3792
Epoch 388/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.2972 - val_mae: 0.
2972
Epoch 389/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1667 - mae: 0.1667 - val_loss: 0.3317 - val_mae: 0.
3317
Epoch 390/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1624 - mae: 0.1624 - val_loss: 0.3458 - val_mae: 0.
3458
Epoch 391/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1635 - mae: 0.1635 - val_loss: 0.3494 - val_mae: 0.
3494
Epoch 392/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.3616 - val_mae: 0.
3616
Epoch 393/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1639 - mae: 0.1639 - val_loss: 0.3302 - val_mae: 0.
3302
Epoch 394/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1619 - mae: 0.1619 - val_loss: 0.3962 - val_mae: 0.
3962
Epoch 395/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1655 - mae: 0.1655 - val_loss: 0.3057 - val_mae: 0.
3057
Epoch 396/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.3188 - val_mae: 0.
3188
Epoch 397/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.3501 - val_mae: 0.
3501
Epoch 398/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1625 - mae: 0.1625 - val_loss: 0.3299 - val_mae: 0.
3299
Epoch 399/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.3150 - val_mae: 0.
3150
Epoch 400/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.3426 - val_mae: 0.
3426
Epoch 401/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.3534 - val_mae: 0.
3534
Epoch 402/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.3647 - val_mae: 0.
3647
Epoch 403/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1634 - mae: 0.1634 - val_loss: 0.3331 - val_mae: 0.
3331
Epoch 404/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1619 - mae: 0.1619 - val_loss: 0.3521 - val_mae: 0.
3521
Epoch 405/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1640 - mae: 0.1640 - val_loss: 0.3450 - val_mae: 0.
3450
Epoch 406/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1655 - mae: 0.1655 - val_loss: 0.2643 - val_mae: 0.
2643
Epoch 407/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1645 - mae: 0.1645 - val_loss: 0.3579 - val_mae: 0.
3579
Epoch 408/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1650 - mae: 0.1650 - val_loss: 0.3161 - val_mae: 0.
3161
Epoch 409/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.3192 - val_mae: 0.
3192
Epoch 410/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.3334 - val_mae: 0.
```

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3334
Epoch 411/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.3396 - val_mae: 0.
3396
Epoch 412/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1643 - mae: 0.1643 - val_loss: 0.3640 - val_mae: 0.
3640
Epoch 413/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1635 - mae: 0.1635 - val_loss: 0.3023 - val_mae: 0.
3023
Epoch 414/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.2951 - val_mae: 0.
2951
Epoch 415/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.3887 - val_mae: 0.
3887
Epoch 416/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1712 - mae: 0.1712 - val_loss: 0.3400 - val_mae: 0.
3400
Epoch 417/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1640 - mae: 0.1640 - val_loss: 0.3141 - val_mae: 0.
3141
Epoch 418/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.3685 - val_mae: 0.
3685
Epoch 419/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1640 - mae: 0.1640 - val_loss: 0.3104 - val_mae: 0.
3104
Epoch 420/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1627 - mae: 0.1627 - val_loss: 0.2854 - val_mae: 0.
2854
Epoch 421/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1639 - mae: 0.1639 - val_loss: 0.3433 - val_mae: 0.
3433
Epoch 422/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1701 - mae: 0.1701 - val_loss: 0.3599 - val_mae: 0.
3599
Epoch 423/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2348 - val_mae: 0.
2348
Epoch 424/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1783 - mae: 0.1783 - val_loss: 0.3281 - val_mae: 0.
3281
Epoch 425/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1724 - mae: 0.1724 - val_loss: 0.3847 - val_mae: 0.
3847
Epoch 426/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2524 - val_mae: 0.
2524
Epoch 427/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1642 - mae: 0.1642 - val_loss: 0.3825 - val_mae: 0.
3825
Epoch 428/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1849 - mae: 0.1849 - val_loss: 0.3852 - val_mae: 0.
3852
Epoch 429/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1702 - mae: 0.1702 - val_loss: 0.2556 - val_mae: 0.
2556
Epoch 430/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.3839 - val_mae: 0.
3839
Epoch 431/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1694 - mae: 0.1694 - val_loss: 0.3098 - val_mae: 0.
3098
Epoch 432/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1669 - mae: 0.1669 - val_loss: 0.2764 - val_mae: 0.
2764
Epoch 433/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1637 - mae: 0.1637 - val_loss: 0.3252 - val_mae: 0.
3252
Epoch 434/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.2790 - val_mae: 0.
2790
Epoch 435/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.3681 - val_mae: 0.
3681
Epoch 436/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.2837 - val_mae: 0.
2837
Epoch 437/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1682 - mae: 0.1682 - val_loss: 0.2982 - val_mae: 0.
```

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2982
Epoch 438/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.3717 - val_mae: 0.
3717
Epoch 439/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1653 - mae: 0.1653 - val_loss: 0.3147 - val_mae: 0.
3147
Epoch 440/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.3268 - val_mae: 0.
3268
Epoch 441/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.3054 - val_mae: 0.
3054
Epoch 442/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1702 - mae: 0.1702 - val_loss: 0.2996 - val_mae: 0.
2996
Epoch 443/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1692 - mae: 0.1692 - val_loss: 0.3443 - val_mae: 0.
3443
Epoch 444/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1673 - mae: 0.1673 - val_loss: 0.2319 - val_mae: 0.
2319
Epoch 445/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1664 - mae: 0.1664 - val_loss: 0.3321 - val_mae: 0.
3321
Epoch 446/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.2972 - val_mae: 0.
2972
Epoch 447/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.3302 - val_mae: 0.
3302
Epoch 448/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1579 - mae: 0.1579 - val_loss: 0.2667 - val_mae: 0.
2667
Epoch 449/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1642 - mae: 0.1642 - val_loss: 0.3449 - val_mae: 0.
3449
Epoch 450/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1776 - mae: 0.1776 - val_loss: 0.3876 - val_mae: 0.
3876
Epoch 451/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.2206 - val_mae: 0.
2206
Epoch 452/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1794 - mae: 0.1794 - val_loss: 0.3343 - val_mae: 0.
3343
Epoch 453/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1681 - mae: 0.1681 - val_loss: 0.3374 - val_mae: 0.
3374
Epoch 454/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1637 - mae: 0.1637 - val_loss: 0.2921 - val_mae: 0.
2921
Epoch 455/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.3351 - val_mae: 0.
3351
Epoch 456/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2462 - val_mae: 0.
2462
Epoch 457/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1723 - mae: 0.1723 - val_loss: 0.2881 - val_mae: 0.
2881
Epoch 458/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.3366 - val_mae: 0.
3366
Epoch 459/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2999 - val_mae: 0.
2999
Epoch 460/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.3196 - val_mae: 0.
3196
Epoch 461/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.3102 - val_mae: 0.
3102
Epoch 462/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1688 - mae: 0.1688 - val_loss: 0.2648 - val_mae: 0.
2648
Epoch 463/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1747 - mae: 0.1747 - val_loss: 0.3536 - val_mae: 0.
3536
Epoch 464/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1667 - mae: 0.1667 - val_loss: 0.2168 - val_mae: 0.
```

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2168
Epoch 465/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1731 - mae: 0.1731 - val_loss: 0.3739 - val_mae: 0.
3739
Epoch 466/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1796 - mae: 0.1796 - val_loss: 0.3329 - val_mae: 0.
3329
Epoch 467/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1691 - mae: 0.1691 - val_loss: 0.2499 - val_mae: 0.
2499
Epoch 468/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1628 - mae: 0.1628 - val_loss: 0.3703 - val_mae: 0.
3703
Epoch 469/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1669 - mae: 0.1669 - val_loss: 0.2643 - val_mae: 0.
2643
Epoch 470/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.3267 - val_mae: 0.
3267
Epoch 471/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1738 - mae: 0.1738 - val_loss: 0.4066 - val_mae: 0.
4066
Epoch 472/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1705 - mae: 0.1705 - val_loss: 0.2445 - val_mae: 0.
2445
Epoch 473/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1709 - mae: 0.1709 - val_loss: 0.2913 - val_mae: 0.
2913
Epoch 474/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1630 - mae: 0.1630 - val_loss: 0.3166 - val_mae: 0.
3166
Epoch 475/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2530 - val_mae: 0.
2530
Epoch 476/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1635 - mae: 0.1635 - val_loss: 0.3142 - val_mae: 0.
3142
Epoch 477/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2884 - val_mae: 0.
2884
Epoch 478/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.2348 - val_mae: 0.
2348
Epoch 479/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1687 - mae: 0.1687 - val_loss: 0.3172 - val_mae: 0.
3172
Epoch 480/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1731 - mae: 0.1731 - val_loss: 0.3317 - val_mae: 0.
3317
Epoch 481/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1634 - mae: 0.1634 - val_loss: 0.2440 - val_mae: 0.
2440
Epoch 482/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1625 - mae: 0.1625 - val_loss: 0.3298 - val_mae: 0.
3298
Epoch 483/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1659 - mae: 0.1659 - val_loss: 0.3044 - val_mae: 0.
3044
Epoch 484/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1648 - mae: 0.1648 - val_loss: 0.2458 - val_mae: 0.
2458
Epoch 485/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.3605 - val_mae: 0.
3605
Epoch 486/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1691 - mae: 0.1691 - val_loss: 0.3020 - val_mae: 0.
3020
Epoch 487/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2976 - val_mae: 0.
2976
Epoch 488/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2781 - val_mae: 0.
2781
Epoch 489/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1675 - mae: 0.1675 - val_loss: 0.2547 - val_mae: 0.
2547
Epoch 490/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.3847 - val_mae: 0.
3847
Epoch 491/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1723 - mae: 0.1723 - val_loss: 0.2758 - val_mae: 0.
```

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2758
Epoch 492/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1678 - mae: 0.1678 - val_loss: 0.2686 - val_mae: 0.
2686
Epoch 493/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.3080 - val_mae: 0.
3080
Epoch 494/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1672 - mae: 0.1672 - val_loss: 0.2414 - val_mae: 0.
2414
Epoch 495/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.3339 - val_mae: 0.
3339
Epoch 496/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2491 - val_mae: 0.
2491
Epoch 497/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1726 - mae: 0.1726 - val_loss: 0.2944 - val_mae: 0.
2944
Epoch 498/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1657 - mae: 0.1657 - val_loss: 0.3232 - val_mae: 0.
3232
Epoch 499/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1628 - mae: 0.1628 - val_loss: 0.2749 - val_mae: 0.
2749
Epoch 500/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.3649 - val_mae: 0.
3649
Epoch 501/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1717 - mae: 0.1717 - val_loss: 0.2965 - val_mae: 0.
2965
Epoch 502/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.2601 - val_mae: 0.
2601
Epoch 503/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.3310 - val_mae: 0.
3310
Epoch 504/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1727 - mae: 0.1727 - val_loss: 0.3134 - val_mae: 0.
3134
Epoch 505/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1709 - mae: 0.1709 - val_loss: 0.2364 - val_mae: 0.
2364
Epoch 506/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.3874 - val_mae: 0.
3874
Epoch 507/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1731 - mae: 0.1731 - val_loss: 0.2765 - val_mae: 0.
2765
Epoch 508/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1668 - mae: 0.1668 - val_loss: 0.2457 - val_mae: 0.
2457
Epoch 509/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.3092 - val_mae: 0.
3092
Epoch 510/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1676 - mae: 0.1676 - val_loss: 0.3235 - val_mae: 0.
3235
Epoch 511/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1683 - mae: 0.1683 - val_loss: 0.2483 - val_mae: 0.
2483
Epoch 512/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.3731 - val_mae: 0.
3731
Epoch 513/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1701 - mae: 0.1701 - val_loss: 0.2943 - val_mae: 0.
2943
Epoch 514/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2623 - val_mae: 0.
2623
Epoch 515/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2960 - val_mae: 0.
2960
Epoch 516/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.3273 - val_mae: 0.
3273
Epoch 517/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.2831 - val_mae: 0.
2831
Epoch 518/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.2502 - val_mae: 0.
```

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2502
Epoch 519/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.3216 - val_mae: 0.
3216
Epoch 520/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.3184 - val_mae: 0.
3184
Epoch 521/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.2584 - val_mae: 0.
2584
Epoch 522/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.2933 - val_mae: 0.
2933
Epoch 523/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.3073 - val_mae: 0.
3073
Epoch 524/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.3230 - val_mae: 0.
3230
Epoch 525/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1673 - mae: 0.1673 - val_loss: 0.3224 - val_mae: 0.
3224
Epoch 526/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2307 - val_mae: 0.
2307
Epoch 527/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1644 - mae: 0.1644 - val_loss: 0.3039 - val_mae: 0.
3039
Epoch 528/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.2918 - val_mae: 0.
2918
Epoch 529/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1619 - mae: 0.1619 - val_loss: 0.2113 - val_mae: 0.
2113
Epoch 530/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1721 - mae: 0.1721 - val_loss: 0.3124 - val_mae: 0.
3124
Epoch 531/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1690 - mae: 0.1690 - val_loss: 0.3399 - val_mae: 0.
3399
Epoch 532/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1664 - mae: 0.1664 - val_loss: 0.2508 - val_mae: 0.
2508
Epoch 533/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1634 - mae: 0.1634 - val_loss: 0.3569 - val_mae: 0.
3569
Epoch 534/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1669 - mae: 0.1669 - val_loss: 0.2820 - val_mae: 0.
2820
Epoch 535/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.3072 - val_mae: 0.
3072
Epoch 536/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1625 - mae: 0.1625 - val_loss: 0.3093 - val_mae: 0.
3093
Epoch 537/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1625 - mae: 0.1625 - val_loss: 0.2595 - val_mae: 0.
2595
Epoch 538/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2907 - val_mae: 0.
2907
Epoch 539/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2838 - val_mae: 0.
2838
Epoch 540/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2942 - val_mae: 0.
2942
Epoch 541/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1633 - mae: 0.1633 - val_loss: 0.3247 - val_mae: 0.
3247
Epoch 542/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1568 - mae: 0.1568 - val_loss: 0.2323 - val_mae: 0.
2323
Epoch 543/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1695 - mae: 0.1695 - val_loss: 0.2913 - val_mae: 0.
2913
Epoch 544/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1665 - mae: 0.1665 - val_loss: 0.3788 - val_mae: 0.
3788
Epoch 545/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1684 - mae: 0.1684 - val_loss: 0.2112 - val_mae: 0.
```

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2112
Epoch 546/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1684 - mae: 0.1684 - val_loss: 0.3169 - val_mae: 0.
3169
Epoch 547/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1648 - mae: 0.1648 - val_loss: 0.3070 - val_mae: 0.
3070
Epoch 548/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.1964 - val_mae: 0.
1964
Epoch 549/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1776 - mae: 0.1776 - val_loss: 0.2992 - val_mae: 0.
2992
Epoch 550/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2994 - val_mae: 0.
2994
Epoch 551/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2394 - val_mae: 0.
2394
Epoch 552/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1662 - mae: 0.1662 - val_loss: 0.2558 - val_mae: 0.
2558
Epoch 553/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2699 - val_mae: 0.
2699
Epoch 554/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2604 - val_mae: 0.
2604
Epoch 555/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2828 - val_mae: 0.
2828
Epoch 556/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2823 - val_mae: 0.
2823
Epoch 557/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2608 - val_mae: 0.
2608
Epoch 558/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.3031 - val_mae: 0.
3031
Epoch 559/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.2500 - val_mae: 0.
2500
Epoch 560/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1671 - mae: 0.1671 - val_loss: 0.2466 - val_mae: 0.
2466
Epoch 561/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1576 - mae: 0.1576 - val_loss: 0.3054 - val_mae: 0.
3054
Epoch 562/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2781 - val_mae: 0.
2781
Epoch 563/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2869 - val_mae: 0.
2869
Epoch 564/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.2352 - val_mae: 0.
2352
Epoch 565/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1685 - mae: 0.1685 - val_loss: 0.2863 - val_mae: 0.
2863
Epoch 566/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.3361 - val_mae: 0.
3361
Epoch 567/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1636 - mae: 0.1636 - val_loss: 0.2086 - val_mae: 0.
2086
Epoch 568/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1775 - mae: 0.1775 - val_loss: 0.2751 - val_mae: 0.
2751
Epoch 569/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.3143 - val_mae: 0.
3143
Epoch 570/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1658 - mae: 0.1658 - val_loss: 0.2124 - val_mae: 0.
2124
Epoch 571/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1675 - mae: 0.1675 - val_loss: 0.2903 - val_mae: 0.
2903
Epoch 572/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.3204 - val_mae: 0.
```

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3204
Epoch 573/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1637 - mae: 0.1637 - val_loss: 0.2407 - val_mae: 0.
2407
Epoch 574/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1696 - mae: 0.1696 - val_loss: 0.2284 - val_mae: 0.
2284
Epoch 575/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.3396 - val_mae: 0.
3396
Epoch 576/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1732 - mae: 0.1732 - val_loss: 0.2933 - val_mae: 0.
2933
Epoch 577/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1741 - mae: 0.1741 - val_loss: 0.2512 - val_mae: 0.
2512
Epoch 578/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1665 - mae: 0.1665 - val_loss: 0.3694 - val_mae: 0.
3694
Epoch 579/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1715 - mae: 0.1715 - val_loss: 0.2479 - val_mae: 0.
2479
Epoch 580/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.2606 - val_mae: 0.
2606
Epoch 581/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.2799 - val_mae: 0.
2799
Epoch 582/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.3336 - val_mae: 0.
3336
Epoch 583/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1690 - mae: 0.1690 - val_loss: 0.2738 - val_mae: 0.
2738
Epoch 584/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1643 - mae: 0.1643 - val_loss: 0.2693 - val_mae: 0.
2693
Epoch 585/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1708 - mae: 0.1708 - val_loss: 0.3169 - val_mae: 0.
3169
Epoch 586/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1624 - mae: 0.1624 - val_loss: 0.1987 - val_mae: 0.
1987
Epoch 587/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1691 - mae: 0.1691 - val_loss: 0.3210 - val_mae: 0.
3210
Epoch 588/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1783 - mae: 0.1783 - val_loss: 0.3301 - val_mae: 0.
3301
Epoch 589/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2181 - val_mae: 0.
2181
Epoch 590/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1660 - mae: 0.1660 - val_loss: 0.3002 - val_mae: 0.
3002
Epoch 591/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1698 - mae: 0.1698 - val_loss: 0.3314 - val_mae: 0.
3314
Epoch 592/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2236 - val_mae: 0.
2236
Epoch 593/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1662 - mae: 0.1662 - val_loss: 0.2706 - val_mae: 0.
2706
Epoch 594/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.2642 - val_mae: 0.
2642
Epoch 595/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1677 - mae: 0.1677 - val_loss: 0.2035 - val_mae: 0.
2035
Epoch 596/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1672 - mae: 0.1672 - val_loss: 0.3449 - val_mae: 0.
3449
Epoch 597/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1699 - mae: 0.1699 - val_loss: 0.2822 - val_mae: 0.
2822
Epoch 598/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2558 - val_mae: 0.
2558
Epoch 599/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.2750 - val_mae: 0.
```

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2750
Epoch 600/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1674 - mae: 0.1674 - val_loss: 0.3085 - val_mae: 0.
3085
Epoch 601/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1641 - mae: 0.1641 - val_loss: 0.2503 - val_mae: 0.
2503
Epoch 602/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1682 - mae: 0.1682 - val_loss: 0.3021 - val_mae: 0.
3021
Epoch 603/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2208 - val_mae: 0.
2208
Epoch 604/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1641 - mae: 0.1641 - val_loss: 0.2643 - val_mae: 0.
2643
Epoch 605/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2370 - val_mae: 0.
2370
Epoch 606/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1691 - mae: 0.1691 - val_loss: 0.2585 - val_mae: 0.
2585
Epoch 607/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1633 - mae: 0.1633 - val_loss: 0.2976 - val_mae: 0.
2976
Epoch 608/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2293 - val_mae: 0.
2293
Epoch 609/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.2894 - val_mae: 0.
2894
Epoch 610/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1571 - mae: 0.1571 - val_loss: 0.2082 - val_mae: 0.
2082
Epoch 611/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1768 - mae: 0.1768 - val_loss: 0.2879 - val_mae: 0.
2879
Epoch 612/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1911 - mae: 0.1911 - val_loss: 0.3448 - val_mae: 0.
3448
Epoch 613/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1588 - val_mae: 0.
1588
Epoch 614/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1903 - mae: 0.1903 - val_loss: 0.3309 - val_mae: 0.
3309
Epoch 615/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1872 - mae: 0.1872 - val_loss: 0.3841 - val_mae: 0.
3841
Epoch 616/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1657 - mae: 0.1657 - val_loss: 0.2164 - val_mae: 0.
2164
Epoch 617/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1720 - mae: 0.1720 - val_loss: 0.2927 - val_mae: 0.
2927
Epoch 618/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1788 - mae: 0.1788 - val_loss: 0.3746 - val_mae: 0.
3746
Epoch 619/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.1708 - val_mae: 0.
1708
Epoch 620/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1947 - mae: 0.1947 - val_loss: 0.2838 - val_mae: 0.
2838
Epoch 621/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.3463 - val_mae: 0.
3463
Epoch 622/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1681 - mae: 0.1681 - val_loss: 0.2409 - val_mae: 0.
2409
Epoch 623/2000
5/5 [==============================] - 0s 25ms/step - loss: 0.1654 - mae: 0.1654 - val_loss: 0.2396 - val_mae: 0.
2396
Epoch 624/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.3483 - val_mae: 0.
3483
Epoch 625/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1965 - mae: 0.1965 - val_loss: 0.3246 - val_mae: 0.
3246
Epoch 626/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1738 - mae: 0.1738 - val_loss: 0.1644 - val_mae: 0.
```

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1644
Epoch 627/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1690 - mae: 0.1690 - val_loss: 0.4075 - val_mae: 0.
4075
Epoch 628/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1960 - mae: 0.1960 - val_loss: 0.2675 - val_mae: 0.
2675
Epoch 629/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1708 - mae: 0.1708 - val_loss: 0.1889 - val_mae: 0.
1889
Epoch 630/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1703 - mae: 0.1703 - val_loss: 0.3371 - val_mae: 0.
3371
Epoch 631/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1649 - mae: 0.1649 - val_loss: 0.2706 - val_mae: 0.
2706
Epoch 632/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.3072 - val_mae: 0.
3072
Epoch 633/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2409 - val_mae: 0.
2409
Epoch 634/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1674 - mae: 0.1674 - val_loss: 0.2504 - val_mae: 0.
2504
Epoch 635/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.3010 - val_mae: 0.
3010
Epoch 636/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2160 - val_mae: 0.
2160
Epoch 637/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1724 - mae: 0.1724 - val_loss: 0.2851 - val_mae: 0.
2851
Epoch 638/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1749 - mae: 0.1749 - val_loss: 0.3506 - val_mae: 0.
3506
Epoch 639/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1624 - mae: 0.1624 - val_loss: 0.2056 - val_mae: 0.
2056
Epoch 640/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1685 - mae: 0.1685 - val_loss: 0.3043 - val_mae: 0.
3043
Epoch 641/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2764 - val_mae: 0.
2764
Epoch 642/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2826 - val_mae: 0.
2826
Epoch 643/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2744 - val_mae: 0.
2744
Epoch 644/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1654 - mae: 0.1654 - val_loss: 0.3077 - val_mae: 0.
3077
Epoch 645/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1657 - mae: 0.1657 - val_loss: 0.2375 - val_mae: 0.
2375
Epoch 646/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1702 - mae: 0.1702 - val_loss: 0.3523 - val_mae: 0.
3523
Epoch 647/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.2207 - val_mae: 0.
2207
Epoch 648/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1671 - mae: 0.1671 - val_loss: 0.2796 - val_mae: 0.
2796
Epoch 649/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2600 - val_mae: 0.
2600
Epoch 650/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1658 - mae: 0.1658 - val_loss: 0.2093 - val_mae: 0.
2093
Epoch 651/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.3314 - val_mae: 0.
3314
Epoch 652/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1785 - mae: 0.1785 - val_loss: 0.3559 - val_mae: 0.
3559
Epoch 653/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1655 - mae: 0.1655 - val_loss: 0.2047 - val_mae: 0.
```

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2047
Epoch 654/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1986 - mae: 0.1986 - val_loss: 0.2139 - val_mae: 0.
2139
Epoch 655/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.3547 - val_mae: 0.
3547
Epoch 656/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1701 - mae: 0.1701 - val_loss: 0.2307 - val_mae: 0.
2307
Epoch 657/2000
5/5 [==============================] - 0s 33ms/step - loss: 0.1572 - mae: 0.1572 - val_loss: 0.3350 - val_mae: 0.
3350
Epoch 658/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1757 - mae: 0.1757 - val_loss: 0.3049 - val_mae: 0.
3049
Epoch 659/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1619 - mae: 0.1619 - val_loss: 0.2341 - val_mae: 0.
2341
Epoch 660/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2819 - val_mae: 0.
2819
Epoch 661/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.3121 - val_mae: 0.
3121
Epoch 662/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1627 - mae: 0.1627 - val_loss: 0.2633 - val_mae: 0.
2633
Epoch 663/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.2220 - val_mae: 0.
2220
Epoch 664/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1645 - mae: 0.1645 - val_loss: 0.2972 - val_mae: 0.
2972
Epoch 665/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1728 - mae: 0.1728 - val_loss: 0.3341 - val_mae: 0.
3341
Epoch 666/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2362 - val_mae: 0.
2362
Epoch 667/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1670 - mae: 0.1670 - val_loss: 0.3314 - val_mae: 0.
3314
Epoch 668/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2562 - val_mae: 0.
2562
Epoch 669/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2585 - val_mae: 0.
2585
Epoch 670/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.2955 - val_mae: 0.
2955
Epoch 671/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2949 - val_mae: 0.
2949
Epoch 672/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2828 - val_mae: 0.
2828
Epoch 673/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.2690 - val_mae: 0.
2690
Epoch 674/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1635 - mae: 0.1635 - val_loss: 0.3278 - val_mae: 0.
3278
Epoch 675/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.2474 - val_mae: 0.
2474
Epoch 676/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2757 - val_mae: 0.
2757
Epoch 677/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1670 - mae: 0.1670 - val_loss: 0.3622 - val_mae: 0.
3622
Epoch 678/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.1892 - val_mae: 0.
1892
Epoch 679/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1866 - mae: 0.1866 - val_loss: 0.2280 - val_mae: 0.
2280
Epoch 680/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1602 - mae: 0.1602 - val_loss: 0.3011 - val_mae: 0.
```

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3011
Epoch 681/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2423 - val_mae: 0.
2423
Epoch 682/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.3005 - val_mae: 0.
3005
Epoch 683/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.2466 - val_mae: 0.
2466
Epoch 684/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1602 - mae: 0.1602 - val_loss: 0.2739 - val_mae: 0.
2739
Epoch 685/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.3166 - val_mae: 0.
3166
Epoch 686/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1765 - mae: 0.1765 - val_loss: 0.3318 - val_mae: 0.
3318
Epoch 687/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1576 - mae: 0.1576 - val_loss: 0.1827 - val_mae: 0.
1827
Epoch 688/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1742 - mae: 0.1742 - val_loss: 0.3054 - val_mae: 0.
3054
Epoch 689/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1749 - mae: 0.1749 - val_loss: 0.3294 - val_mae: 0.
3294
Epoch 690/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1696 - mae: 0.1696 - val_loss: 0.2161 - val_mae: 0.
2161
Epoch 691/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1634 - mae: 0.1634 - val_loss: 0.3356 - val_mae: 0.
3356
Epoch 692/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1680 - mae: 0.1680 - val_loss: 0.2718 - val_mae: 0.
2718
Epoch 693/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1644 - mae: 0.1644 - val_loss: 0.2164 - val_mae: 0.
2164
Epoch 694/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1662 - mae: 0.1662 - val_loss: 0.3020 - val_mae: 0.
3020
Epoch 695/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1663 - mae: 0.1663 - val_loss: 0.3247 - val_mae: 0.
3247
Epoch 696/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.2359 - val_mae: 0.
2359
Epoch 697/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1755 - mae: 0.1755 - val_loss: 0.2411 - val_mae: 0.
2411
Epoch 698/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.3124 - val_mae: 0.
3124
Epoch 699/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1645 - mae: 0.1645 - val_loss: 0.2576 - val_mae: 0.
2576
Epoch 700/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.3023 - val_mae: 0.
3023
Epoch 701/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2823 - val_mae: 0.
2823
Epoch 702/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.2577 - val_mae: 0.
2577
Epoch 703/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1650 - mae: 0.1650 - val_loss: 0.2566 - val_mae: 0.
2566
Epoch 704/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1672 - mae: 0.1672 - val_loss: 0.3421 - val_mae: 0.
3421
Epoch 705/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1665 - mae: 0.1665 - val_loss: 0.2164 - val_mae: 0.
2164
Epoch 706/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1655 - mae: 0.1655 - val_loss: 0.3055 - val_mae: 0.
3055
Epoch 707/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1673 - mae: 0.1673 - val_loss: 0.3749 - val_mae: 0.
```

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3749
Epoch 708/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1700 - mae: 0.1700 - val_loss: 0.2260 - val_mae: 0.
2260
Epoch 709/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1730 - mae: 0.1730 - val_loss: 0.2616 - val_mae: 0.
2616
Epoch 710/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1722 - mae: 0.1722 - val_loss: 0.3700 - val_mae: 0.
3700
Epoch 711/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1746 - mae: 0.1746 - val_loss: 0.2516 - val_mae: 0.
2516
Epoch 712/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2583 - val_mae: 0.
2583
Epoch 713/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1632 - mae: 0.1632 - val_loss: 0.2321 - val_mae: 0.
2321
Epoch 714/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.2907 - val_mae: 0.
2907
Epoch 715/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1706 - mae: 0.1706 - val_loss: 0.3306 - val_mae: 0.
3306
Epoch 716/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.1562 - val_mae: 0.
1562
Epoch 717/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.2134 - mae: 0.2134 - val_loss: 0.2626 - val_mae: 0.
2626
Epoch 718/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1838 - mae: 0.1838 - val_loss: 0.3883 - val_mae: 0.
3883
Epoch 719/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1689 - mae: 0.1689 - val_loss: 0.1852 - val_mae: 0.
1852
Epoch 720/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1701 - mae: 0.1701 - val_loss: 0.3157 - val_mae: 0.
3157
Epoch 721/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1831 - mae: 0.1831 - val_loss: 0.3384 - val_mae: 0.
3384
Epoch 722/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1720 - mae: 0.1720 - val_loss: 0.1775 - val_mae: 0.
1775
Epoch 723/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1650 - mae: 0.1650 - val_loss: 0.3525 - val_mae: 0.
3525
Epoch 724/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1822 - mae: 0.1822 - val_loss: 0.2980 - val_mae: 0.
2980
Epoch 725/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.1783 - val_mae: 0.
1783
Epoch 726/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1753 - mae: 0.1753 - val_loss: 0.2536 - val_mae: 0.
2536
Epoch 727/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2670 - val_mae: 0.
2670
Epoch 728/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2456 - val_mae: 0.
2456
Epoch 729/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.3340 - val_mae: 0.
3340
Epoch 730/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1706 - mae: 0.1706 - val_loss: 0.3060 - val_mae: 0.
3060
Epoch 731/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1675 - mae: 0.1675 - val_loss: 0.2511 - val_mae: 0.
2511
Epoch 732/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1643 - mae: 0.1643 - val_loss: 0.2908 - val_mae: 0.
2908
Epoch 733/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.2281 - val_mae: 0.
2281
Epoch 734/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2963 - val_mae: 0.
```

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2963
Epoch 735/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1579 - mae: 0.1579 - val_loss: 0.2315 - val_mae: 0.
2315
Epoch 736/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1708 - mae: 0.1708 - val_loss: 0.2435 - val_mae: 0.
2435
Epoch 737/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.3678 - val_mae: 0.
3678
Epoch 738/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1797 - mae: 0.1797 - val_loss: 0.2648 - val_mae: 0.
2648
Epoch 739/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1670 - mae: 0.1670 - val_loss: 0.2025 - val_mae: 0.
2025
Epoch 740/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.3549 - val_mae: 0.
3549
Epoch 741/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1802 - mae: 0.1802 - val_loss: 0.2946 - val_mae: 0.
2946
Epoch 742/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1685 - mae: 0.1685 - val_loss: 0.1997 - val_mae: 0.
1997
Epoch 743/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.2943 - val_mae: 0.
2943
Epoch 744/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2814 - val_mae: 0.
2814
Epoch 745/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2668 - val_mae: 0.
2668
Epoch 746/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2593 - val_mae: 0.
2593
Epoch 747/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1651 - mae: 0.1651 - val_loss: 0.3535 - val_mae: 0.
3535
Epoch 748/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1719 - mae: 0.1719 - val_loss: 0.2809 - val_mae: 0.
2809
Epoch 749/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2555 - val_mae: 0.
2555
Epoch 750/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2883 - val_mae: 0.
2883
Epoch 751/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1619 - mae: 0.1619 - val_loss: 0.2726 - val_mae: 0.
2726
Epoch 752/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1646 - mae: 0.1646 - val_loss: 0.2343 - val_mae: 0.
2343
Epoch 753/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1637 - mae: 0.1637 - val_loss: 0.3067 - val_mae: 0.
3067
Epoch 754/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2297 - val_mae: 0.
2297
Epoch 755/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1634 - mae: 0.1634 - val_loss: 0.2850 - val_mae: 0.
2850
Epoch 756/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2762 - val_mae: 0.
2762
Epoch 757/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2636 - val_mae: 0.
2636
Epoch 758/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2941 - val_mae: 0.
2941
Epoch 759/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2161 - val_mae: 0.
2161
Epoch 760/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2874 - val_mae: 0.
2874
Epoch 761/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2738 - val_mae: 0.
```

2738
Epoch 762/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2588 - val_mae: 0.
2588
Epoch 763/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2520 - val_mae: 0.
2520
Epoch 764/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.2579 - val_mae: 0.
2579
Epoch 765/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.2959 - val_mae: 0.
2959
Epoch 766/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2254 - val_mae: 0.
2254
Epoch 767/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1624 - mae: 0.1624 - val_loss: 0.2496 - val_mae: 0.
2496
Epoch 768/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2362 - val_mae: 0.
2362
Epoch 769/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.2348 - val_mae: 0.
2348
Epoch 770/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2859 - val_mae: 0.
2859
Epoch 771/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1632 - mae: 0.1632 - val_loss: 0.2564 - val_mae: 0.
2564
Epoch 772/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1692 - mae: 0.1692 - val_loss: 0.2116 - val_mae: 0.
2116
Epoch 773/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1566 - mae: 0.1566 - val_loss: 0.3478 - val_mae: 0.
3478
Epoch 774/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1777 - mae: 0.1777 - val_loss: 0.2595 - val_mae: 0.
2595
Epoch 775/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1716 - mae: 0.1716 - val_loss: 0.2084 - val_mae: 0.
2084
Epoch 776/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.3502 - val_mae: 0.
3502
Epoch 777/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1710 - mae: 0.1710 - val_loss: 0.2431 - val_mae: 0.
2431
Epoch 778/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1630 - mae: 0.1630 - val_loss: 0.2700 - val_mae: 0.
2700
Epoch 779/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.3211 - val_mae: 0.
3211
Epoch 780/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.2410 - val_mae: 0.
2410
Epoch 781/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.2153 - val_mae: 0.
2153
Epoch 782/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.2775 - val_mae: 0.
2775
Epoch 783/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2924 - val_mae: 0.
2924
Epoch 784/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2335 - val_mae: 0.
2335
Epoch 785/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1699 - mae: 0.1699 - val_loss: 0.2482 - val_mae: 0.
2482
Epoch 786/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.3257 - val_mae: 0.
3257
Epoch 787/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1644 - mae: 0.1644 - val_loss: 0.2434 - val_mae: 0.
2434
Epoch 788/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1632 - mae: 0.1632 - val_loss: 0.1972 - val_mae: 0.

```
1972
Epoch 789/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1672 - mae: 0.1672 - val_loss: 0.2817 - val_mae: 0.
2817
Epoch 790/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.3049 - val_mae: 0.
3049
Epoch 791/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1701 - mae: 0.1701 - val_loss: 0.2937 - val_mae: 0.
2937
Epoch 792/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2351 - val_mae: 0.
2351
Epoch 793/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2531 - val_mae: 0.
2531
Epoch 794/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.1929 - val_mae: 0.
1929
Epoch 795/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1681 - mae: 0.1681 - val_loss: 0.3009 - val_mae: 0.
3009
Epoch 796/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1831 - mae: 0.1831 - val_loss: 0.3865 - val_mae: 0.
3865
Epoch 797/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1796 - mae: 0.1796 - val_loss: 0.2322 - val_mae: 0.
2322
Epoch 798/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2831 - val_mae: 0.
2831
Epoch 799/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1647 - mae: 0.1647 - val_loss: 0.2855 - val_mae: 0.
2855
Epoch 800/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1686 - mae: 0.1686 - val_loss: 0.1793 - val_mae: 0.
1793
Epoch 801/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1683 - mae: 0.1683 - val_loss: 0.2941 - val_mae: 0.
2941
Epoch 802/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2504 - val_mae: 0.
2504
Epoch 803/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1651 - mae: 0.1651 - val_loss: 0.2341 - val_mae: 0.
2341
Epoch 804/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.3121 - val_mae: 0.
3121
Epoch 805/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2087 - val_mae: 0.
2087
Epoch 806/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1744 - mae: 0.1744 - val_loss: 0.1981 - val_mae: 0.
1981
Epoch 807/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1679 - mae: 0.1679 - val_loss: 0.2613 - val_mae: 0.
2613
Epoch 808/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1577 - mae: 0.1577 - val_loss: 0.3129 - val_mae: 0.
3129
Epoch 809/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1666 - mae: 0.1666 - val_loss: 0.2692 - val_mae: 0.
2692
Epoch 810/2000
5/5 [==============================] - ETA: 0s - loss: 0.1783 - mae: 0.178 - 0s 10ms/step - loss: 0.1721 - mae:
 0.1721 - val_loss: 0.2052 - val_mae: 0.2052
Epoch 811/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.3152 - val_mae: 0.
3152
Epoch 812/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.2133 - val_mae: 0.
2133
Epoch 813/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1812 - mae: 0.1812 - val_loss: 0.2201 - val_mae: 0.
2201
Epoch 814/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.3254 - val_mae: 0.
3254
Epoch 815/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.2337 - val_mae: 0.
```

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2337
Epoch 816/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1645 - mae: 0.1645 - val_loss: 0.2665 - val_mae: 0.
2665
Epoch 817/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.3534 - val_mae: 0.
3534
Epoch 818/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1763 - mae: 0.1763 - val_loss: 0.2555 - val_mae: 0.
2555
Epoch 819/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1602 - mae: 0.1602 - val_loss: 0.1893 - val_mae: 0.
1893
Epoch 820/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1689 - mae: 0.1689 - val_loss: 0.2857 - val_mae: 0.
2857
Epoch 821/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1686 - mae: 0.1686 - val_loss: 0.3378 - val_mae: 0.
3378
Epoch 822/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1704 - mae: 0.1704 - val_loss: 0.2479 - val_mae: 0.
2479
Epoch 823/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2196 - val_mae: 0.
2196
Epoch 824/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1660 - mae: 0.1660 - val_loss: 0.2418 - val_mae: 0.
2418
Epoch 825/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.2733 - val_mae: 0.
2733
Epoch 826/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.2116 - val_mae: 0.
2116
Epoch 827/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.2569 - val_mae: 0.
2569
Epoch 828/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1720 - mae: 0.1720 - val_loss: 0.2269 - val_mae: 0.
2269
Epoch 829/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1691 - mae: 0.1691 - val_loss: 0.3225 - val_mae: 0.
3225
Epoch 830/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.2341 - val_mae: 0.
2341
Epoch 831/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2532 - val_mae: 0.
2532
Epoch 832/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1618 - mae: 0.1618 - val_loss: 0.2476 - val_mae: 0.
2476
Epoch 833/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1628 - mae: 0.1628 - val_loss: 0.1914 - val_mae: 0.
1914
Epoch 834/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1676 - mae: 0.1676 - val_loss: 0.2714 - val_mae: 0.
2714
Epoch 835/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2663 - val_mae: 0.
2663
Epoch 836/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.2750 - val_mae: 0.
2750
Epoch 837/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2420 - val_mae: 0.
2420
Epoch 838/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.3001 - val_mae: 0.
3001
Epoch 839/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1625 - mae: 0.1625 - val_loss: 0.2688 - val_mae: 0.
2688
Epoch 840/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2679 - val_mae: 0.
2679
Epoch 841/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1636 - mae: 0.1636 - val_loss: 0.2051 - val_mae: 0.
2051
Epoch 842/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.3004 - val_mae: 0.
```

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3004
Epoch 843/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1690 - mae: 0.1690 - val_loss: 0.2804 - val_mae: 0.
2804
Epoch 844/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.1723 - val_mae: 0.
1723
Epoch 845/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1664 - mae: 0.1664 - val_loss: 0.3270 - val_mae: 0.
3270
Epoch 846/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1771 - mae: 0.1771 - val_loss: 0.2998 - val_mae: 0.
2998
Epoch 847/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1700 - mae: 0.1700 - val_loss: 0.1992 - val_mae: 0.
1992
Epoch 848/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2548 - val_mae: 0.
2548
Epoch 849/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2332 - val_mae: 0.
2332
Epoch 850/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.2691 - val_mae: 0.
2691
Epoch 851/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2750 - val_mae: 0.
2750
Epoch 852/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2317 - val_mae: 0.
2317
Epoch 853/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2753 - val_mae: 0.
2753
Epoch 854/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1633 - mae: 0.1633 - val_loss: 0.3242 - val_mae: 0.
3242
Epoch 855/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1671 - mae: 0.1671 - val_loss: 0.2611 - val_mae: 0.
2611
Epoch 856/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2625 - val_mae: 0.
2625
Epoch 857/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.3285 - val_mae: 0.
3285
Epoch 858/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1653 - mae: 0.1653 - val_loss: 0.2461 - val_mae: 0.
2461
Epoch 859/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.3046 - val_mae: 0.
3046
Epoch 860/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2341 - val_mae: 0.
2341
Epoch 861/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1624 - mae: 0.1624 - val_loss: 0.2372 - val_mae: 0.
2372
Epoch 862/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2905 - val_mae: 0.
2905
Epoch 863/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2678 - val_mae: 0.
2678
Epoch 864/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2338 - val_mae: 0.
2338
Epoch 865/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1663 - mae: 0.1663 - val_loss: 0.2487 - val_mae: 0.
2487
Epoch 866/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1573 - mae: 0.1573 - val_loss: 0.3430 - val_mae: 0.
3430
Epoch 867/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1748 - mae: 0.1748 - val_loss: 0.2629 - val_mae: 0.
2629
Epoch 868/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1575 - mae: 0.1575 - val_loss: 0.2334 - val_mae: 0.
2334
Epoch 869/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2642 - val_mae: 0.
```

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2642
Epoch 870/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2796 - val_mae: 0.
2796
Epoch 871/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2287 - val_mae: 0.
2287
Epoch 872/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2922 - val_mae: 0.
2922
Epoch 873/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2536 - val_mae: 0.
2536
Epoch 874/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2708 - val_mae: 0.
2708
Epoch 875/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2495 - val_mae: 0.
2495
Epoch 876/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1618 - mae: 0.1618 - val_loss: 0.2367 - val_mae: 0.
2367
Epoch 877/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.3052 - val_mae: 0.
3052
Epoch 878/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1876 - mae: 0.1876 - val_loss: 0.3110 - val_mae: 0.
3110
Epoch 879/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1731 - mae: 0.1731 - val_loss: 0.1791 - val_mae: 0.
1791
Epoch 880/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.3320 - val_mae: 0.
3320
Epoch 881/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1697 - mae: 0.1697 - val_loss: 0.2584 - val_mae: 0.
2584
Epoch 882/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1634 - mae: 0.1634 - val_loss: 0.2294 - val_mae: 0.
2294
Epoch 883/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.3429 - val_mae: 0.
3429
Epoch 884/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1647 - mae: 0.1647 - val_loss: 0.2099 - val_mae: 0.
2099
Epoch 885/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1776 - mae: 0.1776 - val_loss: 0.2227 - val_mae: 0.
2227
Epoch 886/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.3033 - val_mae: 0.
3033
Epoch 887/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1627 - mae: 0.1627 - val_loss: 0.2447 - val_mae: 0.
2447
Epoch 888/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2725 - val_mae: 0.
2725
Epoch 889/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2390 - val_mae: 0.
2390
Epoch 890/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1674 - mae: 0.1674 - val_loss: 0.2780 - val_mae: 0.
2780
Epoch 891/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2198 - val_mae: 0.
2198
Epoch 892/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2987 - val_mae: 0.
2987
Epoch 893/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2289 - val_mae: 0.
2289
Epoch 894/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2441 - val_mae: 0.
2441
Epoch 895/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2530 - val_mae: 0.
2530
Epoch 896/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2545 - val_mae: 0.
```

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2545
Epoch 897/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2734 - val_mae: 0.
2734
Epoch 898/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1673 - mae: 0.1673 - val_loss: 0.3409 - val_mae: 0.
3409
Epoch 899/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1644 - mae: 0.1644 - val_loss: 0.1764 - val_mae: 0.
1764
Epoch 900/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1978 - mae: 0.1978 - val_loss: 0.1976 - val_mae: 0.
1976
Epoch 901/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.3575 - val_mae: 0.
3575
Epoch 902/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1744 - mae: 0.1744 - val_loss: 0.2497 - val_mae: 0.
2497
Epoch 903/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.1967 - val_mae: 0.
1967
Epoch 904/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1696 - mae: 0.1696 - val_loss: 0.2622 - val_mae: 0.
2622
Epoch 905/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1684 - mae: 0.1684 - val_loss: 0.3228 - val_mae: 0.
3228
Epoch 906/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1624 - mae: 0.1624 - val_loss: 0.1774 - val_mae: 0.
1774
Epoch 907/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1803 - mae: 0.1803 - val_loss: 0.2607 - val_mae: 0.
2607
Epoch 908/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1670 - mae: 0.1670 - val_loss: 0.3550 - val_mae: 0.
3550
Epoch 909/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1698 - mae: 0.1698 - val_loss: 0.2086 - val_mae: 0.
2086
Epoch 910/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1791 - mae: 0.1791 - val_loss: 0.2150 - val_mae: 0.
2150
Epoch 911/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1628 - mae: 0.1628 - val_loss: 0.2943 - val_mae: 0.
2943
Epoch 912/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1562 - mae: 0.1562 - val_loss: 0.1981 - val_mae: 0.
1981
Epoch 913/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1745 - mae: 0.1745 - val_loss: 0.2192 - val_mae: 0.
2192
Epoch 914/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2544 - val_mae: 0.
2544
Epoch 915/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.1994 - val_mae: 0.
1994
Epoch 916/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1679 - mae: 0.1679 - val_loss: 0.2734 - val_mae: 0.
2734
Epoch 917/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1750 - mae: 0.1750 - val_loss: 0.3098 - val_mae: 0.
3098
Epoch 918/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.1696 - val_mae: 0.
1696
Epoch 919/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1712 - mae: 0.1712 - val_loss: 0.2880 - val_mae: 0.
2880
Epoch 920/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.3040 - val_mae: 0.
3040
Epoch 921/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1645 - mae: 0.1645 - val_loss: 0.2502 - val_mae: 0.
2502
Epoch 922/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2802 - val_mae: 0.
2802
Epoch 923/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2360 - val_mae: 0.
```

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2360
Epoch 924/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2802 - val_mae: 0.
2802
Epoch 925/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2687 - val_mae: 0.
2687
Epoch 926/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2672 - val_mae: 0.
2672
Epoch 927/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2616 - val_mae: 0.
2616
Epoch 928/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1716 - mae: 0.1716 - val_loss: 0.2080 - val_mae: 0.
2080
Epoch 929/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1639 - mae: 0.1639 - val_loss: 0.3162 - val_mae: 0.
3162
Epoch 930/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1653 - mae: 0.1653 - val_loss: 0.2669 - val_mae: 0.
2669
Epoch 931/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2695 - val_mae: 0.
2695
Epoch 932/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2749 - val_mae: 0.
2749
Epoch 933/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.2415 - val_mae: 0.
2415
Epoch 934/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2160 - val_mae: 0.
2160
Epoch 935/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.2680 - val_mae: 0.
2680
Epoch 936/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1627 - mae: 0.1627 - val_loss: 0.3133 - val_mae: 0.
3133
Epoch 937/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1666 - mae: 0.1666 - val_loss: 0.2266 - val_mae: 0.
2266
Epoch 938/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1579 - mae: 0.1579 - val_loss: 0.2868 - val_mae: 0.
2868
Epoch 939/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2672 - val_mae: 0.
2672
Epoch 940/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.2415 - val_mae: 0.
2415
Epoch 941/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2976 - val_mae: 0.
2976
Epoch 942/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.2476 - val_mae: 0.
2476
Epoch 943/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2194 - val_mae: 0.
2194
Epoch 944/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1636 - mae: 0.1636 - val_loss: 0.2436 - val_mae: 0.
2436
Epoch 945/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.3083 - val_mae: 0.
3083
Epoch 946/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1675 - mae: 0.1675 - val_loss: 0.2668 - val_mae: 0.
2668
Epoch 947/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.1974 - val_mae: 0.
1974
Epoch 948/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1705 - mae: 0.1705 - val_loss: 0.2145 - val_mae: 0.
2145
Epoch 949/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2811 - val_mae: 0.
2811
Epoch 950/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2632 - val_mae: 0.
```

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2632
Epoch 951/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2468 - val_mae: 0.
2468
Epoch 952/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2659 - val_mae: 0.
2659
Epoch 953/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1633 - mae: 0.1633 - val_loss: 0.2870 - val_mae: 0.
2870
Epoch 954/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1645 - mae: 0.1645 - val_loss: 0.2327 - val_mae: 0.
2327
Epoch 955/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2913 - val_mae: 0.
2913
Epoch 956/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2636 - val_mae: 0.
2636
Epoch 957/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2356 - val_mae: 0.
2356
Epoch 958/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2561 - val_mae: 0.
2561
Epoch 959/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.2385 - val_mae: 0.
2385
Epoch 960/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.1969 - val_mae: 0.
1969
Epoch 961/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1614 - mae: 0.1614 - val_loss: 0.3066 - val_mae: 0.
3066
Epoch 962/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2465 - val_mae: 0.
2465
Epoch 963/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2534 - val_mae: 0.
2534
Epoch 964/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2594 - val_mae: 0.
2594
Epoch 965/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2466 - val_mae: 0.
2466
Epoch 966/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2451 - val_mae: 0.
2451
Epoch 967/2000
5/5 [==============================] - 0s 33ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.2263 - val_mae: 0.
2263
Epoch 968/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.2506 - val_mae: 0.
2506
Epoch 969/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1657 - mae: 0.1657 - val_loss: 0.1981 - val_mae: 0.
1981
Epoch 970/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1643 - mae: 0.1643 - val_loss: 0.2852 - val_mae: 0.
2852
Epoch 971/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2317 - val_mae: 0.
2317
Epoch 972/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2840 - val_mae: 0.
2840
Epoch 973/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1655 - mae: 0.1655 - val_loss: 0.2911 - val_mae: 0.
2911
Epoch 974/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1619 - mae: 0.1619 - val_loss: 0.2130 - val_mae: 0.
2130
Epoch 975/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.2680 - val_mae: 0.
2680
Epoch 976/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.3187 - val_mae: 0.
3187
Epoch 977/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1701 - mae: 0.1701 - val_loss: 0.2746 - val_mae: 0.
```

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2746
Epoch 978/2000
5/5 [==============================] - 0s 37ms/step - loss: 0.1576 - mae: 0.1576 - val_loss: 0.2526 - val_mae: 0.
2526
Epoch 979/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.2663 - val_mae: 0.
2663
Epoch 980/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2706 - val_mae: 0.
2706
Epoch 981/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2702 - val_mae: 0.
2702
Epoch 982/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2603 - val_mae: 0.
2603
Epoch 983/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2644 - val_mae: 0.
2644
Epoch 984/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1641 - mae: 0.1641 - val_loss: 0.1694 - val_mae: 0.
1694
Epoch 985/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1724 - mae: 0.1724 - val_loss: 0.3064 - val_mae: 0.
3064
Epoch 986/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1665 - mae: 0.1665 - val_loss: 0.2596 - val_mae: 0.
2596
Epoch 987/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1673 - mae: 0.1673 - val_loss: 0.1938 - val_mae: 0.
1938
Epoch 988/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1634 - mae: 0.1634 - val_loss: 0.2715 - val_mae: 0.
2715
Epoch 989/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1609 - mae: 0.1609 - val_loss: 0.2839 - val_mae: 0.
2839
Epoch 990/2000
5/5 [==============================] - 0s 32ms/step - loss: 0.1619 - mae: 0.1619 - val_loss: 0.2648 - val_mae: 0.
2648
Epoch 991/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.2531 - val_mae: 0.
2531
Epoch 992/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1578 - mae: 0.1578 - val_loss: 0.2109 - val_mae: 0.
2109
Epoch 993/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.2451 - val_mae: 0.
2451
Epoch 994/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.3068 - val_mae: 0.
3068
Epoch 995/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1659 - mae: 0.1659 - val_loss: 0.2475 - val_mae: 0.
2475
Epoch 996/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.2087 - val_mae: 0.
2087
Epoch 997/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2871 - val_mae: 0.
2871
Epoch 998/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2648 - val_mae: 0.
2648
Epoch 999/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.2724 - val_mae: 0.
2724
Epoch 1000/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2596 - val_mae: 0.
2596
Epoch 1001/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2584 - val_mae: 0.
2584
Epoch 1002/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1636 - mae: 0.1636 - val_loss: 0.2654 - val_mae: 0.
2654
Epoch 1003/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1723 - mae: 0.1723 - val_loss: 0.3290 - val_mae: 0.
3290
Epoch 1004/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1643 - mae: 0.1643 - val_loss: 0.2335 - val_mae: 0.
```

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2335
Epoch 1005/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2588 - val_mae: 0.
2588
Epoch 1006/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2561 - val_mae: 0.
2561
Epoch 1007/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2450 - val_mae: 0.
2450
Epoch 1008/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.2579 - val_mae: 0.
2579
Epoch 1009/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2488 - val_mae: 0.
2488
Epoch 1010/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2486 - val_mae: 0.
2486
Epoch 1011/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2312 - val_mae: 0.
2312
Epoch 1012/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2784 - val_mae: 0.
2784
Epoch 1013/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2109 - val_mae: 0.
2109
Epoch 1014/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1777 - mae: 0.1777 - val_loss: 0.2155 - val_mae: 0.
2155
Epoch 1015/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1748 - mae: 0.1748 - val_loss: 0.3155 - val_mae: 0.
3155
Epoch 1016/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1669 - mae: 0.1669 - val_loss: 0.1767 - val_mae: 0.
1767
Epoch 1017/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1667 - mae: 0.1667 - val_loss: 0.2813 - val_mae: 0.
2813
Epoch 1018/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2578 - val_mae: 0.
2578
Epoch 1019/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1577 - mae: 0.1577 - val_loss: 0.2232 - val_mae: 0.
2232
Epoch 1020/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1602 - mae: 0.1602 - val_loss: 0.2677 - val_mae: 0.
2677
Epoch 1021/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1654 - mae: 0.1654 - val_loss: 0.2859 - val_mae: 0.
2859
Epoch 1022/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1575 - mae: 0.1575 - val_loss: 0.2146 - val_mae: 0.
2146
Epoch 1023/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.2173 - val_mae: 0.
2173
Epoch 1024/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1630 - mae: 0.1630 - val_loss: 0.2571 - val_mae: 0.
2571
Epoch 1025/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1704 - mae: 0.1704 - val_loss: 0.3176 - val_mae: 0.
3176
Epoch 1026/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1636 - mae: 0.1636 - val_loss: 0.1989 - val_mae: 0.
1989
Epoch 1027/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1634 - mae: 0.1634 - val_loss: 0.2768 - val_mae: 0.
2768
Epoch 1028/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2365 - val_mae: 0.
2365
Epoch 1029/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2403 - val_mae: 0.
2403
Epoch 1030/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.2689 - val_mae: 0.
2689
Epoch 1031/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2533 - val_mae: 0.
```

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2533
Epoch 1032/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2439 - val_mae: 0.
2439
Epoch 1033/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2668 - val_mae: 0.
2668
Epoch 1034/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2477 - val_mae: 0.
2477
Epoch 1035/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2337 - val_mae: 0.
2337
Epoch 1036/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1644 - mae: 0.1644 - val_loss: 0.2760 - val_mae: 0.
2760
Epoch 1037/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.1884 - val_mae: 0.
1884
Epoch 1038/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1634 - mae: 0.1634 - val_loss: 0.2896 - val_mae: 0.
2896
Epoch 1039/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1675 - mae: 0.1675 - val_loss: 0.2684 - val_mae: 0.
2684
Epoch 1040/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1705 - mae: 0.1705 - val_loss: 0.1700 - val_mae: 0.
1700
Epoch 1041/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1643 - mae: 0.1643 - val_loss: 0.3239 - val_mae: 0.
3239
Epoch 1042/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1917 - mae: 0.1917 - val_loss: 0.3072 - val_mae: 0.
3072
Epoch 1043/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1668 - mae: 0.1668 - val_loss: 0.1616 - val_mae: 0.
1616
Epoch 1044/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1767 - mae: 0.1767 - val_loss: 0.3262 - val_mae: 0.
3262
Epoch 1045/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1708 - mae: 0.1708 - val_loss: 0.2733 - val_mae: 0.
2733
Epoch 1046/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2591 - val_mae: 0.
2591
Epoch 1047/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2726 - val_mae: 0.
2726
Epoch 1048/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2844 - val_mae: 0.
2844
Epoch 1049/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1636 - mae: 0.1636 - val_loss: 0.2785 - val_mae: 0.
2785
Epoch 1050/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1654 - mae: 0.1654 - val_loss: 0.1746 - val_mae: 0.
1746
Epoch 1051/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1698 - mae: 0.1698 - val_loss: 0.3545 - val_mae: 0.
3545
Epoch 1052/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1794 - mae: 0.1794 - val_loss: 0.2373 - val_mae: 0.
2373
Epoch 1053/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1644 - mae: 0.1644 - val_loss: 0.1945 - val_mae: 0.
1945
Epoch 1054/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1632 - mae: 0.1632 - val_loss: 0.3160 - val_mae: 0.
3160
Epoch 1055/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1684 - mae: 0.1684 - val_loss: 0.2546 - val_mae: 0.
2546
Epoch 1056/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.1780 - val_mae: 0.
1780
Epoch 1057/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1773 - mae: 0.1773 - val_loss: 0.2646 - val_mae: 0.
2646
Epoch 1058/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1671 - mae: 0.1671 - val_loss: 0.3126 - val_mae: 0.
```

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3126
Epoch 1059/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2176 - val_mae: 0.
2176
Epoch 1060/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1609 - mae: 0.1609 - val_loss: 0.2678 - val_mae: 0.
2678
Epoch 1061/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2555 - val_mae: 0.
2555
Epoch 1062/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1560 - mae: 0.1560 - val_loss: 0.1885 - val_mae: 0.
1885
Epoch 1063/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1659 - mae: 0.1659 - val_loss: 0.2731 - val_mae: 0.
2731
Epoch 1064/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2339 - val_mae: 0.
2339
Epoch 1065/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1645 - mae: 0.1645 - val_loss: 0.1990 - val_mae: 0.
1990
Epoch 1066/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1609 - mae: 0.1609 - val_loss: 0.3113 - val_mae: 0.
3113
Epoch 1067/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1663 - mae: 0.1663 - val_loss: 0.2386 - val_mae: 0.
2386
Epoch 1068/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.1984 - val_mae: 0.
1984
Epoch 1069/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1643 - mae: 0.1643 - val_loss: 0.3351 - val_mae: 0.
3351
Epoch 1070/2000
5/5 [==============================] - 0s 45ms/step - loss: 0.1933 - mae: 0.1933 - val_loss: 0.3073 - val_mae: 0.
3073
Epoch 1071/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1565 - mae: 0.1565 - val_loss: 0.1393 - val_mae: 0.
1393
Epoch 1072/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.2186 - mae: 0.2186 - val_loss: 0.2675 - val_mae: 0.
2675
Epoch 1073/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1752 - mae: 0.1752 - val_loss: 0.3702 - val_mae: 0.
3702
Epoch 1074/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1715 - mae: 0.1715 - val_loss: 0.1850 - val_mae: 0.
1850
Epoch 1075/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1713 - mae: 0.1713 - val_loss: 0.2619 - val_mae: 0.
2619
Epoch 1076/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1644 - mae: 0.1644 - val_loss: 0.3094 - val_mae: 0.
3094
Epoch 1077/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1576 - mae: 0.1576 - val_loss: 0.1710 - val_mae: 0.
1710
Epoch 1078/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1875 - mae: 0.1875 - val_loss: 0.2187 - val_mae: 0.
2187
Epoch 1079/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1618 - mae: 0.1618 - val_loss: 0.2996 - val_mae: 0.
2996
Epoch 1080/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2244 - val_mae: 0.
2244
Epoch 1081/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1640 - mae: 0.1640 - val_loss: 0.2052 - val_mae: 0.
2052
Epoch 1082/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2870 - val_mae: 0.
2870
Epoch 1083/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.2308 - val_mae: 0.
2308
Epoch 1084/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.2579 - val_mae: 0.
2579
Epoch 1085/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1568 - mae: 0.1568 - val_loss: 0.1985 - val_mae: 0.
```

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1985
Epoch 1086/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1682 - mae: 0.1682 - val_loss: 0.2453 - val_mae: 0.
2453
Epoch 1087/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1655 - mae: 0.1655 - val_loss: 0.2769 - val_mae: 0.
2769
Epoch 1088/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.1986 - val_mae: 0.
1986
Epoch 1089/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.2781 - val_mae: 0.
2781
Epoch 1090/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1645 - mae: 0.1645 - val_loss: 0.2601 - val_mae: 0.
2601
Epoch 1091/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1645 - mae: 0.1645 - val_loss: 0.2055 - val_mae: 0.
2055
Epoch 1092/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1625 - mae: 0.1625 - val_loss: 0.2966 - val_mae: 0.
2966
Epoch 1093/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2014 - val_mae: 0.
2014
Epoch 1094/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1719 - mae: 0.1719 - val_loss: 0.2029 - val_mae: 0.
2029
Epoch 1095/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.3068 - val_mae: 0.
3068
Epoch 1096/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1679 - mae: 0.1679 - val_loss: 0.2840 - val_mae: 0.
2840
Epoch 1097/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2506 - val_mae: 0.
2506
Epoch 1098/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2853 - val_mae: 0.
2853
Epoch 1099/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1683 - mae: 0.1683 - val_loss: 0.2873 - val_mae: 0.
2873
Epoch 1100/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1653 - mae: 0.1653 - val_loss: 0.1933 - val_mae: 0.
1933
Epoch 1101/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.3091 - val_mae: 0.
3091
Epoch 1102/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1651 - mae: 0.1651 - val_loss: 0.2311 - val_mae: 0.
2311
Epoch 1103/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1659 - mae: 0.1659 - val_loss: 0.2221 - val_mae: 0.
2221
Epoch 1104/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.3320 - val_mae: 0.
3320
Epoch 1105/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1729 - mae: 0.1729 - val_loss: 0.2279 - val_mae: 0.
2279
Epoch 1106/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1741 - mae: 0.1741 - val_loss: 0.1792 - val_mae: 0.
1792
Epoch 1107/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1705 - mae: 0.1705 - val_loss: 0.3145 - val_mae: 0.
3145
Epoch 1108/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1682 - mae: 0.1682 - val_loss: 0.2690 - val_mae: 0.
2690
Epoch 1109/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1579 - mae: 0.1579 - val_loss: 0.2173 - val_mae: 0.
2173
Epoch 1110/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2520 - val_mae: 0.
2520
Epoch 1111/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2435 - val_mae: 0.
2435
Epoch 1112/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1665 - mae: 0.1665 - val_loss: 0.2265 - val_mae: 0.
```

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2265
Epoch 1113/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1576 - mae: 0.1576 - val_loss: 0.3060 - val_mae: 0.
3060
Epoch 1114/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.2527 - val_mae: 0.
2527
Epoch 1115/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2249 - val_mae: 0.
2249
Epoch 1116/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.2355 - val_mae: 0.
2355
Epoch 1117/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2862 - val_mae: 0.
2862
Epoch 1118/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2289 - val_mae: 0.
2289
Epoch 1119/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2540 - val_mae: 0.
2540
Epoch 1120/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.2332 - val_mae: 0.
2332
Epoch 1121/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1574 - mae: 0.1574 - val_loss: 0.2769 - val_mae: 0.
2769
Epoch 1122/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.1942 - val_mae: 0.
1942
Epoch 1123/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2707 - val_mae: 0.
2707
Epoch 1124/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2059 - val_mae: 0.
2059
Epoch 1125/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1728 - mae: 0.1728 - val_loss: 0.2133 - val_mae: 0.
2133
Epoch 1126/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.3359 - val_mae: 0.
3359
Epoch 1127/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1722 - mae: 0.1722 - val_loss: 0.2209 - val_mae: 0.
2209
Epoch 1128/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1758 - mae: 0.1758 - val_loss: 0.2027 - val_mae: 0.
2027
Epoch 1129/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.3062 - val_mae: 0.
3062
Epoch 1130/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.1794 - val_mae: 0.
1794
Epoch 1131/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1711 - mae: 0.1711 - val_loss: 0.2419 - val_mae: 0.
2419
Epoch 1132/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1721 - mae: 0.1721 - val_loss: 0.3088 - val_mae: 0.
3088
Epoch 1133/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1578 - mae: 0.1578 - val_loss: 0.1975 - val_mae: 0.
1975
Epoch 1134/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.2726 - val_mae: 0.
2726
Epoch 1135/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2591 - val_mae: 0.
2591
Epoch 1136/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.2401 - val_mae: 0.
2401
Epoch 1137/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1568 - mae: 0.1568 - val_loss: 0.3020 - val_mae: 0.
3020
Epoch 1138/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1655 - mae: 0.1655 - val_loss: 0.2504 - val_mae: 0.
2504
Epoch 1139/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2542 - val_mae: 0.
```

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2542
Epoch 1140/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2614 - val_mae: 0.
2614
Epoch 1141/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2095 - val_mae: 0.
2095
Epoch 1142/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2744 - val_mae: 0.
2744
Epoch 1143/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.2530 - val_mae: 0.
2530
Epoch 1144/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2436 - val_mae: 0.
2436
Epoch 1145/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1678 - mae: 0.1678 - val_loss: 0.2966 - val_mae: 0.
2966
Epoch 1146/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1636 - mae: 0.1636 - val_loss: 0.2474 - val_mae: 0.
2474
Epoch 1147/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1637 - mae: 0.1637 - val_loss: 0.3035 - val_mae: 0.
3035
Epoch 1148/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.2023 - val_mae: 0.
2023
Epoch 1149/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.2833 - val_mae: 0.
2833
Epoch 1150/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1637 - mae: 0.1637 - val_loss: 0.2747 - val_mae: 0.
2747
Epoch 1151/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1576 - mae: 0.1576 - val_loss: 0.1919 - val_mae: 0.
1919
Epoch 1152/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1791 - mae: 0.1791 - val_loss: 0.1974 - val_mae: 0.
1974
Epoch 1153/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.3469 - val_mae: 0.
3469
Epoch 1154/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1865 - mae: 0.1865 - val_loss: 0.2666 - val_mae: 0.
2666
Epoch 1155/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.1714 - val_mae: 0.
1714
Epoch 1156/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1702 - mae: 0.1702 - val_loss: 0.2758 - val_mae: 0.
2758
Epoch 1157/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1868 - mae: 0.1868 - val_loss: 0.3521 - val_mae: 0.
3521
Epoch 1158/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1657 - mae: 0.1657 - val_loss: 0.1779 - val_mae: 0.
1779
Epoch 1159/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1754 - mae: 0.1754 - val_loss: 0.2126 - val_mae: 0.
2126
Epoch 1160/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1630 - mae: 0.1630 - val_loss: 0.2725 - val_mae: 0.
2725
Epoch 1161/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1751 - mae: 0.1751 - val_loss: 0.3321 - val_mae: 0.
3321
Epoch 1162/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1672 - mae: 0.1672 - val_loss: 0.1964 - val_mae: 0.
1964
Epoch 1163/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1641 - mae: 0.1641 - val_loss: 0.2767 - val_mae: 0.
2767
Epoch 1164/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.2686 - val_mae: 0.
2686
Epoch 1165/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2640 - val_mae: 0.
2640
Epoch 1166/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2508 - val_mae: 0.
```

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2508
Epoch 1167/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1609 - mae: 0.1609 - val_loss: 0.2163 - val_mae: 0.
2163
Epoch 1168/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2842 - val_mae: 0.
2842
Epoch 1169/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.1942 - val_mae: 0.
1942
Epoch 1170/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.2665 - val_mae: 0.
2665
Epoch 1171/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2832 - val_mae: 0.
2832
Epoch 1172/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.2368 - val_mae: 0.
2368
Epoch 1173/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2635 - val_mae: 0.
2635
Epoch 1174/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2394 - val_mae: 0.
2394
Epoch 1175/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2632 - val_mae: 0.
2632
Epoch 1176/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2374 - val_mae: 0.
2374
Epoch 1177/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.3285 - val_mae: 0.
3285
Epoch 1178/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1748 - mae: 0.1748 - val_loss: 0.2504 - val_mae: 0.
2504
Epoch 1179/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1578 - mae: 0.1578 - val_loss: 0.2250 - val_mae: 0.
2250
Epoch 1180/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1647 - mae: 0.1647 - val_loss: 0.3119 - val_mae: 0.
3119
Epoch 1181/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1657 - mae: 0.1657 - val_loss: 0.2627 - val_mae: 0.
2627
Epoch 1182/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2629 - val_mae: 0.
2629
Epoch 1183/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1614 - mae: 0.1614 - val_loss: 0.2395 - val_mae: 0.
2395
Epoch 1184/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1575 - mae: 0.1575 - val_loss: 0.2096 - val_mae: 0.
2096
Epoch 1185/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2556 - val_mae: 0.
2556
Epoch 1186/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2775 - val_mae: 0.
2775
Epoch 1187/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2532 - val_mae: 0.
2532
Epoch 1188/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1609 - mae: 0.1609 - val_loss: 0.2148 - val_mae: 0.
2148
Epoch 1189/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2638 - val_mae: 0.
2638
Epoch 1190/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2637 - val_mae: 0.
2637
Epoch 1191/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2235 - val_mae: 0.
2235
Epoch 1192/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1664 - mae: 0.1664 - val_loss: 0.2404 - val_mae: 0.
2404
Epoch 1193/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1705 - mae: 0.1705 - val_loss: 0.3273 - val_mae: 0.
```

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3273
Epoch 1194/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1674 - mae: 0.1674 - val_loss: 0.2502 - val_mae: 0.
2502
Epoch 1195/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2857 - val_mae: 0.
2857
Epoch 1196/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1653 - mae: 0.1653 - val_loss: 0.2315 - val_mae: 0.
2315
Epoch 1197/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1802 - mae: 0.1802 - val_loss: 0.1727 - val_mae: 0.
1727
Epoch 1198/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.3389 - val_mae: 0.
3389
Epoch 1199/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1792 - mae: 0.1792 - val_loss: 0.2402 - val_mae: 0.
2402
Epoch 1200/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1807 - mae: 0.1807 - val_loss: 0.1882 - val_mae: 0.
1882
Epoch 1201/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1646 - mae: 0.1646 - val_loss: 0.3584 - val_mae: 0.
3584
Epoch 1202/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1770 - mae: 0.1770 - val_loss: 0.2149 - val_mae: 0.
2149
Epoch 1203/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1720 - mae: 0.1720 - val_loss: 0.1951 - val_mae: 0.
1951
Epoch 1204/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1545 - mae: 0.1545 - val_loss: 0.3386 - val_mae: 0.
3386
Epoch 1205/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1801 - mae: 0.1801 - val_loss: 0.2814 - val_mae: 0.
2814
Epoch 1206/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2026 - val_mae: 0.
2026
Epoch 1207/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.3092 - val_mae: 0.
3092
Epoch 1208/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.2446 - val_mae: 0.
2446
Epoch 1209/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2782 - val_mae: 0.
2782
Epoch 1210/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2275 - val_mae: 0.
2275
Epoch 1211/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1628 - mae: 0.1628 - val_loss: 0.2053 - val_mae: 0.
2053
Epoch 1212/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.2450 - val_mae: 0.
2450
Epoch 1213/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.2333 - val_mae: 0.
2333
Epoch 1214/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1689 - mae: 0.1689 - val_loss: 0.1875 - val_mae: 0.
1875
Epoch 1215/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.3191 - val_mae: 0.
3191
Epoch 1216/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1781 - mae: 0.1781 - val_loss: 0.3108 - val_mae: 0.
3108
Epoch 1217/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.1980 - val_mae: 0.
1980
Epoch 1218/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1716 - mae: 0.1716 - val_loss: 0.2216 - val_mae: 0.
2216
Epoch 1219/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.3185 - val_mae: 0.
3185
Epoch 1220/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1742 - mae: 0.1742 - val_loss: 0.2413 - val_mae: 0.
```

2413
Epoch 1221/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1783 - mae: 0.1783 - val_loss: 0.1842 - val_mae: 0.
1842
Epoch 1222/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1743 - mae: 0.1743 - val_loss: 0.3852 - val_mae: 0.
3852
Epoch 1223/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1804 - mae: 0.1804 - val_loss: 0.1954 - val_mae: 0.
1954
Epoch 1224/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1956 - mae: 0.1956 - val_loss: 0.2051 - val_mae: 0.
2051
Epoch 1225/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1810 - mae: 0.1810 - val_loss: 0.4148 - val_mae: 0.
4148
Epoch 1226/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1983 - mae: 0.1983 - val_loss: 0.2671 - val_mae: 0.
2671
Epoch 1227/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1684 - mae: 0.1684 - val_loss: 0.1956 - val_mae: 0.
1956
Epoch 1228/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1673 - mae: 0.1673 - val_loss: 0.2569 - val_mae: 0.
2569
Epoch 1229/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1649 - mae: 0.1649 - val_loss: 0.2258 - val_mae: 0.
2258
Epoch 1230/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1559 - mae: 0.1559 - val_loss: 0.3362 - val_mae: 0.
3362
Epoch 1231/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1769 - mae: 0.1769 - val_loss: 0.3024 - val_mae: 0.
3024
Epoch 1232/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1614 - mae: 0.1614 - val_loss: 0.2498 - val_mae: 0.
2498
Epoch 1233/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.2465 - val_mae: 0.
2465
Epoch 1234/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.2937 - val_mae: 0.
2937
Epoch 1235/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.2251 - val_mae: 0.
2251
Epoch 1236/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.2421 - val_mae: 0.
2421
Epoch 1237/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2899 - val_mae: 0.
2899
Epoch 1238/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2361 - val_mae: 0.
2361
Epoch 1239/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1668 - mae: 0.1668 - val_loss: 0.2440 - val_mae: 0.
2440
Epoch 1240/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2970 - val_mae: 0.
2970
Epoch 1241/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2233 - val_mae: 0.
2233
Epoch 1242/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2597 - val_mae: 0.
2597
Epoch 1243/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.2632 - val_mae: 0.
2632
Epoch 1244/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2597 - val_mae: 0.
2597
Epoch 1245/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1614 - mae: 0.1614 - val_loss: 0.2501 - val_mae: 0.
2501
Epoch 1246/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2867 - val_mae: 0.
2867
Epoch 1247/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1578 - mae: 0.1578 - val_loss: 0.2377 - val_mae: 0.

```
2377
Epoch 1248/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.2540 - val_mae: 0.
2540
Epoch 1249/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2725 - val_mae: 0.
2725
Epoch 1250/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2484 - val_mae: 0.
2484
Epoch 1251/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1651 - mae: 0.1651 - val_loss: 0.2490 - val_mae: 0.
2490
Epoch 1252/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.3069 - val_mae: 0.
3069
Epoch 1253/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.1917 - val_mae: 0.
1917
Epoch 1254/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1680 - mae: 0.1680 - val_loss: 0.2581 - val_mae: 0.
2581
Epoch 1255/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1573 - mae: 0.1573 - val_loss: 0.2928 - val_mae: 0.
2928
Epoch 1256/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2617 - val_mae: 0.
2617
Epoch 1257/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2600 - val_mae: 0.
2600
Epoch 1258/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2531 - val_mae: 0.
2531
Epoch 1259/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2245 - val_mae: 0.
2245
Epoch 1260/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.2424 - val_mae: 0.
2424
Epoch 1261/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2657 - val_mae: 0.
2657
Epoch 1262/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2407 - val_mae: 0.
2407
Epoch 1263/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2564 - val_mae: 0.
2564
Epoch 1264/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.2380 - val_mae: 0.
2380
Epoch 1265/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2717 - val_mae: 0.
2717
Epoch 1266/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1651 - mae: 0.1651 - val_loss: 0.2919 - val_mae: 0.
2919
Epoch 1267/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2173 - val_mae: 0.
2173
Epoch 1268/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2908 - val_mae: 0.
2908
Epoch 1269/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.2829 - val_mae: 0.
2829
Epoch 1270/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.2410 - val_mae: 0.
2410
Epoch 1271/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.3036 - val_mae: 0.
3036
Epoch 1272/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2259 - val_mae: 0.
2259
Epoch 1273/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1718 - mae: 0.1718 - val_loss: 0.2252 - val_mae: 0.
2252
Epoch 1274/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1609 - mae: 0.1609 - val_loss: 0.2743 - val_mae: 0.
```

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2743
Epoch 1275/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1546 - mae: 0.1546 - val_loss: 0.1947 - val_mae: 0.
1947
Epoch 1276/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.2934 - val_mae: 0.
2934
Epoch 1277/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1658 - mae: 0.1658 - val_loss: 0.3268 - val_mae: 0.
3268
Epoch 1278/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1664 - mae: 0.1664 - val_loss: 0.2226 - val_mae: 0.
2226
Epoch 1279/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1840 - mae: 0.1840 - val_loss: 0.1662 - val_mae: 0.
1662
Epoch 1280/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1701 - mae: 0.1701 - val_loss: 0.3166 - val_mae: 0.
3166
Epoch 1281/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1677 - mae: 0.1677 - val_loss: 0.2515 - val_mae: 0.
2515
Epoch 1282/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1643 - mae: 0.1643 - val_loss: 0.1892 - val_mae: 0.
1892
Epoch 1283/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.2936 - val_mae: 0.
2936
Epoch 1284/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1578 - mae: 0.1578 - val_loss: 0.2049 - val_mae: 0.
2049
Epoch 1285/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1802 - mae: 0.1802 - val_loss: 0.2070 - val_mae: 0.
2070
Epoch 1286/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2832 - val_mae: 0.
2832
Epoch 1287/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.2083 - val_mae: 0.
2083
Epoch 1288/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1641 - mae: 0.1641 - val_loss: 0.2930 - val_mae: 0.
2930
Epoch 1289/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2226 - val_mae: 0.
2226
Epoch 1290/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.2624 - val_mae: 0.
2624
Epoch 1291/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1696 - mae: 0.1696 - val_loss: 0.3058 - val_mae: 0.
3058
Epoch 1292/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.2010 - val_mae: 0.
2010
Epoch 1293/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1661 - mae: 0.1661 - val_loss: 0.2849 - val_mae: 0.
2849
Epoch 1294/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1634 - mae: 0.1634 - val_loss: 0.2620 - val_mae: 0.
2620
Epoch 1295/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2228 - val_mae: 0.
2228
Epoch 1296/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1602 - mae: 0.1602 - val_loss: 0.3017 - val_mae: 0.
3017
Epoch 1297/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2673 - val_mae: 0.
2673
Epoch 1298/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2475 - val_mae: 0.
2475
Epoch 1299/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.2306 - val_mae: 0.
2306
Epoch 1300/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2730 - val_mae: 0.
2730
Epoch 1301/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1647 - mae: 0.1647 - val_loss: 0.3321 - val_mae: 0.
```

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3321
Epoch 1302/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1690 - mae: 0.1690 - val_loss: 0.2667 - val_mae: 0.
2667
Epoch 1303/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2152 - val_mae: 0.
2152
Epoch 1304/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1725 - mae: 0.1725 - val_loss: 0.2182 - val_mae: 0.
2182
Epoch 1305/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1637 - mae: 0.1637 - val_loss: 0.2970 - val_mae: 0.
2970
Epoch 1306/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1647 - mae: 0.1647 - val_loss: 0.2560 - val_mae: 0.
2560
Epoch 1307/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.3122 - val_mae: 0.
3122
Epoch 1308/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1632 - mae: 0.1632 - val_loss: 0.2615 - val_mae: 0.
2615
Epoch 1309/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2652 - val_mae: 0.
2652
Epoch 1310/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2294 - val_mae: 0.
2294
Epoch 1311/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.2920 - val_mae: 0.
2920
Epoch 1312/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1618 - mae: 0.1618 - val_loss: 0.2378 - val_mae: 0.
2378
Epoch 1313/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1625 - mae: 0.1625 - val_loss: 0.2843 - val_mae: 0.
2843
Epoch 1314/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2185 - val_mae: 0.
2185
Epoch 1315/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1579 - mae: 0.1579 - val_loss: 0.3084 - val_mae: 0.
3084
Epoch 1316/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1643 - mae: 0.1643 - val_loss: 0.2821 - val_mae: 0.
2821
Epoch 1317/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1628 - mae: 0.1628 - val_loss: 0.2893 - val_mae: 0.
2893
Epoch 1318/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1635 - mae: 0.1635 - val_loss: 0.2649 - val_mae: 0.
2649
Epoch 1319/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1704 - mae: 0.1704 - val_loss: 0.2848 - val_mae: 0.
2848
Epoch 1320/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1863 - mae: 0.1863 - val_loss: 0.1654 - val_mae: 0.
1654
Epoch 1321/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.3571 - val_mae: 0.
3571
Epoch 1322/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1787 - mae: 0.1787 - val_loss: 0.2608 - val_mae: 0.
2608
Epoch 1323/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2570 - val_mae: 0.
2570
Epoch 1324/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1647 - mae: 0.1647 - val_loss: 0.3238 - val_mae: 0.
3238
Epoch 1325/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.2332 - val_mae: 0.
2332
Epoch 1326/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2263 - val_mae: 0.
2263
Epoch 1327/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2859 - val_mae: 0.
2859
Epoch 1328/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1636 - mae: 0.1636 - val_loss: 0.2931 - val_mae: 0.
```

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2931
Epoch 1329/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1655 - mae: 0.1655 - val_loss: 0.2324 - val_mae: 0.
2324
Epoch 1330/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2824 - val_mae: 0.
2824
Epoch 1331/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2213 - val_mae: 0.
2213
Epoch 1332/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1645 - mae: 0.1645 - val_loss: 0.2281 - val_mae: 0.
2281
Epoch 1333/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2670 - val_mae: 0.
2670
Epoch 1334/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.2439 - val_mae: 0.
2439
Epoch 1335/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2783 - val_mae: 0.
2783
Epoch 1336/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2237 - val_mae: 0.
2237
Epoch 1337/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2505 - val_mae: 0.
2505
Epoch 1338/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1578 - mae: 0.1578 - val_loss: 0.2650 - val_mae: 0.
2650
Epoch 1339/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1573 - mae: 0.1573 - val_loss: 0.1992 - val_mae: 0.
1992
Epoch 1340/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1725 - mae: 0.1725 - val_loss: 0.2275 - val_mae: 0.
2275
Epoch 1341/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.3236 - val_mae: 0.
3236
Epoch 1342/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1675 - mae: 0.1675 - val_loss: 0.2479 - val_mae: 0.
2479
Epoch 1343/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.1923 - val_mae: 0.
1923
Epoch 1344/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1663 - mae: 0.1663 - val_loss: 0.2526 - val_mae: 0.
2526
Epoch 1345/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2818 - val_mae: 0.
2818
Epoch 1346/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2794 - val_mae: 0.
2794
Epoch 1347/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2707 - val_mae: 0.
2707
Epoch 1348/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2676 - val_mae: 0.
2676
Epoch 1349/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2671 - val_mae: 0.
2671
Epoch 1350/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2514 - val_mae: 0.
2514
Epoch 1351/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1665 - mae: 0.1665 - val_loss: 0.2156 - val_mae: 0.
2156
Epoch 1352/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1609 - mae: 0.1609 - val_loss: 0.3229 - val_mae: 0.
3229
Epoch 1353/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1636 - mae: 0.1636 - val_loss: 0.2476 - val_mae: 0.
2476
Epoch 1354/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2565 - val_mae: 0.
2565
Epoch 1355/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.2745 - val_mae: 0.
```

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2745
Epoch 1356/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2621 - val_mae: 0.
2621
Epoch 1357/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2230 - val_mae: 0.
2230
Epoch 1358/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1672 - mae: 0.1672 - val_loss: 0.2411 - val_mae: 0.
2411
Epoch 1359/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1719 - mae: 0.1719 - val_loss: 0.3528 - val_mae: 0.
3528
Epoch 1360/2000
5/5 [==============================] - 0s 20ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.1844 - val_mae: 0.
1844
Epoch 1361/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1896 - mae: 0.1896 - val_loss: 0.2645 - val_mae: 0.
2645
Epoch 1362/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1762 - mae: 0.1762 - val_loss: 0.4174 - val_mae: 0.
4174
Epoch 1363/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1935 - mae: 0.1935 - val_loss: 0.2277 - val_mae: 0.
2277
Epoch 1364/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1710 - mae: 0.1710 - val_loss: 0.2229 - val_mae: 0.
2229
Epoch 1365/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1675 - mae: 0.1675 - val_loss: 0.3435 - val_mae: 0.
3435
Epoch 1366/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1655 - mae: 0.1655 - val_loss: 0.2266 - val_mae: 0.
2266
Epoch 1367/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1642 - mae: 0.1642 - val_loss: 0.2629 - val_mae: 0.
2629
Epoch 1368/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1642 - mae: 0.1642 - val_loss: 0.2961 - val_mae: 0.
2961
Epoch 1369/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2176 - val_mae: 0.
2176
Epoch 1370/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1707 - mae: 0.1707 - val_loss: 0.2259 - val_mae: 0.
2259
Epoch 1371/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2750 - val_mae: 0.
2750
Epoch 1372/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2659 - val_mae: 0.
2659
Epoch 1373/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2780 - val_mae: 0.
2780
Epoch 1374/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2315 - val_mae: 0.
2315
Epoch 1375/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1676 - mae: 0.1676 - val_loss: 0.2489 - val_mae: 0.
2489
Epoch 1376/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.3488 - val_mae: 0.
3488
Epoch 1377/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1738 - mae: 0.1738 - val_loss: 0.2672 - val_mae: 0.
2672
Epoch 1378/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2483 - val_mae: 0.
2483
Epoch 1379/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.3098 - val_mae: 0.
3098
Epoch 1380/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1657 - mae: 0.1657 - val_loss: 0.2638 - val_mae: 0.
2638
Epoch 1381/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1619 - mae: 0.1619 - val_loss: 0.1959 - val_mae: 0.
1959
Epoch 1382/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1651 - mae: 0.1651 - val_loss: 0.3062 - val_mae: 0.
```

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3062
Epoch 1383/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1712 - mae: 0.1712 - val_loss: 0.3051 - val_mae: 0.
3051
Epoch 1384/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1575 - mae: 0.1575 - val_loss: 0.2080 - val_mae: 0.
2080
Epoch 1385/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1796 - mae: 0.1796 - val_loss: 0.2340 - val_mae: 0.
2340
Epoch 1386/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.3269 - val_mae: 0.
3269
Epoch 1387/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1618 - mae: 0.1618 - val_loss: 0.2076 - val_mae: 0.
2076
Epoch 1388/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2696 - val_mae: 0.
2696
Epoch 1389/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2794 - val_mae: 0.
2794
Epoch 1390/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.1949 - val_mae: 0.
1949
Epoch 1391/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1700 - mae: 0.1700 - val_loss: 0.2614 - val_mae: 0.
2614
Epoch 1392/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1646 - mae: 0.1646 - val_loss: 0.3344 - val_mae: 0.
3344
Epoch 1393/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1701 - mae: 0.1701 - val_loss: 0.2531 - val_mae: 0.
2531
Epoch 1394/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1680 - mae: 0.1680 - val_loss: 0.2185 - val_mae: 0.
2185
Epoch 1395/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1625 - mae: 0.1625 - val_loss: 0.2838 - val_mae: 0.
2838
Epoch 1396/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1563 - mae: 0.1563 - val_loss: 0.2002 - val_mae: 0.
2002
Epoch 1397/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1665 - mae: 0.1665 - val_loss: 0.2648 - val_mae: 0.
2648
Epoch 1398/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1655 - mae: 0.1655 - val_loss: 0.3088 - val_mae: 0.
3088
Epoch 1399/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.2272 - val_mae: 0.
2272
Epoch 1400/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2908 - val_mae: 0.
2908
Epoch 1401/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1643 - mae: 0.1643 - val_loss: 0.2727 - val_mae: 0.
2727
Epoch 1402/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1575 - mae: 0.1575 - val_loss: 0.2236 - val_mae: 0.
2236
Epoch 1403/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.2378 - val_mae: 0.
2378
Epoch 1404/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.2560 - val_mae: 0.
2560
Epoch 1405/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.3029 - val_mae: 0.
3029
Epoch 1406/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1627 - mae: 0.1627 - val_loss: 0.2361 - val_mae: 0.
2361
Epoch 1407/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2695 - val_mae: 0.
2695
Epoch 1408/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2910 - val_mae: 0.
2910
Epoch 1409/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2657 - val_mae: 0.
```

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2657
Epoch 1410/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.2445 - val_mae: 0.
2445
Epoch 1411/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2837 - val_mae: 0.
2837
Epoch 1412/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2388 - val_mae: 0.
2388
Epoch 1413/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2382 - val_mae: 0.
2382
Epoch 1414/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.2157 - val_mae: 0.
2157
Epoch 1415/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2753 - val_mae: 0.
2753
Epoch 1416/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2709 - val_mae: 0.
2709
Epoch 1417/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2400 - val_mae: 0.
2400
Epoch 1418/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1641 - mae: 0.1641 - val_loss: 0.2479 - val_mae: 0.
2479
Epoch 1419/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1567 - mae: 0.1567 - val_loss: 0.3587 - val_mae: 0.
3587
Epoch 1420/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1799 - mae: 0.1799 - val_loss: 0.2519 - val_mae: 0.
2519
Epoch 1421/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1689 - mae: 0.1689 - val_loss: 0.1849 - val_mae: 0.
1849
Epoch 1422/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1656 - mae: 0.1656 - val_loss: 0.3073 - val_mae: 0.
3073
Epoch 1423/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1677 - mae: 0.1677 - val_loss: 0.2554 - val_mae: 0.
2554
Epoch 1424/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1742 - mae: 0.1742 - val_loss: 0.2035 - val_mae: 0.
2035
Epoch 1425/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.3835 - val_mae: 0.
3835
Epoch 1426/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1894 - mae: 0.1894 - val_loss: 0.2310 - val_mae: 0.
2310
Epoch 1427/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1979 - mae: 0.1979 - val_loss: 0.1499 - val_mae: 0.
1499
Epoch 1428/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1735 - mae: 0.1735 - val_loss: 0.3556 - val_mae: 0.
3556
Epoch 1429/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1857 - mae: 0.1857 - val_loss: 0.3204 - val_mae: 0.
3204
Epoch 1430/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2085 - val_mae: 0.
2085
Epoch 1431/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1663 - mae: 0.1663 - val_loss: 0.2249 - val_mae: 0.
2249
Epoch 1432/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.2426 - val_mae: 0.
2426
Epoch 1433/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2589 - val_mae: 0.
2589
Epoch 1434/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.2975 - val_mae: 0.
2975
Epoch 1435/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2178 - val_mae: 0.
2178
Epoch 1436/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.2592 - val_mae: 0.
```

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2592
Epoch 1437/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1609 - mae: 0.1609 - val_loss: 0.2849 - val_mae: 0.
2849
Epoch 1438/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2416 - val_mae: 0.
2416
Epoch 1439/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.2424 - val_mae: 0.
2424
Epoch 1440/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1602 - mae: 0.1602 - val_loss: 0.2825 - val_mae: 0.
2825
Epoch 1441/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2580 - val_mae: 0.
2580
Epoch 1442/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2491 - val_mae: 0.
2491
Epoch 1443/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2112 - val_mae: 0.
2112
Epoch 1444/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1671 - mae: 0.1671 - val_loss: 0.2531 - val_mae: 0.
2531
Epoch 1445/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2838 - val_mae: 0.
2838
Epoch 1446/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1618 - mae: 0.1618 - val_loss: 0.2385 - val_mae: 0.
2385
Epoch 1447/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1576 - mae: 0.1576 - val_loss: 0.2942 - val_mae: 0.
2942
Epoch 1448/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1602 - mae: 0.1602 - val_loss: 0.2470 - val_mae: 0.
2470
Epoch 1449/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1632 - mae: 0.1632 - val_loss: 0.2267 - val_mae: 0.
2267
Epoch 1450/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.3148 - val_mae: 0.
3148
Epoch 1451/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.2828 - val_mae: 0.
2828
Epoch 1452/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1627 - mae: 0.1627 - val_loss: 0.2652 - val_mae: 0.
2652
Epoch 1453/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1577 - mae: 0.1577 - val_loss: 0.2531 - val_mae: 0.
2531
Epoch 1454/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1579 - mae: 0.1579 - val_loss: 0.2833 - val_mae: 0.
2833
Epoch 1455/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2598 - val_mae: 0.
2598
Epoch 1456/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.2528 - val_mae: 0.
2528
Epoch 1457/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2958 - val_mae: 0.
2958
Epoch 1458/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1729 - mae: 0.1729 - val_loss: 0.2997 - val_mae: 0.
2997
Epoch 1459/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.1808 - val_mae: 0.
1808
Epoch 1460/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1658 - mae: 0.1658 - val_loss: 0.3074 - val_mae: 0.
3074
Epoch 1461/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1651 - mae: 0.1651 - val_loss: 0.2783 - val_mae: 0.
2783
Epoch 1462/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1575 - mae: 0.1575 - val_loss: 0.2162 - val_mae: 0.
2162
Epoch 1463/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1640 - mae: 0.1640 - val_loss: 0.2350 - val_mae: 0.
```

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2350
Epoch 1464/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2860 - val_mae: 0.
2860
Epoch 1465/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.2287 - val_mae: 0.
2287
Epoch 1466/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1647 - mae: 0.1647 - val_loss: 0.2013 - val_mae: 0.
2013
Epoch 1467/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.3319 - val_mae: 0.
3319
Epoch 1468/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1759 - mae: 0.1759 - val_loss: 0.2996 - val_mae: 0.
2996
Epoch 1469/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.2163 - val_mae: 0.
2163
Epoch 1470/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1609 - mae: 0.1609 - val_loss: 0.2441 - val_mae: 0.
2441
Epoch 1471/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2440 - val_mae: 0.
2440
Epoch 1472/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1577 - mae: 0.1577 - val_loss: 0.2701 - val_mae: 0.
2701
Epoch 1473/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1640 - mae: 0.1640 - val_loss: 0.2435 - val_mae: 0.
2435
Epoch 1474/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.2509 - val_mae: 0.
2509
Epoch 1475/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1632 - mae: 0.1632 - val_loss: 0.2963 - val_mae: 0.
2963
Epoch 1476/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1637 - mae: 0.1637 - val_loss: 0.2290 - val_mae: 0.
2290
Epoch 1477/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.3108 - val_mae: 0.
3108
Epoch 1478/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.2175 - val_mae: 0.
2175
Epoch 1479/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1647 - mae: 0.1647 - val_loss: 0.1879 - val_mae: 0.
1879
Epoch 1480/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1661 - mae: 0.1661 - val_loss: 0.2782 - val_mae: 0.
2782
Epoch 1481/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1657 - mae: 0.1657 - val_loss: 0.2925 - val_mae: 0.
2925
Epoch 1482/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1573 - mae: 0.1573 - val_loss: 0.1899 - val_mae: 0.
1899
Epoch 1483/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1810 - mae: 0.1810 - val_loss: 0.2095 - val_mae: 0.
2095
Epoch 1484/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.3446 - val_mae: 0.
3446
Epoch 1485/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1722 - mae: 0.1722 - val_loss: 0.2174 - val_mae: 0.
2174
Epoch 1486/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1857 - mae: 0.1857 - val_loss: 0.2155 - val_mae: 0.
2155
Epoch 1487/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1674 - mae: 0.1674 - val_loss: 0.4029 - val_mae: 0.
4029
Epoch 1488/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1913 - mae: 0.1913 - val_loss: 0.2283 - val_mae: 0.
2283
Epoch 1489/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1815 - mae: 0.1815 - val_loss: 0.2041 - val_mae: 0.
2041
Epoch 1490/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.3368 - val_mae: 0.
```

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3368
Epoch 1491/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1648 - mae: 0.1648 - val_loss: 0.2120 - val_mae: 0.
2120
Epoch 1492/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1644 - mae: 0.1644 - val_loss: 0.2488 - val_mae: 0.
2488
Epoch 1493/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1646 - mae: 0.1646 - val_loss: 0.2974 - val_mae: 0.
2974
Epoch 1494/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1656 - mae: 0.1656 - val_loss: 0.2196 - val_mae: 0.
2196
Epoch 1495/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2778 - val_mae: 0.
2778
Epoch 1496/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.2391 - val_mae: 0.
2391
Epoch 1497/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1570 - mae: 0.1570 - val_loss: 0.2869 - val_mae: 0.
2869
Epoch 1498/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2260 - val_mae: 0.
2260
Epoch 1499/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2155 - val_mae: 0.
2155
Epoch 1500/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.2584 - val_mae: 0.
2584
Epoch 1501/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.2829 - val_mae: 0.
2829
Epoch 1502/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.2570 - val_mae: 0.
2570
Epoch 1503/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1635 - mae: 0.1635 - val_loss: 0.2122 - val_mae: 0.
2122
Epoch 1504/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1569 - mae: 0.1569 - val_loss: 0.3142 - val_mae: 0.
3142
Epoch 1505/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1814 - mae: 0.1814 - val_loss: 0.3221 - val_mae: 0.
3221
Epoch 1506/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1640 - mae: 0.1640 - val_loss: 0.2102 - val_mae: 0.
2102
Epoch 1507/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2756 - val_mae: 0.
2756
Epoch 1508/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2852 - val_mae: 0.
2852
Epoch 1509/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2532 - val_mae: 0.
2532
Epoch 1510/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1628 - mae: 0.1628 - val_loss: 0.2586 - val_mae: 0.
2586
Epoch 1511/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.3124 - val_mae: 0.
3124
Epoch 1512/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1664 - mae: 0.1664 - val_loss: 0.2802 - val_mae: 0.
2802
Epoch 1513/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2745 - val_mae: 0.
2745
Epoch 1514/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.2527 - val_mae: 0.
2527
Epoch 1515/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.3018 - val_mae: 0.
3018
Epoch 1516/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1647 - mae: 0.1647 - val_loss: 0.2607 - val_mae: 0.
2607
Epoch 1517/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1575 - mae: 0.1575 - val_loss: 0.2166 - val_mae: 0.
```

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2166
Epoch 1518/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.3052 - val_mae: 0.
3052
Epoch 1519/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1673 - mae: 0.1673 - val_loss: 0.2864 - val_mae: 0.
2864
Epoch 1520/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.1961 - val_mae: 0.
1961
Epoch 1521/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1712 - mae: 0.1712 - val_loss: 0.2512 - val_mae: 0.
2512
Epoch 1522/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1686 - mae: 0.1686 - val_loss: 0.3131 - val_mae: 0.
3131
Epoch 1523/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1727 - mae: 0.1727 - val_loss: 0.1752 - val_mae: 0.
1752
Epoch 1524/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1672 - mae: 0.1672 - val_loss: 0.2788 - val_mae: 0.
2788
Epoch 1525/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2560 - val_mae: 0.
2560
Epoch 1526/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1576 - mae: 0.1576 - val_loss: 0.2034 - val_mae: 0.
2034
Epoch 1527/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1718 - mae: 0.1718 - val_loss: 0.2489 - val_mae: 0.
2489
Epoch 1528/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.3339 - val_mae: 0.
3339
Epoch 1529/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1687 - mae: 0.1687 - val_loss: 0.2033 - val_mae: 0.
2033
Epoch 1530/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1831 - mae: 0.1831 - val_loss: 0.2042 - val_mae: 0.
2042
Epoch 1531/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1630 - mae: 0.1630 - val_loss: 0.3296 - val_mae: 0.
3296
Epoch 1532/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1650 - mae: 0.1650 - val_loss: 0.2040 - val_mae: 0.
2040
Epoch 1533/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1648 - mae: 0.1648 - val_loss: 0.2347 - val_mae: 0.
2347
Epoch 1534/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1575 - mae: 0.1575 - val_loss: 0.2818 - val_mae: 0.
2818
Epoch 1535/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.2574 - val_mae: 0.
2574
Epoch 1536/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2607 - val_mae: 0.
2607
Epoch 1537/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1769 - mae: 0.1769 - val_loss: 0.3228 - val_mae: 0.
3228
Epoch 1538/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1649 - mae: 0.1649 - val_loss: 0.1602 - val_mae: 0.
1602
Epoch 1539/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1857 - mae: 0.1857 - val_loss: 0.2593 - val_mae: 0.
2593
Epoch 1540/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2940 - val_mae: 0.
2940
Epoch 1541/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2120 - val_mae: 0.
2120
Epoch 1542/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1633 - mae: 0.1633 - val_loss: 0.2512 - val_mae: 0.
2512
Epoch 1543/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2630 - val_mae: 0.
2630
Epoch 1544/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.3173 - val_mae: 0.
```

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3173
Epoch 1545/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1745 - mae: 0.1745 - val_loss: 0.2845 - val_mae: 0.
2845
Epoch 1546/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.1931 - val_mae: 0.
1931
Epoch 1547/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1650 - mae: 0.1650 - val_loss: 0.2688 - val_mae: 0.
2688
Epoch 1548/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.2620 - val_mae: 0.
2620
Epoch 1549/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.2363 - val_mae: 0.
2363
Epoch 1550/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1579 - mae: 0.1579 - val_loss: 0.2940 - val_mae: 0.
2940
Epoch 1551/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2483 - val_mae: 0.
2483
Epoch 1552/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2958 - val_mae: 0.
2958
Epoch 1553/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1628 - mae: 0.1628 - val_loss: 0.2494 - val_mae: 0.
2494
Epoch 1554/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1673 - mae: 0.1673 - val_loss: 0.1843 - val_mae: 0.
1843
Epoch 1555/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1678 - mae: 0.1678 - val_loss: 0.2849 - val_mae: 0.
2849
Epoch 1556/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2849 - val_mae: 0.
2849
Epoch 1557/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2801 - val_mae: 0.
2801
Epoch 1558/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2673 - val_mae: 0.
2673
Epoch 1559/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1675 - mae: 0.1675 - val_loss: 0.3229 - val_mae: 0.
3229
Epoch 1560/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1647 - mae: 0.1647 - val_loss: 0.2116 - val_mae: 0.
2116
Epoch 1561/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1660 - mae: 0.1660 - val_loss: 0.2248 - val_mae: 0.
2248
Epoch 1562/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2566 - val_mae: 0.
2566
Epoch 1563/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1576 - mae: 0.1576 - val_loss: 0.2679 - val_mae: 0.
2679
Epoch 1564/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2406 - val_mae: 0.
2406
Epoch 1565/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2450 - val_mae: 0.
2450
Epoch 1566/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2251 - val_mae: 0.
2251
Epoch 1567/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1705 - mae: 0.1705 - val_loss: 0.2399 - val_mae: 0.
2399
Epoch 1568/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1661 - mae: 0.1661 - val_loss: 0.3231 - val_mae: 0.
3231
Epoch 1569/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1614 - mae: 0.1614 - val_loss: 0.2138 - val_mae: 0.
2138
Epoch 1570/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1666 - mae: 0.1666 - val_loss: 0.2522 - val_mae: 0.
2522
Epoch 1571/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.3518 - val_mae: 0.
```

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3518
Epoch 1572/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1728 - mae: 0.1728 - val_loss: 0.2231 - val_mae: 0.
2231
Epoch 1573/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1808 - mae: 0.1808 - val_loss: 0.1915 - val_mae: 0.
1915
Epoch 1574/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1641 - mae: 0.1641 - val_loss: 0.3167 - val_mae: 0.
3167
Epoch 1575/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1630 - mae: 0.1630 - val_loss: 0.2061 - val_mae: 0.
2061
Epoch 1576/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1748 - mae: 0.1748 - val_loss: 0.2290 - val_mae: 0.
2290
Epoch 1577/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.3468 - val_mae: 0.
3468
Epoch 1578/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1780 - mae: 0.1780 - val_loss: 0.2940 - val_mae: 0.
2940
Epoch 1579/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2351 - val_mae: 0.
2351
Epoch 1580/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2423 - val_mae: 0.
2423
Epoch 1581/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.2366 - val_mae: 0.
2366
Epoch 1582/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2687 - val_mae: 0.
2687
Epoch 1583/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.2134 - val_mae: 0.
2134
Epoch 1584/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.3036 - val_mae: 0.
3036
Epoch 1585/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1630 - mae: 0.1630 - val_loss: 0.2626 - val_mae: 0.
2626
Epoch 1586/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2485 - val_mae: 0.
2485
Epoch 1587/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2409 - val_mae: 0.
2409
Epoch 1588/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2773 - val_mae: 0.
2773
Epoch 1589/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2671 - val_mae: 0.
2671
Epoch 1590/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2297 - val_mae: 0.
2297
Epoch 1591/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2420 - val_mae: 0.
2420
Epoch 1592/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2345 - val_mae: 0.
2345
Epoch 1593/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2368 - val_mae: 0.
2368
Epoch 1594/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2386 - val_mae: 0.
2386
Epoch 1595/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1564 - mae: 0.1564 - val_loss: 0.3165 - val_mae: 0.
3165
Epoch 1596/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1656 - mae: 0.1656 - val_loss: 0.2461 - val_mae: 0.
2461
Epoch 1597/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1681 - mae: 0.1681 - val_loss: 0.2236 - val_mae: 0.
2236
Epoch 1598/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.3081 - val_mae: 0.
```

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3081
Epoch 1599/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2044 - val_mae: 0.
2044
Epoch 1600/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1760 - mae: 0.1760 - val_loss: 0.2224 - val_mae: 0.
2224
Epoch 1601/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.3438 - val_mae: 0.
3438
Epoch 1602/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1660 - mae: 0.1660 - val_loss: 0.2130 - val_mae: 0.
2130
Epoch 1603/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1696 - mae: 0.1696 - val_loss: 0.2094 - val_mae: 0.
2094
Epoch 1604/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.2990 - val_mae: 0.
2990
Epoch 1605/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.2697 - val_mae: 0.
2697
Epoch 1606/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2417 - val_mae: 0.
2417
Epoch 1607/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.2392 - val_mae: 0.
2392
Epoch 1608/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.3295 - val_mae: 0.
3295
Epoch 1609/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.2210 - val_mae: 0.
2210
Epoch 1610/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.2369 - val_mae: 0.
2369
Epoch 1611/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2338 - val_mae: 0.
2338
Epoch 1612/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2835 - val_mae: 0.
2835
Epoch 1613/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2897 - val_mae: 0.
2897
Epoch 1614/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2548 - val_mae: 0.
2548
Epoch 1615/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2205 - val_mae: 0.
2205
Epoch 1616/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1738 - mae: 0.1738 - val_loss: 0.2147 - val_mae: 0.
2147
Epoch 1617/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.3394 - val_mae: 0.
3394
Epoch 1618/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1734 - mae: 0.1734 - val_loss: 0.2299 - val_mae: 0.
2299
Epoch 1619/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1688 - mae: 0.1688 - val_loss: 0.1988 - val_mae: 0.
1988
Epoch 1620/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.3345 - val_mae: 0.
3345
Epoch 1621/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1761 - mae: 0.1761 - val_loss: 0.2710 - val_mae: 0.
2710
Epoch 1622/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1655 - mae: 0.1655 - val_loss: 0.1946 - val_mae: 0.
1946
Epoch 1623/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.3075 - val_mae: 0.
3075
Epoch 1624/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.2531 - val_mae: 0.
2531
Epoch 1625/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2465 - val_mae: 0.
```

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2465
Epoch 1626/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1571 - mae: 0.1571 - val_loss: 0.2769 - val_mae: 0.
2769
Epoch 1627/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1578 - mae: 0.1578 - val_loss: 0.2391 - val_mae: 0.
2391
Epoch 1628/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2343 - val_mae: 0.
2343
Epoch 1629/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2677 - val_mae: 0.
2677
Epoch 1630/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2662 - val_mae: 0.
2662
Epoch 1631/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1646 - mae: 0.1646 - val_loss: 0.3274 - val_mae: 0.
3274
Epoch 1632/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1643 - mae: 0.1643 - val_loss: 0.1933 - val_mae: 0.
1933
Epoch 1633/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1989 - mae: 0.1989 - val_loss: 0.2013 - val_mae: 0.
2013
Epoch 1634/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.3609 - val_mae: 0.
3609
Epoch 1635/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1726 - mae: 0.1726 - val_loss: 0.2147 - val_mae: 0.
2147
Epoch 1636/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1836 - mae: 0.1836 - val_loss: 0.1831 - val_mae: 0.
1831
Epoch 1637/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1651 - mae: 0.1651 - val_loss: 0.3078 - val_mae: 0.
3078
Epoch 1638/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1630 - mae: 0.1630 - val_loss: 0.2247 - val_mae: 0.
2247
Epoch 1639/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2607 - val_mae: 0.
2607
Epoch 1640/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2667 - val_mae: 0.
2667
Epoch 1641/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1625 - mae: 0.1625 - val_loss: 0.3159 - val_mae: 0.
3159
Epoch 1642/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1654 - mae: 0.1654 - val_loss: 0.2329 - val_mae: 0.
2329
Epoch 1643/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1635 - mae: 0.1635 - val_loss: 0.2110 - val_mae: 0.
2110
Epoch 1644/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.2888 - val_mae: 0.
2888
Epoch 1645/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1578 - mae: 0.1578 - val_loss: 0.2275 - val_mae: 0.
2275
Epoch 1646/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1602 - mae: 0.1602 - val_loss: 0.2763 - val_mae: 0.
2763
Epoch 1647/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1602 - mae: 0.1602 - val_loss: 0.2843 - val_mae: 0.
2843
Epoch 1648/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2619 - val_mae: 0.
2619
Epoch 1649/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1574 - mae: 0.1574 - val_loss: 0.2303 - val_mae: 0.
2303
Epoch 1650/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2587 - val_mae: 0.
2587
Epoch 1651/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1639 - mae: 0.1639 - val_loss: 0.2686 - val_mae: 0.
2686
Epoch 1652/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1614 - mae: 0.1614 - val_loss: 0.2468 - val_mae: 0.
```

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2468
Epoch 1653/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2777 - val_mae: 0.
2777
Epoch 1654/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2396 - val_mae: 0.
2396
Epoch 1655/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.2817 - val_mae: 0.
2817
Epoch 1656/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2449 - val_mae: 0.
2449
Epoch 1657/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2494 - val_mae: 0.
2494
Epoch 1658/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1574 - mae: 0.1574 - val_loss: 0.3069 - val_mae: 0.
3069
Epoch 1659/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.2470 - val_mae: 0.
2470
Epoch 1660/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1660 - mae: 0.1660 - val_loss: 0.2255 - val_mae: 0.
2255
Epoch 1661/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1551 - mae: 0.1551 - val_loss: 0.3339 - val_mae: 0.
3339
Epoch 1662/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1650 - mae: 0.1650 - val_loss: 0.2138 - val_mae: 0.
2138
Epoch 1663/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1722 - mae: 0.1722 - val_loss: 0.2060 - val_mae: 0.
2060
Epoch 1664/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2756 - val_mae: 0.
2756
Epoch 1665/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.2835 - val_mae: 0.
2835
Epoch 1666/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2102 - val_mae: 0.
2102
Epoch 1667/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1635 - mae: 0.1635 - val_loss: 0.2137 - val_mae: 0.
2137
Epoch 1668/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1625 - mae: 0.1625 - val_loss: 0.2136 - val_mae: 0.
2136
Epoch 1669/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1651 - mae: 0.1651 - val_loss: 0.2432 - val_mae: 0.
2432
Epoch 1670/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2698 - val_mae: 0.
2698
Epoch 1671/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1577 - mae: 0.1577 - val_loss: 0.2109 - val_mae: 0.
2109
Epoch 1672/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.2496 - val_mae: 0.
2496
Epoch 1673/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2932 - val_mae: 0.
2932
Epoch 1674/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2620 - val_mae: 0.
2620
Epoch 1675/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2675 - val_mae: 0.
2675
Epoch 1676/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.2588 - val_mae: 0.
2588
Epoch 1677/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2553 - val_mae: 0.
2553
Epoch 1678/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.2814 - val_mae: 0.
2814
Epoch 1679/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2970 - val_mae: 0.
```

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2970
Epoch 1680/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1618 - mae: 0.1618 - val_loss: 0.2842 - val_mae: 0.
2842
Epoch 1681/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1627 - mae: 0.1627 - val_loss: 0.2661 - val_mae: 0.
2661
Epoch 1682/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.1765 - val_mae: 0.
1765
Epoch 1683/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1826 - mae: 0.1826 - val_loss: 0.2390 - val_mae: 0.
2390
Epoch 1684/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1619 - mae: 0.1619 - val_loss: 0.3599 - val_mae: 0.
3599
Epoch 1685/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1820 - mae: 0.1820 - val_loss: 0.2626 - val_mae: 0.
2626
Epoch 1686/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1624 - mae: 0.1624 - val_loss: 0.2184 - val_mae: 0.
2184
Epoch 1687/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1677 - mae: 0.1677 - val_loss: 0.3182 - val_mae: 0.
3182
Epoch 1688/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.2315 - val_mae: 0.
2315
Epoch 1689/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2568 - val_mae: 0.
2568
Epoch 1690/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2506 - val_mae: 0.
2506
Epoch 1691/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2056 - val_mae: 0.
2056
Epoch 1692/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.3056 - val_mae: 0.
3056
Epoch 1693/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1724 - mae: 0.1724 - val_loss: 0.3063 - val_mae: 0.
3063
Epoch 1694/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1644 - mae: 0.1644 - val_loss: 0.2089 - val_mae: 0.
2089
Epoch 1695/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2902 - val_mae: 0.
2902
Epoch 1696/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2414 - val_mae: 0.
2414
Epoch 1697/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.2945 - val_mae: 0.
2945
Epoch 1698/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1630 - mae: 0.1630 - val_loss: 0.2696 - val_mae: 0.
2696
Epoch 1699/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.2763 - val_mae: 0.
2763
Epoch 1700/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1577 - mae: 0.1577 - val_loss: 0.2420 - val_mae: 0.
2420
Epoch 1701/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2965 - val_mae: 0.
2965
Epoch 1702/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1654 - mae: 0.1654 - val_loss: 0.2552 - val_mae: 0.
2552
Epoch 1703/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1636 - mae: 0.1636 - val_loss: 0.1906 - val_mae: 0.
1906
Epoch 1704/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1679 - mae: 0.1679 - val_loss: 0.2946 - val_mae: 0.
2946
Epoch 1705/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.1916 - val_mae: 0.
1916
Epoch 1706/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1676 - mae: 0.1676 - val_loss: 0.2442 - val_mae: 0.
```

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2442
Epoch 1707/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2592 - val_mae: 0.
2592
Epoch 1708/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.2014 - val_mae: 0.
2014
Epoch 1709/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1647 - mae: 0.1647 - val_loss: 0.2816 - val_mae: 0.
2816
Epoch 1710/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.2308 - val_mae: 0.
2308
Epoch 1711/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1756 - mae: 0.1756 - val_loss: 0.2115 - val_mae: 0.
2115
Epoch 1712/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1779 - mae: 0.1779 - val_loss: 0.3393 - val_mae: 0.
3393
Epoch 1713/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1615 - mae: 0.1615 - val_loss: 0.1844 - val_mae: 0.
1844
Epoch 1714/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1843 - mae: 0.1843 - val_loss: 0.2006 - val_mae: 0.
2006
Epoch 1715/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.3033 - val_mae: 0.
3033
Epoch 1716/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1639 - mae: 0.1639 - val_loss: 0.2479 - val_mae: 0.
2479
Epoch 1717/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1661 - mae: 0.1661 - val_loss: 0.2635 - val_mae: 0.
2635
Epoch 1718/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.1937 - val_mae: 0.
1937
Epoch 1719/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1657 - mae: 0.1657 - val_loss: 0.3141 - val_mae: 0.
3141
Epoch 1720/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1663 - mae: 0.1663 - val_loss: 0.2579 - val_mae: 0.
2579
Epoch 1721/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1690 - mae: 0.1690 - val_loss: 0.2067 - val_mae: 0.
2067
Epoch 1722/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1568 - mae: 0.1568 - val_loss: 0.3062 - val_mae: 0.
3062
Epoch 1723/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.2552 - val_mae: 0.
2552
Epoch 1724/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2573 - val_mae: 0.
2573
Epoch 1725/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.2774 - val_mae: 0.
2774
Epoch 1726/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1777 - mae: 0.1777 - val_loss: 0.3570 - val_mae: 0.
3570
Epoch 1727/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1677 - mae: 0.1677 - val_loss: 0.2213 - val_mae: 0.
2213
Epoch 1728/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1609 - mae: 0.1609 - val_loss: 0.2376 - val_mae: 0.
2376
Epoch 1729/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2480 - val_mae: 0.
2480
Epoch 1730/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1577 - mae: 0.1577 - val_loss: 0.3092 - val_mae: 0.
3092
Epoch 1731/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1682 - mae: 0.1682 - val_loss: 0.2877 - val_mae: 0.
2877
Epoch 1732/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1641 - mae: 0.1641 - val_loss: 0.1975 - val_mae: 0.
1975
Epoch 1733/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2903 - val_mae: 0.
```

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2903
Epoch 1734/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2600 - val_mae: 0.
2600
Epoch 1735/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.1995 - val_mae: 0.
1995
Epoch 1736/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1679 - mae: 0.1679 - val_loss: 0.2341 - val_mae: 0.
2341
Epoch 1737/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.3387 - val_mae: 0.
3387
Epoch 1738/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1833 - mae: 0.1833 - val_loss: 0.3149 - val_mae: 0.
3149
Epoch 1739/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1609 - mae: 0.1609 - val_loss: 0.1781 - val_mae: 0.
1781
Epoch 1740/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1764 - mae: 0.1764 - val_loss: 0.2445 - val_mae: 0.
2445
Epoch 1741/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1618 - mae: 0.1618 - val_loss: 0.3156 - val_mae: 0.
3156
Epoch 1742/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1656 - mae: 0.1656 - val_loss: 0.2072 - val_mae: 0.
2072
Epoch 1743/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1699 - mae: 0.1699 - val_loss: 0.2640 - val_mae: 0.
2640
Epoch 1744/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1670 - mae: 0.1670 - val_loss: 0.3764 - val_mae: 0.
3764
Epoch 1745/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1788 - mae: 0.1788 - val_loss: 0.2087 - val_mae: 0.
2087
Epoch 1746/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1832 - mae: 0.1832 - val_loss: 0.1870 - val_mae: 0.
1870
Epoch 1747/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1713 - mae: 0.1713 - val_loss: 0.3692 - val_mae: 0.
3692
Epoch 1748/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1725 - mae: 0.1725 - val_loss: 0.1851 - val_mae: 0.
1851
Epoch 1749/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1782 - mae: 0.1782 - val_loss: 0.2279 - val_mae: 0.
2279
Epoch 1750/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1628 - mae: 0.1628 - val_loss: 0.2962 - val_mae: 0.
2962
Epoch 1751/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.2058 - val_mae: 0.
2058
Epoch 1752/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2977 - val_mae: 0.
2977
Epoch 1753/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2311 - val_mae: 0.
2311
Epoch 1754/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.2177 - val_mae: 0.
2177
Epoch 1755/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.3009 - val_mae: 0.
3009
Epoch 1756/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1658 - mae: 0.1658 - val_loss: 0.3179 - val_mae: 0.
3179
Epoch 1757/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1659 - mae: 0.1659 - val_loss: 0.2409 - val_mae: 0.
2409
Epoch 1758/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1726 - mae: 0.1726 - val_loss: 0.1934 - val_mae: 0.
1934
Epoch 1759/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.3005 - val_mae: 0.
3005
Epoch 1760/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.2604 - val_mae: 0.
```

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2604
Epoch 1761/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1640 - mae: 0.1640 - val_loss: 0.2385 - val_mae: 0.
2385
Epoch 1762/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1642 - mae: 0.1642 - val_loss: 0.2842 - val_mae: 0.
2842
Epoch 1763/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.2408 - val_mae: 0.
2408
Epoch 1764/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1635 - mae: 0.1635 - val_loss: 0.2984 - val_mae: 0.
2984
Epoch 1765/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2322 - val_mae: 0.
2322
Epoch 1766/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1614 - mae: 0.1614 - val_loss: 0.2988 - val_mae: 0.
2988
Epoch 1767/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2448 - val_mae: 0.
2448
Epoch 1768/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2774 - val_mae: 0.
2774
Epoch 1769/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.2692 - val_mae: 0.
2692
Epoch 1770/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2217 - val_mae: 0.
2217
Epoch 1771/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2865 - val_mae: 0.
2865
Epoch 1772/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2534 - val_mae: 0.
2534
Epoch 1773/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.2176 - val_mae: 0.
2176
Epoch 1774/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.3037 - val_mae: 0.
3037
Epoch 1775/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1705 - mae: 0.1705 - val_loss: 0.3083 - val_mae: 0.
3083
Epoch 1776/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2021 - val_mae: 0.
2021
Epoch 1777/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1695 - mae: 0.1695 - val_loss: 0.2203 - val_mae: 0.
2203
Epoch 1778/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1571 - mae: 0.1571 - val_loss: 0.3040 - val_mae: 0.
3040
Epoch 1779/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1657 - mae: 0.1657 - val_loss: 0.3027 - val_mae: 0.
3027
Epoch 1780/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2216 - val_mae: 0.
2216
Epoch 1781/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1692 - mae: 0.1692 - val_loss: 0.2546 - val_mae: 0.
2546
Epoch 1782/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1656 - mae: 0.1656 - val_loss: 0.3691 - val_mae: 0.
3691
Epoch 1783/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1728 - mae: 0.1728 - val_loss: 0.2192 - val_mae: 0.
2192
Epoch 1784/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1614 - mae: 0.1614 - val_loss: 0.2500 - val_mae: 0.
2500
Epoch 1785/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1570 - mae: 0.1570 - val_loss: 0.2724 - val_mae: 0.
2724
Epoch 1786/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1574 - mae: 0.1574 - val_loss: 0.2393 - val_mae: 0.
2393
Epoch 1787/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2317 - val_mae: 0.
```

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2317
Epoch 1788/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1614 - mae: 0.1614 - val_loss: 0.2652 - val_mae: 0.
2652
Epoch 1789/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1671 - mae: 0.1671 - val_loss: 0.3292 - val_mae: 0.
3292
Epoch 1790/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1681 - mae: 0.1681 - val_loss: 0.1891 - val_mae: 0.
1891
Epoch 1791/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1764 - mae: 0.1764 - val_loss: 0.2442 - val_mae: 0.
2442
Epoch 1792/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1673 - mae: 0.1673 - val_loss: 0.3452 - val_mae: 0.
3452
Epoch 1793/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1650 - mae: 0.1650 - val_loss: 0.1888 - val_mae: 0.
1888
Epoch 1794/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1658 - mae: 0.1658 - val_loss: 0.2563 - val_mae: 0.
2563
Epoch 1795/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2827 - val_mae: 0.
2827
Epoch 1796/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.2524 - val_mae: 0.
2524
Epoch 1797/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2155 - val_mae: 0.
2155
Epoch 1798/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2890 - val_mae: 0.
2890
Epoch 1799/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.2782 - val_mae: 0.
2782
Epoch 1800/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.1851 - val_mae: 0.
1851
Epoch 1801/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1754 - mae: 0.1754 - val_loss: 0.2488 - val_mae: 0.
2488
Epoch 1802/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1689 - mae: 0.1689 - val_loss: 0.3291 - val_mae: 0.
3291
Epoch 1803/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.2112 - val_mae: 0.
2112
Epoch 1804/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2964 - val_mae: 0.
2964
Epoch 1805/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1665 - mae: 0.1665 - val_loss: 0.2760 - val_mae: 0.
2760
Epoch 1806/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1554 - mae: 0.1554 - val_loss: 0.1850 - val_mae: 0.
1850
Epoch 1807/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1751 - mae: 0.1751 - val_loss: 0.2457 - val_mae: 0.
2457
Epoch 1808/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.3313 - val_mae: 0.
3313
Epoch 1809/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1702 - mae: 0.1702 - val_loss: 0.2679 - val_mae: 0.
2679
Epoch 1810/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2196 - val_mae: 0.
2196
Epoch 1811/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.2577 - val_mae: 0.
2577
Epoch 1812/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2500 - val_mae: 0.
2500
Epoch 1813/2000
5/5 [==============================] - 0s 19ms/step - loss: 0.1568 - mae: 0.1568 - val_loss: 0.2942 - val_mae: 0.
2942
Epoch 1814/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1646 - mae: 0.1646 - val_loss: 0.2460 - val_mae: 0.
```

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2460
Epoch 1815/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1648 - mae: 0.1648 - val_loss: 0.2066 - val_mae: 0.
2066
Epoch 1816/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.3071 - val_mae: 0.
3071
Epoch 1817/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1638 - mae: 0.1638 - val_loss: 0.2394 - val_mae: 0.
2394
Epoch 1818/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1659 - mae: 0.1659 - val_loss: 0.1858 - val_mae: 0.
1858
Epoch 1819/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1644 - mae: 0.1644 - val_loss: 0.2646 - val_mae: 0.
2646
Epoch 1820/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1583 - mae: 0.1583 - val_loss: 0.2581 - val_mae: 0.
2581
Epoch 1821/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1602 - mae: 0.1602 - val_loss: 0.2908 - val_mae: 0.
2908
Epoch 1822/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.2147 - val_mae: 0.
2147
Epoch 1823/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2936 - val_mae: 0.
2936
Epoch 1824/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1726 - mae: 0.1726 - val_loss: 0.3170 - val_mae: 0.
3170
Epoch 1825/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1662 - mae: 0.1662 - val_loss: 0.1790 - val_mae: 0.
1790
Epoch 1826/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1667 - mae: 0.1667 - val_loss: 0.2616 - val_mae: 0.
2616
Epoch 1827/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2716 - val_mae: 0.
2716
Epoch 1828/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2285 - val_mae: 0.
2285
Epoch 1829/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1630 - mae: 0.1630 - val_loss: 0.2502 - val_mae: 0.
2502
Epoch 1830/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.3007 - val_mae: 0.
3007
Epoch 1831/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1634 - mae: 0.1634 - val_loss: 0.2478 - val_mae: 0.
2478
Epoch 1832/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.2418 - val_mae: 0.
2418
Epoch 1833/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.3010 - val_mae: 0.
3010
Epoch 1834/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2159 - val_mae: 0.
2159
Epoch 1835/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1622 - mae: 0.1622 - val_loss: 0.2391 - val_mae: 0.
2391
Epoch 1836/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2272 - val_mae: 0.
2272
Epoch 1837/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1609 - mae: 0.1609 - val_loss: 0.2192 - val_mae: 0.
2192
Epoch 1838/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1651 - mae: 0.1651 - val_loss: 0.2466 - val_mae: 0.
2466
Epoch 1839/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1578 - mae: 0.1578 - val_loss: 0.3004 - val_mae: 0.
3004
Epoch 1840/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.2423 - val_mae: 0.
2423
Epoch 1841/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1576 - mae: 0.1576 - val_loss: 0.2944 - val_mae: 0.
```

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2944
Epoch 1842/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1735 - mae: 0.1735 - val_loss: 0.3056 - val_mae: 0.
3056
Epoch 1843/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1660 - mae: 0.1660 - val_loss: 0.2152 - val_mae: 0.
2152
Epoch 1844/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2717 - val_mae: 0.
2717
Epoch 1845/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1704 - mae: 0.1704 - val_loss: 0.1879 - val_mae: 0.
1879
Epoch 1846/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1650 - mae: 0.1650 - val_loss: 0.2652 - val_mae: 0.
2652
Epoch 1847/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2522 - val_mae: 0.
2522
Epoch 1848/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2547 - val_mae: 0.
2547
Epoch 1849/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.2652 - val_mae: 0.
2652
Epoch 1850/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1557 - mae: 0.1557 - val_loss: 0.1893 - val_mae: 0.
1893
Epoch 1851/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1748 - mae: 0.1748 - val_loss: 0.2120 - val_mae: 0.
2120
Epoch 1852/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2806 - val_mae: 0.
2806
Epoch 1853/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2676 - val_mae: 0.
2676
Epoch 1854/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.2341 - val_mae: 0.
2341
Epoch 1855/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1665 - mae: 0.1665 - val_loss: 0.2208 - val_mae: 0.
2208
Epoch 1856/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2344 - val_mae: 0.
2344
Epoch 1857/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1602 - mae: 0.1602 - val_loss: 0.2278 - val_mae: 0.
2278
Epoch 1858/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2904 - val_mae: 0.
2904
Epoch 1859/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1578 - mae: 0.1578 - val_loss: 0.2257 - val_mae: 0.
2257
Epoch 1860/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2241 - val_mae: 0.
2241
Epoch 1861/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.2876 - val_mae: 0.
2876
Epoch 1862/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2297 - val_mae: 0.
2297
Epoch 1863/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.2488 - val_mae: 0.
2488
Epoch 1864/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.3098 - val_mae: 0.
3098
Epoch 1865/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1650 - mae: 0.1650 - val_loss: 0.2583 - val_mae: 0.
2583
Epoch 1866/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1698 - mae: 0.1698 - val_loss: 0.1948 - val_mae: 0.
1948
Epoch 1867/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1628 - mae: 0.1628 - val_loss: 0.2807 - val_mae: 0.
2807
Epoch 1868/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1578 - mae: 0.1578 - val_loss: 0.2227 - val_mae: 0.
```

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2227
Epoch 1869/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1605 - mae: 0.1605 - val_loss: 0.2768 - val_mae: 0.
2768
Epoch 1870/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2771 - val_mae: 0.
2771
Epoch 1871/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1596 - mae: 0.1596 - val_loss: 0.2704 - val_mae: 0.
2704
Epoch 1872/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1587 - mae: 0.1587 - val_loss: 0.2656 - val_mae: 0.
2656
Epoch 1873/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1598 - mae: 0.1598 - val_loss: 0.2241 - val_mae: 0.
2241
Epoch 1874/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1571 - mae: 0.1571 - val_loss: 0.3145 - val_mae: 0.
3145
Epoch 1875/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1699 - mae: 0.1699 - val_loss: 0.2776 - val_mae: 0.
2776
Epoch 1876/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.1999 - val_mae: 0.
1999
Epoch 1877/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.2768 - val_mae: 0.
2768
Epoch 1878/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2484 - val_mae: 0.
2484
Epoch 1879/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1634 - mae: 0.1634 - val_loss: 0.2369 - val_mae: 0.
2369
Epoch 1880/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2477 - val_mae: 0.
2477
Epoch 1881/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1576 - mae: 0.1576 - val_loss: 0.2067 - val_mae: 0.
2067
Epoch 1882/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1616 - mae: 0.1616 - val_loss: 0.2797 - val_mae: 0.
2797
Epoch 1883/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1624 - mae: 0.1624 - val_loss: 0.2743 - val_mae: 0.
2743
Epoch 1884/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1631 - mae: 0.1631 - val_loss: 0.2209 - val_mae: 0.
2209
Epoch 1885/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1611 - mae: 0.1611 - val_loss: 0.2468 - val_mae: 0.
2468
Epoch 1886/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.2965 - val_mae: 0.
2965
Epoch 1887/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.2620 - val_mae: 0.
2620
Epoch 1888/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2399 - val_mae: 0.
2399
Epoch 1889/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1731 - mae: 0.1731 - val_loss: 0.3056 - val_mae: 0.
3056
Epoch 1890/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1562 - mae: 0.1562 - val_loss: 0.1794 - val_mae: 0.
1794
Epoch 1891/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1708 - mae: 0.1708 - val_loss: 0.2568 - val_mae: 0.
2568
Epoch 1892/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.2740 - val_mae: 0.
2740
Epoch 1893/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1579 - mae: 0.1579 - val_loss: 0.2175 - val_mae: 0.
2175
Epoch 1894/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.2789 - val_mae: 0.
2789
Epoch 1895/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1640 - mae: 0.1640 - val_loss: 0.2741 - val_mae: 0.
```

```
2741
Epoch 1896/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2108 - val_mae: 0.
2108
Epoch 1897/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.3014 - val_mae: 0.
3014
Epoch 1898/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1663 - mae: 0.1663 - val_loss: 0.2780 - val_mae: 0.
2780
Epoch 1899/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.2558 - val_mae: 0.
2558
Epoch 1900/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.2193 - val_mae: 0.
2193
Epoch 1901/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1636 - mae: 0.1636 - val_loss: 0.2248 - val_mae: 0.
2248
Epoch 1902/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1601 - mae: 0.1601 - val_loss: 0.3484 - val_mae: 0.
3484
Epoch 1903/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1881 - mae: 0.1881 - val_loss: 0.3041 - val_mae: 0.
3041
Epoch 1904/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1579 - mae: 0.1579 - val_loss: 0.1834 - val_mae: 0.
1834
Epoch 1905/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1686 - mae: 0.1686 - val_loss: 0.2518 - val_mae: 0.
2518
Epoch 1906/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1699 - mae: 0.1699 - val_loss: 0.3080 - val_mae: 0.
3080
Epoch 1907/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1626 - mae: 0.1626 - val_loss: 0.2498 - val_mae: 0.
2498
Epoch 1908/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1588 - mae: 0.1588 - val_loss: 0.2180 - val_mae: 0.
2180
Epoch 1909/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2753 - val_mae: 0.
2753
Epoch 1910/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.2911 - val_mae: 0.
2911
Epoch 1911/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2517 - val_mae: 0.
2517
Epoch 1912/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1581 - mae: 0.1581 - val_loss: 0.2771 - val_mae: 0.
2771
Epoch 1913/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1577 - mae: 0.1577 - val_loss: 0.2129 - val_mae: 0.
2129
Epoch 1914/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1604 - mae: 0.1604 - val_loss: 0.2520 - val_mae: 0.
2520
Epoch 1915/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.2874 - val_mae: 0.
2874
Epoch 1916/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.1997 - val_mae: 0.
1997
Epoch 1917/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2846 - val_mae: 0.
2846
Epoch 1918/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1674 - mae: 0.1674 - val_loss: 0.2878 - val_mae: 0.
2878
Epoch 1919/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1573 - mae: 0.1573 - val_loss: 0.1981 - val_mae: 0.
1981
Epoch 1920/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1660 - mae: 0.1660 - val_loss: 0.2430 - val_mae: 0.
2430
Epoch 1921/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2563 - val_mae: 0.
2563
Epoch 1922/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1568 - mae: 0.1568 - val_loss: 0.2208 - val_mae: 0.
```

2208
Epoch 1923/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1602 - mae: 0.1602 - val_loss: 0.2461 - val_mae: 0.
2461
Epoch 1924/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1579 - mae: 0.1579 - val_loss: 0.2702 - val_mae: 0.
2702
Epoch 1925/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1608 - mae: 0.1608 - val_loss: 0.2644 - val_mae: 0.
2644
Epoch 1926/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1677 - mae: 0.1677 - val_loss: 0.2946 - val_mae: 0.
2946
Epoch 1927/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.1942 - val_mae: 0.
1942
Epoch 1928/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2865 - val_mae: 0.
2865
Epoch 1929/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2441 - val_mae: 0.
2441
Epoch 1930/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1690 - mae: 0.1690 - val_loss: 0.2018 - val_mae: 0.
2018
Epoch 1931/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.2976 - val_mae: 0.
2976
Epoch 1932/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.1886 - val_mae: 0.
1886
Epoch 1933/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1683 - mae: 0.1683 - val_loss: 0.2406 - val_mae: 0.
2406
Epoch 1934/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.3147 - val_mae: 0.
3147
Epoch 1935/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1684 - mae: 0.1684 - val_loss: 0.2605 - val_mae: 0.
2605
Epoch 1936/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1624 - mae: 0.1624 - val_loss: 0.2251 - val_mae: 0.
2251
Epoch 1937/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2716 - val_mae: 0.
2716
Epoch 1938/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1570 - mae: 0.1570 - val_loss: 0.1834 - val_mae: 0.
1834
Epoch 1939/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1667 - mae: 0.1667 - val_loss: 0.2577 - val_mae: 0.
2577
Epoch 1940/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1589 - mae: 0.1589 - val_loss: 0.2513 - val_mae: 0.
2513
Epoch 1941/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1662 - mae: 0.1662 - val_loss: 0.1853 - val_mae: 0.
1853
Epoch 1942/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1652 - mae: 0.1652 - val_loss: 0.2622 - val_mae: 0.
2622
Epoch 1943/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1569 - mae: 0.1569 - val_loss: 0.2099 - val_mae: 0.
2099
Epoch 1944/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2585 - val_mae: 0.
2585
Epoch 1945/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1597 - mae: 0.1597 - val_loss: 0.2933 - val_mae: 0.
2933
Epoch 1946/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.2502 - val_mae: 0.
2502
Epoch 1947/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1593 - mae: 0.1593 - val_loss: 0.2112 - val_mae: 0.
2112
Epoch 1948/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1621 - mae: 0.1621 - val_loss: 0.2477 - val_mae: 0.
2477
Epoch 1949/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1592 - mae: 0.1592 - val_loss: 0.2701 - val_mae: 0.

```
2701
Epoch 1950/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1567 - mae: 0.1567 - val_loss: 0.2057 - val_mae: 0.
2057
Epoch 1951/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1667 - mae: 0.1667 - val_loss: 0.2354 - val_mae: 0.
2354
Epoch 1952/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1649 - mae: 0.1649 - val_loss: 0.2947 - val_mae: 0.
2947
Epoch 1953/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.2038 - val_mae: 0.
2038
Epoch 1954/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1639 - mae: 0.1639 - val_loss: 0.2927 - val_mae: 0.
2927
Epoch 1955/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1665 - mae: 0.1665 - val_loss: 0.2568 - val_mae: 0.
2568
Epoch 1956/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.2292 - val_mae: 0.
2292
Epoch 1957/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1612 - mae: 0.1612 - val_loss: 0.2953 - val_mae: 0.
2953
Epoch 1958/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1620 - mae: 0.1620 - val_loss: 0.1964 - val_mae: 0.
1964
Epoch 1959/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1653 - mae: 0.1653 - val_loss: 0.2393 - val_mae: 0.
2393
Epoch 1960/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.2759 - val_mae: 0.
2759
Epoch 1961/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1686 - mae: 0.1686 - val_loss: 0.2869 - val_mae: 0.
2869
Epoch 1962/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1704 - mae: 0.1704 - val_loss: 0.1680 - val_mae: 0.
1680
Epoch 1963/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1625 - mae: 0.1625 - val_loss: 0.3070 - val_mae: 0.
3070
Epoch 1964/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1722 - mae: 0.1722 - val_loss: 0.2918 - val_mae: 0.
2918
Epoch 1965/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1660 - mae: 0.1660 - val_loss: 0.1969 - val_mae: 0.
1969
Epoch 1966/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1586 - mae: 0.1586 - val_loss: 0.2875 - val_mae: 0.
2875
Epoch 1967/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1766 - mae: 0.1766 - val_loss: 0.2691 - val_mae: 0.
2691
Epoch 1968/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1654 - mae: 0.1654 - val_loss: 0.1713 - val_mae: 0.
1713
Epoch 1969/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1627 - mae: 0.1627 - val_loss: 0.2878 - val_mae: 0.
2878
Epoch 1970/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1594 - mae: 0.1594 - val_loss: 0.2291 - val_mae: 0.
2291
Epoch 1971/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1574 - mae: 0.1574 - val_loss: 0.2934 - val_mae: 0.
2934
Epoch 1972/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1639 - mae: 0.1639 - val_loss: 0.2628 - val_mae: 0.
2628
Epoch 1973/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1575 - mae: 0.1575 - val_loss: 0.1998 - val_mae: 0.
1998
Epoch 1974/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1654 - mae: 0.1654 - val_loss: 0.2361 - val_mae: 0.
2361
Epoch 1975/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2635 - val_mae: 0.
2635
Epoch 1976/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1570 - mae: 0.1570 - val_loss: 0.2163 - val_mae: 0.
```

```
2163
Epoch 1977/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1653 - mae: 0.1653 - val_loss: 0.2419 - val_mae: 0.
2419
Epoch 1978/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1686 - mae: 0.1686 - val_loss: 0.3011 - val_mae: 0.
3011
Epoch 1979/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1613 - mae: 0.1613 - val_loss: 0.1964 - val_mae: 0.
1964
Epoch 1980/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1599 - mae: 0.1599 - val_loss: 0.2861 - val_mae: 0.
2861
Epoch 1981/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2571 - val_mae: 0.
2571
Epoch 1982/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.2608 - val_mae: 0.
2608
Epoch 1983/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.2246 - val_mae: 0.
2246
Epoch 1984/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1661 - mae: 0.1661 - val_loss: 0.1693 - val_mae: 0.
1693
Epoch 1985/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1681 - mae: 0.1681 - val_loss: 0.2732 - val_mae: 0.
2732
Epoch 1986/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1619 - mae: 0.1619 - val_loss: 0.2939 - val_mae: 0.
2939
Epoch 1987/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.2125 - val_mae: 0.
2125
Epoch 1988/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1686 - mae: 0.1686 - val_loss: 0.2260 - val_mae: 0.
2260
Epoch 1989/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1577 - mae: 0.1577 - val_loss: 0.3130 - val_mae: 0.
3130
Epoch 1990/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1707 - mae: 0.1707 - val_loss: 0.2756 - val_mae: 0.
2756
Epoch 1991/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1682 - mae: 0.1682 - val_loss: 0.1725 - val_mae: 0.
1725
Epoch 1992/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1664 - mae: 0.1664 - val_loss: 0.2670 - val_mae: 0.
2670
Epoch 1993/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1633 - mae: 0.1633 - val_loss: 0.2645 - val_mae: 0.
2645
Epoch 1994/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1590 - mae: 0.1590 - val_loss: 0.2508 - val_mae: 0.
2508
Epoch 1995/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1658 - mae: 0.1658 - val_loss: 0.2954 - val_mae: 0.
2954
Epoch 1996/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1575 - mae: 0.1575 - val_loss: 0.1885 - val_mae: 0.
1885
Epoch 1997/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1662 - mae: 0.1662 - val_loss: 0.2394 - val_mae: 0.
2394
Epoch 1998/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1559 - mae: 0.1559 - val_loss: 0.2984 - val_mae: 0.
2984
Epoch 1999/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1673 - mae: 0.1673 - val_loss: 0.2669 - val_mae: 0.
2669
Epoch 2000/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1574 - mae: 0.1574 - val_loss: 0.1869 - val_mae: 0.
1869
```

In [76]:
```python
fig = plt.figure(dpi = 100)
plt.plot(history.history['mae'], color='red', label='mae')
plt.plot(history.history['val_mae'], color='blue', label='val_mae')
ax = plt.gca()
ax.set_xlabel('Epochs')
ax.set_ylabel(None)
```

```python
# ax.set_xlim(150,)
ax.set_ylim(0.,1.2)
# ax.set_yticks([])
ax.set_title(None)
ax.spines['top'].set_visible(False)
# ax.spines['left'].set_visible(False)
ax.spines['right'].set_visible(False)
plt.legend()
```

Out[76]: <matplotlib.legend.Legend at 0x1fe6c9d28b0>
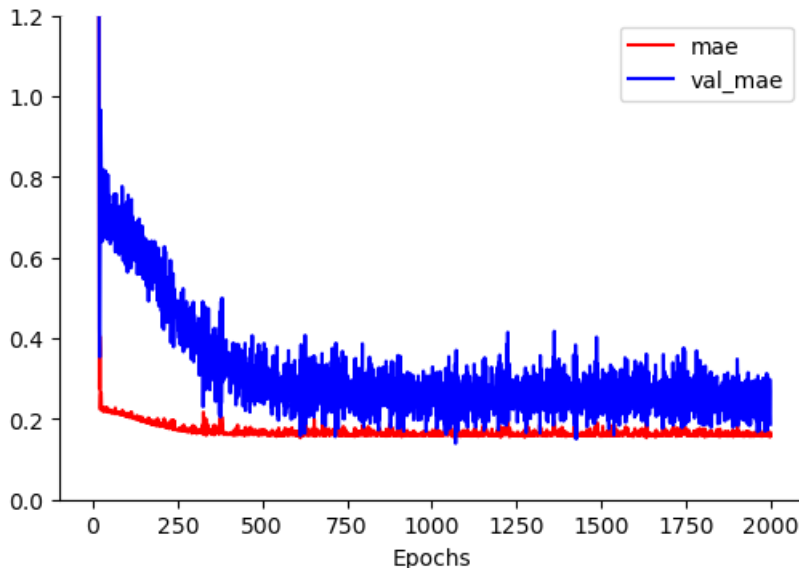
Predict

In [77]:
```python
model.evaluate(temperature_yearly.drop(['LandAverageTemperature'], axis = 1).to_numpy(), temperature_yearly['Land
```

6/6 [==============================] - 1s 4ms/step - loss: 0.1708 - mae: 0.1708

Out[77]: [0.17078997194766998, 0.17078997194766998]

In [78]:
```python
model.evaluate(X_valid, y_valid)
```

1/1 [==============================] - 0s 16ms/step - loss: 0.1869 - mae: 0.1869

Out[78]: [0.18691320717334747, 0.18691320717334747]

Validation MAE: somewhat better compared to that of 0.1883656435788189 for fixed-partition AR(3) and 0.15548113397624228 for rolling forecast AR(3). But it takes more time to tune and train the model.

In [79]:
```python
prediction = model.predict(temperature_yearly.drop(['LandAverageTemperature'], axis = 1).to_numpy())
```

In [80]:
```python
prediction_df = pd.Series(prediction.squeeze(), index = temperature_yearly.index)
```

In [81]:
```python
plt.figure(dpi=100)
temperature_yearly['LandAverageTemperature'].plot(ax=plt.gca())
prediction_df.plot(ax=plt.gca())
ax1 = plt.gca()
ax1.get_lines()[0].set_color("green")
ax1.get_lines()[1].set_color("tomato")
plt.title('Land Temperature Averaged by Year: \nTrue values (green) VS fixed-partition model prediction (red)')
ax1.set_xlabel('Year')
ax1.set_ylabel('Celsius')
ax1.spines['top'].set_visible(False)
ax1.spines['right'].set_visible(False)
# plt.savefig(r'plots/LandAverageTemperature_year_AR3_fixed_partition', dpi=150)
```

Land Temperature Averaged by Year:
True values (green) VS fixed-partition model prediction (red)
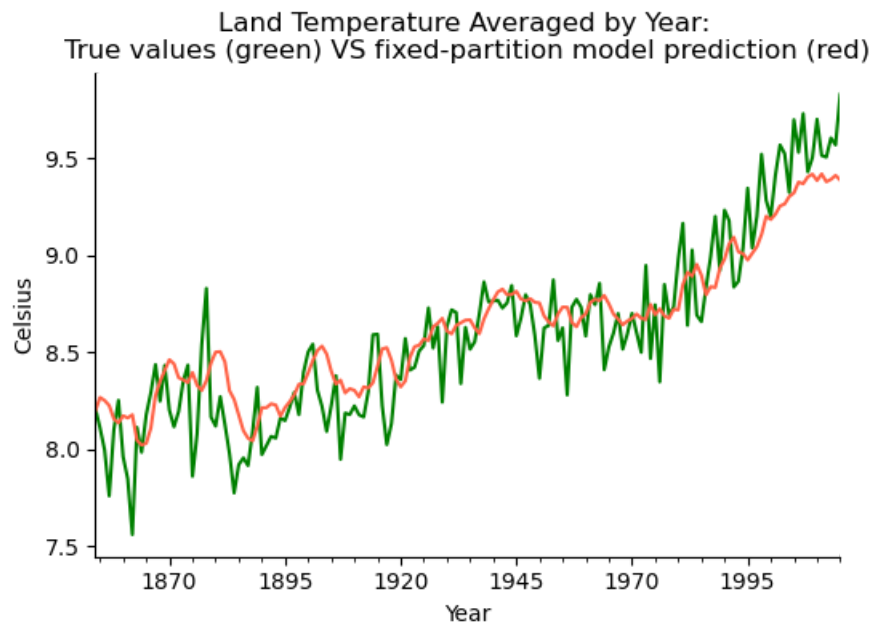
LSTM model for the first-differenced series

In [95]:

```python
# tf.keras.backend.clear_session()

model_diff = tf.keras.models.Sequential([
  tf.keras.layers.Lambda(lambda x: tf.expand_dims(x, axis=-1),
                         input_shape=[None]),
#     Conv1D(filters=64, kernel_size=1, activation='relu'),
  tf.keras.layers.Bidirectional(tf.keras.layers.LSTM(64, return_sequences=True)),
  tf.keras.layers.Bidirectional(tf.keras.layers.LSTM(64, return_sequences=False)),
#     tf.keras.layers.Dropout(0.2),
#   tf.keras.layers.Dense(16, kernel_regularizer=tf.keras.regularizers.l2(l2=1e-4), activation = 'relu'),
  tf.keras.layers.Dense(16),
  tf.keras.layers.Dense(1)
])
```

In [96]:

```python
from tensorflow.keras.optimizers.schedules import PolynomialDecay
lr_decay = PolynomialDecay(initial_learning_rate = 1e-3, decay_steps = 2500, end_learning_rate=1e-4, power = 0.5)

callback = tf.keras.callbacks.EarlyStopping(
    monitor='val_mae', mode = 'min', patience=3000, min_delta = 0.00001, restore_best_weights=True)

model_diff.compile(loss="mean_absolute_error", optimizer=tf.keras.optimizers.Adam(learning_rate=5e-5),metrics=["m
history_diff = model_diff.fit(Xdiff_shuffled_train, ydiff_shuffled_train,
                     validation_data=(Xdiff_valid, ydiff_valid),
                     epochs=2000, callbacks = [callback])
```

```
Epoch 1/2000
5/5 [==============================] - 5s 216ms/step - loss: 0.1774 - mae: 0.1774 - val_loss: 0.1890 - val_mae:
0.1890
Epoch 2/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1770 - mae: 0.1770 - val_loss: 0.1883 - val_mae: 0.
1883
Epoch 3/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1765 - mae: 0.1765 - val_loss: 0.1880 - val_mae: 0.
1880
Epoch 4/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1762 - mae: 0.1762 - val_loss: 0.1874 - val_mae: 0.
1874
Epoch 5/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1759 - mae: 0.1759 - val_loss: 0.1870 - val_mae: 0.
1870
Epoch 6/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1756 - mae: 0.1756 - val_loss: 0.1866 - val_mae: 0.
1866
Epoch 7/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1754 - mae: 0.1754 - val_loss: 0.1861 - val_mae: 0.
1861
Epoch 8/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1751 - mae: 0.1751 - val_loss: 0.1855 - val_mae: 0.
1855
Epoch 9/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1746 - mae: 0.1746 - val_loss: 0.1850 - val_mae: 0.
1850
Epoch 10/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1742 - mae: 0.1742 - val_loss: 0.1844 - val_mae: 0.
1844
Epoch 11/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1739 - mae: 0.1739 - val_loss: 0.1839 - val_mae: 0.
1839
Epoch 12/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1736 - mae: 0.1736 - val_loss: 0.1834 - val_mae: 0.
1834
Epoch 13/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1733 - mae: 0.1733 - val_loss: 0.1830 - val_mae: 0.
1830
Epoch 14/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1730 - mae: 0.1730 - val_loss: 0.1825 - val_mae: 0.
1825
Epoch 15/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1727 - mae: 0.1727 - val_loss: 0.1819 - val_mae: 0.
1819
Epoch 16/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1723 - mae: 0.1723 - val_loss: 0.1815 - val_mae: 0.
1815
Epoch 17/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1720 - mae: 0.1720 - val_loss: 0.1811 - val_mae: 0.
1811
Epoch 18/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1716 - mae: 0.1716 - val_loss: 0.1806 - val_mae: 0.
1806
Epoch 19/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1712 - mae: 0.1712 - val_loss: 0.1800 - val_mae: 0.
1800
Epoch 20/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1708 - mae: 0.1708 - val_loss: 0.1794 - val_mae: 0.
1794
Epoch 21/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1703 - mae: 0.1703 - val_loss: 0.1787 - val_mae: 0.
1787
Epoch 22/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1699 - mae: 0.1699 - val_loss: 0.1782 - val_mae: 0.
1782
Epoch 23/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1695 - mae: 0.1695 - val_loss: 0.1777 - val_mae: 0.
1777
Epoch 24/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1692 - mae: 0.1692 - val_loss: 0.1772 - val_mae: 0.
1772
Epoch 25/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1688 - mae: 0.1688 - val_loss: 0.1767 - val_mae: 0.
1767
Epoch 26/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1685 - mae: 0.1685 - val_loss: 0.1763 - val_mae: 0.
1763
Epoch 27/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1683 - mae: 0.1683 - val_loss: 0.1758 - val_mae: 0.
1758
Epoch 28/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1680 - mae: 0.1680 - val_loss: 0.1753 - val_mae: 0.
1753
Epoch 29/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1676 - mae: 0.1676 - val_loss: 0.1746 - val_mae: 0.
1746
Epoch 30/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1673 - mae: 0.1673 - val_loss: 0.1740 - val_mae: 0.
1740
Epoch 31/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1670 - mae: 0.1670 - val_loss: 0.1736 - val_mae: 0.
1736
Epoch 32/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1667 - mae: 0.1667 - val_loss: 0.1733 - val_mae: 0.
1733
Epoch 33/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1663 - mae: 0.1663 - val_loss: 0.1731 - val_mae: 0.
1731
Epoch 34/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1660 - mae: 0.1660 - val_loss: 0.1728 - val_mae: 0.
1728
Epoch 35/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1657 - mae: 0.1657 - val_loss: 0.1723 - val_mae: 0.
1723
Epoch 36/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1654 - mae: 0.1654 - val_loss: 0.1717 - val_mae: 0.
1717
Epoch 37/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1649 - mae: 0.1649 - val_loss: 0.1712 - val_mae: 0.
1712
Epoch 38/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1644 - mae: 0.1644 - val_loss: 0.1707 - val_mae: 0.
1707
Epoch 39/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1641 - mae: 0.1641 - val_loss: 0.1704 - val_mae: 0.
1704
Epoch 40/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1636 - mae: 0.1636 - val_loss: 0.1700 - val_mae: 0.
1700
Epoch 41/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1632 - mae: 0.1632 - val_loss: 0.1697 - val_mae: 0.
1697
Epoch 42/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1629 - mae: 0.1629 - val_loss: 0.1693 - val_mae: 0.
1693
Epoch 43/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1627 - mae: 0.1627 - val_loss: 0.1687 - val_mae: 0.
1687
Epoch 44/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1623 - mae: 0.1623 - val_loss: 0.1681 - val_mae: 0.
1681
Epoch 45/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1619 - mae: 0.1619 - val_loss: 0.1673 - val_mae: 0.
1673
Epoch 46/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1617 - mae: 0.1617 - val_loss: 0.1663 - val_mae: 0.
1663
Epoch 47/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1614 - mae: 0.1614 - val_loss: 0.1656 - val_mae: 0.
1656
Epoch 48/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1610 - mae: 0.1610 - val_loss: 0.1647 - val_mae: 0.
1647
Epoch 49/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1607 - mae: 0.1607 - val_loss: 0.1639 - val_mae: 0.
1639
Epoch 50/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1606 - mae: 0.1606 - val_loss: 0.1633 - val_mae: 0.
1633
Epoch 51/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1603 - mae: 0.1603 - val_loss: 0.1628 - val_mae: 0.
1628
Epoch 52/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1600 - mae: 0.1600 - val_loss: 0.1621 - val_mae: 0.
1621
Epoch 53/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1595 - mae: 0.1595 - val_loss: 0.1615 - val_mae: 0.
1615
Epoch 54/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1591 - mae: 0.1591 - val_loss: 0.1612 - val_mae: 0.
1612
Epoch 55/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1585 - mae: 0.1585 - val_loss: 0.1610 - val_mae: 0.
1610
Epoch 56/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1584 - mae: 0.1584 - val_loss: 0.1610 - val_mae: 0.
1610
Epoch 57/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1582 - mae: 0.1582 - val_loss: 0.1606 - val_mae: 0.
1606
Epoch 58/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1580 - mae: 0.1580 - val_loss: 0.1603 - val_mae: 0.
1603
Epoch 59/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1578 - mae: 0.1578 - val_loss: 0.1600 - val_mae: 0.
1600
Epoch 60/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1577 - mae: 0.1577 - val_loss: 0.1602 - val_mae: 0.
1602
Epoch 61/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1575 - mae: 0.1575 - val_loss: 0.1602 - val_mae: 0.
1602
Epoch 62/2000
```

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5/5 [==============================] - 0s 12ms/step - loss: 0.1573 - mae: 0.1573 - val_loss: 0.1598 - val_mae: 0.
1598
Epoch 63/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1571 - mae: 0.1571 - val_loss: 0.1590 - val_mae: 0.
1590
Epoch 64/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1567 - mae: 0.1567 - val_loss: 0.1577 - val_mae: 0.
1577
Epoch 65/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1563 - mae: 0.1563 - val_loss: 0.1568 - val_mae: 0.
1568
Epoch 66/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1561 - mae: 0.1561 - val_loss: 0.1563 - val_mae: 0.
1563
Epoch 67/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1559 - mae: 0.1559 - val_loss: 0.1556 - val_mae: 0.
1556
Epoch 68/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1558 - mae: 0.1558 - val_loss: 0.1550 - val_mae: 0.
1550
Epoch 69/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1558 - mae: 0.1558 - val_loss: 0.1542 - val_mae: 0.
1542
Epoch 70/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1558 - mae: 0.1558 - val_loss: 0.1537 - val_mae: 0.
1537
Epoch 71/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1558 - mae: 0.1558 - val_loss: 0.1536 - val_mae: 0.
1536
Epoch 72/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1557 - mae: 0.1557 - val_loss: 0.1535 - val_mae: 0.
1535
Epoch 73/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1556 - mae: 0.1556 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 74/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1556 - mae: 0.1556 - val_loss: 0.1530 - val_mae: 0.
1530
Epoch 75/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1555 - mae: 0.1555 - val_loss: 0.1529 - val_mae: 0.
1529
Epoch 76/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1554 - mae: 0.1554 - val_loss: 0.1526 - val_mae: 0.
1526
Epoch 77/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1555 - mae: 0.1555 - val_loss: 0.1522 - val_mae: 0.
1522
Epoch 78/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1554 - mae: 0.1554 - val_loss: 0.1522 - val_mae: 0.
1522
Epoch 79/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1553 - mae: 0.1553 - val_loss: 0.1521 - val_mae: 0.
1521
Epoch 80/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1550 - mae: 0.1550 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 81/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1548 - mae: 0.1548 - val_loss: 0.1531 - val_mae: 0.
1531
Epoch 82/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1546 - mae: 0.1546 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 83/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1546 - mae: 0.1546 - val_loss: 0.1535 - val_mae: 0.
1535
Epoch 84/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1544 - mae: 0.1544 - val_loss: 0.1539 - val_mae: 0.
1539
Epoch 85/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1544 - mae: 0.1544 - val_loss: 0.1544 - val_mae: 0.
1544
Epoch 86/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1544 - mae: 0.1544 - val_loss: 0.1546 - val_mae: 0.
1546
Epoch 87/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1545 - mae: 0.1545 - val_loss: 0.1546 - val_mae: 0.
1546
Epoch 88/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1546 - mae: 0.1546 - val_loss: 0.1546 - val_mae: 0.
1546
Epoch 89/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1545 - mae: 0.1545 - val_loss: 0.1542 - val_mae: 0.
1542
Epoch 90/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1544 - mae: 0.1544 - val_loss: 0.1537 - val_mae: 0.
1537
Epoch 91/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1535 - val_mae: 0.
1535
Epoch 92/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 93/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 94/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 95/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 96/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1537 - val_mae: 0.
1537
Epoch 97/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 98/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1532 - val_mae: 0.
1532
Epoch 99/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1532 - val_mae: 0.
1532
Epoch 100/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 101/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1538 - val_mae: 0.
1538
Epoch 102/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1538 - val_mae: 0.
1538
Epoch 103/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1538 - val_mae: 0.
1538
Epoch 104/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1537 - val_mae: 0.
1537
Epoch 105/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1535 - val_mae: 0.
1535
Epoch 106/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1536 - val_mae: 0.
1536
Epoch 107/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1538 - val_mae: 0.
1538
Epoch 108/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1540 - val_mae: 0.
1540
Epoch 109/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1542 - val_mae: 0.
1542
Epoch 110/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1542 - val_mae: 0.
1542
Epoch 111/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1541 - val_mae: 0.
1541
Epoch 112/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1540 - val_mae: 0.
1540
Epoch 113/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1537 - val_mae: 0.
1537
Epoch 114/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1535 - val_mae: 0.
1535
Epoch 115/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 116/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1537 - val_mae: 0.
1537
Epoch 117/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1538 - val_mae: 0.
1538
Epoch 118/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1539 - val_mae: 0.
1539
Epoch 119/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1538 - val_mae: 0.
1538
Epoch 120/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1539 - val_mae: 0.
1539
Epoch 121/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1538 - val_mae: 0.
1538
Epoch 122/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1536 - val_mae: 0.
1536
Epoch 123/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1535 - val_mae: 0.
1535
Epoch 124/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1531 - val_mae: 0.
1531
Epoch 125/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1532 - val_mae: 0.
1532
Epoch 126/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1535 - val_mae: 0.
1535
Epoch 127/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1538 - val_mae: 0.
1538
Epoch 128/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1541 - val_mae: 0.
1541
Epoch 129/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1541 - val_mae: 0.
1541
Epoch 130/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1540 - val_mae: 0.
1540
Epoch 131/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1537 - val_mae: 0.
1537
Epoch 132/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1530 - val_mae: 0.
1530
Epoch 133/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 134/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1526 - val_mae: 0.
1526
Epoch 135/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1528 - val_mae: 0.
1528
Epoch 136/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1527 - val_mae: 0.
1527
Epoch 137/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1527 - val_mae: 0.
1527
Epoch 138/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1528 - val_mae: 0.
1528
Epoch 139/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1533 - val_mae: 0.
1533
Epoch 140/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1536 - val_mae: 0.
1536
Epoch 141/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1537 - val_mae: 0.
1537
Epoch 142/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1535 - val_mae: 0.
1535
Epoch 143/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1533 - val_mae: 0.
1533
Epoch 144/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1532 - val_mae: 0.
1532
Epoch 145/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1533 - val_mae: 0.
1533
Epoch 146/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1536 - val_mae: 0.
1536
Epoch 147/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1540 - val_mae: 0.
1540
Epoch 148/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1541 - val_mae: 0.
1541
Epoch 149/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1537 - val_mae: 0.
1537
Epoch 150/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1533 - val_mae: 0.
1533
Epoch 151/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1526 - val_mae: 0.
1526
Epoch 152/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1522 - val_mae: 0.
1522
Epoch 153/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1520 - val_mae: 0.
1520
Epoch 154/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1519 - val_mae: 0.
1519
Epoch 155/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1517 - val_mae: 0.
1517
Epoch 156/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1518 - val_mae: 0.
1518
Epoch 157/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1521 - val_mae: 0.
1521
Epoch 158/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 159/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1529 - val_mae: 0.
1529
Epoch 160/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1532 - val_mae: 0.
1532
Epoch 161/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 162/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1532 - val_mae: 0.
1532
Epoch 163/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1532 - val_mae: 0.
1532
Epoch 164/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1533 - val_mae: 0.
1533
Epoch 165/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 166/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1536 - val_mae: 0.
1536
Epoch 167/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1536 - val_mae: 0.
1536
Epoch 168/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 169/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1530 - val_mae: 0.
1530
Epoch 170/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1524 - val_mae: 0.
1524
Epoch 171/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1519 - val_mae: 0.
1519
Epoch 172/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1516 - val_mae: 0.
1516
Epoch 173/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1516 - val_mae: 0.
1516
Epoch 174/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1518 - val_mae: 0.
1518
Epoch 175/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1518 - val_mae: 0.
1518
Epoch 176/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1517 - val_mae: 0.
1517
Epoch 177/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1515 - val_mae: 0.
1515
Epoch 178/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1513 - val_mae: 0.
1513
Epoch 179/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1513 - val_mae: 0.
1513
Epoch 180/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1513 - val_mae: 0.
1513
Epoch 181/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1513 - val_mae: 0.
1513
Epoch 182/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1516 - val_mae: 0.
1516
Epoch 183/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1519 - val_mae: 0.
1519
Epoch 184/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1524 - val_mae: 0.
1524
Epoch 185/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1528 - val_mae: 0.
1528
Epoch 186/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1532 - val_mae: 0.
1532
Epoch 187/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1535 - val_mae: 0.
1535
Epoch 188/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1533 - val_mae: 0.
1533
Epoch 189/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1529 - val_mae: 0.
1529
Epoch 190/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 191/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1524 - val_mae: 0.
1524
Epoch 192/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1523 - val_mae: 0.
1523
Epoch 193/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1522 - val_mae: 0.
1522
Epoch 194/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1520 - val_mae: 0.
1520
Epoch 195/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1519 - val_mae: 0.
1519
Epoch 196/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1523 - val_mae: 0.
1523
Epoch 197/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1524 - val_mae: 0.
1524
Epoch 198/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 199/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1527 - val_mae: 0.
1527
Epoch 200/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1530 - val_mae: 0.
1530
Epoch 201/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1531 - val_mae: 0.
1531
Epoch 202/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1529 - val_mae: 0.
1529
Epoch 203/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1528 - val_mae: 0.
1528
Epoch 204/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1528 - val_mae: 0.
1528
Epoch 205/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1528 - val_mae: 0.
1528
Epoch 206/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1526 - val_mae: 0.
1526
Epoch 207/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1529 - val_mae: 0.
1529
Epoch 208/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1532 - val_mae: 0.
1532
Epoch 209/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1533 - val_mae: 0.
1533
Epoch 210/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1534 - val_mae: 0.
1534
Epoch 211/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1533 - val_mae: 0.
1533
Epoch 212/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1532 - val_mae: 0.
1532
Epoch 213/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1529 - val_mae: 0.
1529
Epoch 214/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1544 - mae: 0.1544 - val_loss: 0.1528 - val_mae: 0.
1528
Epoch 215/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1544 - mae: 0.1544 - val_loss: 0.1526 - val_mae: 0.
1526
Epoch 216/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1544 - mae: 0.1544 - val_loss: 0.1523 - val_mae: 0.
1523
Epoch 217/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1544 - mae: 0.1544 - val_loss: 0.1523 - val_mae: 0.
1523
Epoch 218/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1521 - val_mae: 0.
1521
Epoch 219/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1543 - mae: 0.1543 - val_loss: 0.1520 - val_mae: 0.
1520
Epoch 220/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1544 - mae: 0.1544 - val_loss: 0.1519 - val_mae: 0.
1519
Epoch 221/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1543 - mae: 0.1543 - val_loss: 0.1522 - val_mae: 0.
1522
Epoch 222/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1543 - mae: 0.1543 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 223/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1543 - mae: 0.1543 - val_loss: 0.1527 - val_mae: 0.
1527
Epoch 224/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1529 - val_mae: 0.
1529
Epoch 225/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1533 - val_mae: 0.
1533
Epoch 226/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1536 - val_mae: 0.
1536
Epoch 227/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1537 - val_mae: 0.
1537
Epoch 228/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1540 - val_mae: 0.
1540
Epoch 229/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1541 - val_mae: 0.
1541
Epoch 230/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1540 - val_mae: 0.
1540
Epoch 231/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1538 - val_mae: 0.
1538
Epoch 232/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1533 - val_mae: 0.
1533
Epoch 233/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1529 - val_mae: 0.
1529
Epoch 234/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1529 - val_mae: 0.
1529
Epoch 235/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1528 - val_mae: 0.
1528
Epoch 236/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1524 - val_mae: 0.
1524
Epoch 237/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1520 - val_mae: 0.
1520
Epoch 238/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1519 - val_mae: 0.
1519
Epoch 239/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1521 - val_mae: 0.
1521
Epoch 240/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1523 - val_mae: 0.
1523
Epoch 241/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 242/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 243/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1526 - val_mae: 0.
1526
Epoch 244/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 245/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 246/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1527 - val_mae: 0.
1527
Epoch 247/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1529 - val_mae: 0.
1529
Epoch 248/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1531 - val_mae: 0.
1531
Epoch 249/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1530 - val_mae: 0.
1530
Epoch 250/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1530 - val_mae: 0.
1530
Epoch 251/2000
```

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5/5 [==============================] - 0s 10ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1532 - val_mae: 0.
1532
Epoch 252/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1533 - val_mae: 0.
1533
Epoch 253/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1531 - val_mae: 0.
1531
Epoch 254/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1528 - val_mae: 0.
1528
Epoch 255/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 256/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1524 - val_mae: 0.
1524
Epoch 257/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1526 - val_mae: 0.
1526
Epoch 258/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 259/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1520 - val_mae: 0.
1520
Epoch 260/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1516 - val_mae: 0.
1516
Epoch 261/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1513 - val_mae: 0.
1513
Epoch 262/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1512 - val_mae: 0.
1512
Epoch 263/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1515 - val_mae: 0.
1515
Epoch 264/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1518 - val_mae: 0.
1518
Epoch 265/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1517 - val_mae: 0.
1517
Epoch 266/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1516 - val_mae: 0.
1516
Epoch 267/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1517 - val_mae: 0.
1517
Epoch 268/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1521 - val_mae: 0.
1521
Epoch 269/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1524 - val_mae: 0.
1524
Epoch 270/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1525 - val_mae: 0.
1525
Epoch 271/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1522 - val_mae: 0.
1522
Epoch 272/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1522 - val_mae: 0.
1522
Epoch 273/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1521 - val_mae: 0.
1521
Epoch 274/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1520 - val_mae: 0.
1520
Epoch 275/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1520 - val_mae: 0.
1520
Epoch 276/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1519 - val_mae: 0.
1519
Epoch 277/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1518 - val_mae: 0.
1518
Epoch 278/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1518 - val_mae: 0.
1518
Epoch 279/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1518 - val_mae: 0.
1518
Epoch 280/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1517 - val_mae: 0.
1517
Epoch 281/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1514 - val_mae: 0.
1514
Epoch 282/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1513 - val_mae: 0.
1513
Epoch 283/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1510 - val_mae: 0.
1510
Epoch 284/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1509 - val_mae: 0.
1509
Epoch 285/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1510 - val_mae: 0.
1510
Epoch 286/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1510 - val_mae: 0.
1510
Epoch 287/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 288/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 289/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 290/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 291/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 292/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1510 - val_mae: 0.
1510
Epoch 293/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 294/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1513 - val_mae: 0.
1513
Epoch 295/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1513 - val_mae: 0.
1513
Epoch 296/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 297/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1510 - val_mae: 0.
1510
Epoch 298/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1508 - val_mae: 0.
1508
Epoch 299/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1507 - val_mae: 0.
1507
Epoch 300/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1504 - val_mae: 0.
1504
Epoch 301/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1498 - val_mae: 0.
1498
Epoch 302/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1493 - val_mae: 0.
1493
Epoch 303/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1541 - mae: 0.1541 - val_loss: 0.1491 - val_mae: 0.
1491
Epoch 304/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1492 - val_mae: 0.
1492
Epoch 305/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 306/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1539 - mae: 0.1539 - val_loss: 0.1499 - val_mae: 0.
1499
Epoch 307/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1503 - val_mae: 0.
1503
Epoch 308/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1508 - val_mae: 0.
1508
Epoch 309/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1513 - val_mae: 0.
1513
Epoch 310/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1515 - val_mae: 0.
1515
Epoch 311/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1519 - val_mae: 0.
1519
Epoch 312/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1518 - val_mae: 0.
1518
Epoch 313/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1515 - val_mae: 0.
1515
Epoch 314/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1515 - val_mae: 0.
1515
Epoch 315/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1519 - val_mae: 0.
1519
Epoch 316/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1523 - val_mae: 0.
1523
Epoch 317/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1527 - val_mae: 0.
1527
Epoch 318/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1542 - mae: 0.1542 - val_loss: 0.1530 - val_mae: 0.
1530
Epoch 319/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1544 - mae: 0.1544 - val_loss: 0.1528 - val_mae: 0.
1528
Epoch 320/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1523 - val_mae: 0.
1523
Epoch 321/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1519 - val_mae: 0.
1519
Epoch 322/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1518 - val_mae: 0.
1518
Epoch 323/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1516 - val_mae: 0.
1516
Epoch 324/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1517 - val_mae: 0.
1517
Epoch 325/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1517 - val_mae: 0.
1517
Epoch 326/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1514 - val_mae: 0.
1514
Epoch 327/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1510 - val_mae: 0.
1510
Epoch 328/2000
5/5 [==============================] - 0s 19ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1508 - val_mae: 0.
1508
Epoch 329/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1510 - val_mae: 0.
1510
Epoch 330/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1509 - val_mae: 0.
1509
Epoch 331/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1512 - val_mae: 0.
1512
Epoch 332/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1517 - val_mae: 0.
1517
Epoch 333/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1519 - val_mae: 0.
1519
Epoch 334/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1520 - val_mae: 0.
1520
Epoch 335/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1520 - val_mae: 0.
1520
Epoch 336/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1519 - val_mae: 0.
1519
Epoch 337/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1513 - val_mae: 0.
1513
Epoch 338/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1512 - val_mae: 0.
1512
Epoch 339/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1514 - val_mae: 0.
1514
Epoch 340/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1514 - val_mae: 0.
1514
Epoch 341/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1512 - val_mae: 0.
1512
Epoch 342/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1514 - val_mae: 0.
1514
Epoch 343/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1516 - val_mae: 0.
1516
Epoch 344/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1517 - val_mae: 0.
1517
Epoch 345/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1517 - val_mae: 0.
1517
Epoch 346/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1515 - val_mae: 0.
1515
Epoch 347/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1514 - val_mae: 0.
1514
Epoch 348/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1514 - val_mae: 0.
1514
Epoch 349/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1512 - val_mae: 0.
1512
Epoch 350/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1508 - val_mae: 0.
1508
Epoch 351/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1505 - val_mae: 0.
1505
Epoch 352/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1505 - val_mae: 0.
1505
Epoch 353/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1508 - val_mae: 0.
1508
Epoch 354/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1510 - val_mae: 0.
1510
Epoch 355/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1509 - val_mae: 0.
1509
Epoch 356/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1508 - val_mae: 0.
1508
Epoch 357/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1509 - val_mae: 0.
1509
Epoch 358/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1510 - val_mae: 0.
1510
Epoch 359/2000
```

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5/5 [==============================] - 0s 10ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 360/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1510 - val_mae: 0.
1510
Epoch 361/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1512 - val_mae: 0.
1512
Epoch 362/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1514 - val_mae: 0.
1514
Epoch 363/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1515 - val_mae: 0.
1515
Epoch 364/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1512 - val_mae: 0.
1512
Epoch 365/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1510 - val_mae: 0.
1510
Epoch 366/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1509 - val_mae: 0.
1509
Epoch 367/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1510 - val_mae: 0.
1510
Epoch 368/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1509 - val_mae: 0.
1509
Epoch 369/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1507 - val_mae: 0.
1507
Epoch 370/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 371/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 372/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1496 - val_mae: 0.
1496
Epoch 373/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 374/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1493 - val_mae: 0.
1493
Epoch 375/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1492 - val_mae: 0.
1492
Epoch 376/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1492 - val_mae: 0.
1492
Epoch 377/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1492 - val_mae: 0.
1492
Epoch 378/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 379/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1498 - val_mae: 0.
1498
Epoch 380/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1500 - val_mae: 0.
1500
Epoch 381/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 382/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1503 - val_mae: 0.
1503
Epoch 383/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1505 - val_mae: 0.
1505
Epoch 384/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1508 - val_mae: 0.
1508
Epoch 385/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1507 - val_mae: 0.
1507
Epoch 386/2000
```

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5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1506 - val_mae: 0.
1506
Epoch 387/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1507 - val_mae: 0.
1507
Epoch 388/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1509 - val_mae: 0.
1509
Epoch 389/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 390/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 391/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1509 - val_mae: 0.
1509
Epoch 392/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1505 - val_mae: 0.
1505
Epoch 393/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 394/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1498 - val_mae: 0.
1498
Epoch 395/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1496 - val_mae: 0.
1496
Epoch 396/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 397/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1496 - val_mae: 0.
1496
Epoch 398/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 399/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1492 - val_mae: 0.
1492
Epoch 400/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1536 - mae: 0.1536 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 401/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 402/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1498 - val_mae: 0.
1498
Epoch 403/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1504 - val_mae: 0.
1504
Epoch 404/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1508 - val_mae: 0.
1508
Epoch 405/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 406/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1512 - val_mae: 0.
1512
Epoch 407/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 408/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 409/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1509 - val_mae: 0.
1509
Epoch 410/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1504 - val_mae: 0.
1504
Epoch 411/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 412/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1499 - val_mae: 0.
1499
Epoch 413/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 414/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 415/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1493 - val_mae: 0.
1493
Epoch 416/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 417/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 418/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 419/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1492 - val_mae: 0.
1492
Epoch 420/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1491 - val_mae: 0.
1491
Epoch 421/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 422/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 423/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1496 - val_mae: 0.
1496
Epoch 424/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 425/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 426/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 427/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1493 - val_mae: 0.
1493
Epoch 428/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1496 - val_mae: 0.
1496
Epoch 429/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1502 - val_mae: 0.
1502
Epoch 430/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1508 - val_mae: 0.
1508
Epoch 431/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 432/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1511 - val_mae: 0.
1511
Epoch 433/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1508 - val_mae: 0.
1508
Epoch 434/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1506 - val_mae: 0.
1506
Epoch 435/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 436/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 437/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1504 - val_mae: 0.
1504
Epoch 438/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1505 - val_mae: 0.
1505
Epoch 439/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1507 - val_mae: 0.
1507
Epoch 440/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1506 - val_mae: 0.
1506
Epoch 441/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1505 - val_mae: 0.
1505
Epoch 442/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1504 - val_mae: 0.
1504
Epoch 443/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1506 - val_mae: 0.
1506
Epoch 444/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1505 - val_mae: 0.
1505
Epoch 445/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1504 - val_mae: 0.
1504
Epoch 446/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1505 - val_mae: 0.
1505
Epoch 447/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1502 - val_mae: 0.
1502
Epoch 448/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 449/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1493 - val_mae: 0.
1493
Epoch 450/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 451/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1484 - val_mae: 0.
1484
Epoch 452/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1483 - val_mae: 0.
1483
Epoch 453/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 454/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 455/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 456/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 457/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1484 - val_mae: 0.
1484
Epoch 458/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1483 - val_mae: 0.
1483
Epoch 459/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 460/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 461/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 462/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 463/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 464/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 465/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 466/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1484 - val_mae: 0.
1484
Epoch 467/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 468/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 469/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1498 - val_mae: 0.
1498
Epoch 470/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1500 - val_mae: 0.
1500
Epoch 471/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 472/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 473/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1500 - val_mae: 0.
1500
Epoch 474/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1496 - val_mae: 0.
1496
Epoch 475/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1491 - val_mae: 0.
1491
Epoch 476/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 477/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1490 - val_mae: 0.
1490
Epoch 478/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 479/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 480/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1484 - val_mae: 0.
1484
Epoch 481/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 482/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 483/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1490 - val_mae: 0.
1490
Epoch 484/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1492 - val_mae: 0.
1492
Epoch 485/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 486/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1496 - val_mae: 0.
1496
Epoch 487/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 488/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 489/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1499 - val_mae: 0.
1499
Epoch 490/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 491/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 492/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1502 - val_mae: 0.
1502
Epoch 493/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1502 - val_mae: 0.
1502
Epoch 494/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1503 - val_mae: 0.
1503
Epoch 495/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1504 - val_mae: 0.
1504
Epoch 496/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1505 - val_mae: 0.
1505
Epoch 497/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1535 - mae: 0.1535 - val_loss: 0.1506 - val_mae: 0.
1506
Epoch 498/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1537 - mae: 0.1537 - val_loss: 0.1507 - val_mae: 0.
1507
Epoch 499/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1540 - mae: 0.1540 - val_loss: 0.1503 - val_mae: 0.
1503
Epoch 500/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1538 - mae: 0.1538 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 501/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1493 - val_mae: 0.
1493
Epoch 502/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 503/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 504/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 505/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 506/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 507/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 508/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 509/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 510/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1484 - val_mae: 0.
1484
Epoch 511/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 512/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 513/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1483 - val_mae: 0.
1483
Epoch 514/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 515/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 516/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 517/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1490 - val_mae: 0.
1490
Epoch 518/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1492 - val_mae: 0.
1492
Epoch 519/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 520/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1502 - val_mae: 0.
1502
Epoch 521/2000
```

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5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1506 - val_mae: 0.
1506
Epoch 522/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1508 - val_mae: 0.
1508
Epoch 523/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1509 - val_mae: 0.
1509
Epoch 524/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1508 - val_mae: 0.
1508
Epoch 525/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1506 - val_mae: 0.
1506
Epoch 526/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1533 - mae: 0.1533 - val_loss: 0.1503 - val_mae: 0.
1503
Epoch 527/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1500 - val_mae: 0.
1500
Epoch 528/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1493 - val_mae: 0.
1493
Epoch 529/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 530/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1490 - val_mae: 0.
1490
Epoch 531/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 532/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1496 - val_mae: 0.
1496
Epoch 533/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 534/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1490 - val_mae: 0.
1490
Epoch 535/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 536/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1492 - val_mae: 0.
1492
Epoch 537/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 538/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1496 - val_mae: 0.
1496
Epoch 539/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1500 - val_mae: 0.
1500
Epoch 540/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1502 - val_mae: 0.
1502
Epoch 541/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1534 - mae: 0.1534 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 542/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1499 - val_mae: 0.
1499
Epoch 543/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1498 - val_mae: 0.
1498
Epoch 544/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 545/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 546/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1490 - val_mae: 0.
1490
Epoch 547/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 548/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1483 - val_mae: 0.
1483
Epoch 549/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1483 - val_mae: 0.
1483
Epoch 550/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 551/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 552/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 553/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 554/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 555/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 556/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1483 - val_mae: 0.
1483
Epoch 557/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 558/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 559/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 560/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 561/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1500 - val_mae: 0.
1500
Epoch 562/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1503 - val_mae: 0.
1503
Epoch 563/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1532 - mae: 0.1532 - val_loss: 0.1503 - val_mae: 0.
1503
Epoch 564/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 565/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1502 - val_mae: 0.
1502
Epoch 566/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1503 - val_mae: 0.
1503
Epoch 567/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1503 - val_mae: 0.
1503
Epoch 568/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1503 - val_mae: 0.
1503
Epoch 569/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1504 - val_mae: 0.
1504
Epoch 570/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1504 - val_mae: 0.
1504
Epoch 571/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1503 - val_mae: 0.
1503
Epoch 572/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1502 - val_mae: 0.
1502
Epoch 573/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1502 - val_mae: 0.
1502
Epoch 574/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 575/2000
```

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5/5 [==============================] - 0s 10ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1502 - val_mae: 0.
1502
Epoch 576/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 577/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1502 - val_mae: 0.
1502
Epoch 578/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1499 - val_mae: 0.
1499
Epoch 579/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 580/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 581/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 582/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1498 - val_mae: 0.
1498
Epoch 583/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1501 - val_mae: 0.
1501
Epoch 584/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1505 - val_mae: 0.
1505
Epoch 585/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1506 - val_mae: 0.
1506
Epoch 586/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1507 - val_mae: 0.
1507
Epoch 587/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1505 - val_mae: 0.
1505
Epoch 588/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1504 - val_mae: 0.
1504
Epoch 589/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1503 - val_mae: 0.
1503
Epoch 590/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1500 - val_mae: 0.
1500
Epoch 591/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1500 - val_mae: 0.
1500
Epoch 592/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1498 - val_mae: 0.
1498
Epoch 593/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1495 - val_mae: 0.
1495
Epoch 594/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1496 - val_mae: 0.
1496
Epoch 595/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 596/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1491 - val_mae: 0.
1491
Epoch 597/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 598/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 599/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 600/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 601/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 602/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 603/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 604/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 605/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 606/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 607/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 608/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 609/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 610/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 611/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 612/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 613/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 614/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 615/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 616/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1483 - val_mae: 0.
1483
Epoch 617/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 618/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 619/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 620/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 621/2000
5/5 [==============================] - 0s 19ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 622/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 623/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 624/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 625/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 626/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 627/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 628/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 629/2000
```

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5/5 [==============================] - 0s 14ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 630/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 631/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 632/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 633/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 634/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 635/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 636/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 637/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 638/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 639/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 640/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 641/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 642/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 643/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 644/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 645/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 646/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 647/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 648/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 649/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 650/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 651/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 652/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 653/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 654/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 655/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 656/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 657/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 658/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 659/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 660/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 661/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 662/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 663/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 664/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 665/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 666/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 667/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 668/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 669/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 670/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1490 - val_mae: 0.
1490
Epoch 671/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1490 - val_mae: 0.
1490
Epoch 672/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 673/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 674/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1483 - val_mae: 0.
1483
Epoch 675/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 676/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 677/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 678/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 679/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 680/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 681/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 682/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 683/2000
```

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5/5 [==============================] - 0s 17ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1484 - val_mae: 0.
1484
Epoch 684/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 685/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 686/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 687/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 688/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 689/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 690/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 691/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 692/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 693/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 694/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 695/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 696/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 697/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 698/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 699/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 700/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 701/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 702/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 703/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 704/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 705/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1484 - val_mae: 0.
1484
Epoch 706/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 707/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1493 - val_mae: 0.
1493
Epoch 708/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1496 - val_mae: 0.
1496
Epoch 709/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 710/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1494 - val_mae: 0.
1494
Epoch 711/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 712/2000
5/5 [==============================] - 0s 21ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1484 - val_mae: 0.
1484
Epoch 713/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 714/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 715/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 716/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 717/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 718/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 719/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1490 - val_mae: 0.
1490
Epoch 720/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1490 - val_mae: 0.
1490
Epoch 721/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 722/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 723/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 724/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 725/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1489 - val_mae: 0.
1489
Epoch 726/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 727/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1483 - val_mae: 0.
1483
Epoch 728/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 729/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 730/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 731/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 732/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 733/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1528 - mae: 0.1528 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 734/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 735/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1530 - mae: 0.1530 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 736/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 737/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1531 - mae: 0.1531 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 738/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1529 - mae: 0.1529 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 739/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1527 - mae: 0.1527 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 740/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1484 - val_mae: 0.
1484
Epoch 741/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 742/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 743/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 744/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 745/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 746/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1484 - val_mae: 0.
1484
Epoch 747/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 748/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1490 - val_mae: 0.
1490
Epoch 749/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1493 - val_mae: 0.
1493
Epoch 750/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1497 - val_mae: 0.
1497
Epoch 751/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1498 - val_mae: 0.
1498
Epoch 752/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1498 - val_mae: 0.
1498
Epoch 753/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1492 - val_mae: 0.
1492
Epoch 754/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 755/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1484 - val_mae: 0.
1484
Epoch 756/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 757/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 758/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 759/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 760/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 761/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 762/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 763/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 764/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 765/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 766/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 767/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 768/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 769/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 770/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 771/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 772/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 773/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 774/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 775/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1483 - val_mae: 0.
1483
Epoch 776/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 777/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1483 - val_mae: 0.
1483
Epoch 778/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1525 - mae: 0.1525 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 779/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1526 - mae: 0.1526 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 780/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 781/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 782/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 783/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 784/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 785/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 786/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 787/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 788/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 789/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 790/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 791/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 792/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 793/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 794/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 795/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 796/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 797/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 798/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 799/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 800/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 801/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 802/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 803/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 804/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 805/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 806/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 807/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 808/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 809/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 810/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 811/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 812/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 813/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 814/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 815/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 816/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 817/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 818/2000
```

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5/5 [==============================] - 0s 10ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 819/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 820/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 821/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 822/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 823/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 824/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 825/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 826/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 827/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 828/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 829/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 830/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 831/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 832/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 833/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 834/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 835/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 836/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 837/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 838/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 839/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 840/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 841/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 842/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 843/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 844/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 845/2000
```

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5/5 [==============================] - 0s 10ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 846/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 847/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 848/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 849/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 850/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 851/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 852/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 853/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 854/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 855/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 856/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 857/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 858/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 859/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 860/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1523 - mae: 0.1523 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 861/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 862/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 863/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 864/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 865/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 866/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1524 - mae: 0.1524 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 867/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 868/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 869/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 870/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 871/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 872/2000
```

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5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 873/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 874/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1522 - mae: 0.1522 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 875/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 876/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 877/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 878/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 879/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 880/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 881/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 882/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 883/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 884/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 885/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 886/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1521 - mae: 0.1521 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 887/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 888/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 889/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 890/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 891/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 892/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 893/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 894/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 895/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 896/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 897/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 898/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 899/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 900/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 901/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 902/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 903/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 904/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 905/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 906/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 907/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 908/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 909/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 910/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1483 - val_mae: 0.
1483
Epoch 911/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 912/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 913/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 914/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 915/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 916/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 917/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 918/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 919/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 920/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 921/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 922/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 923/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 924/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 925/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 926/2000
```

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5/5 [==============================] - 0s 10ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 927/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 928/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 929/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 930/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 931/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 932/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 933/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 934/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 935/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 936/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 937/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 938/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 939/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 940/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 941/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 942/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 943/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 944/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 945/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 946/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 947/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 948/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 949/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 950/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 951/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 952/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 953/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 954/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 955/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 956/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 957/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 958/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 959/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 960/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 961/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 962/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 963/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 964/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 965/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 966/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 967/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 968/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 969/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 970/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 971/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 972/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 973/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 974/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 975/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 976/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 977/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1484 - val_mae: 0.
1484
Epoch 978/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 979/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 980/2000
```

5/5 [==============================] - 0s 10ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1484 - val_mae: 0.1484
Epoch 981/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1481 - val_mae: 0.1481
Epoch 982/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1477 - val_mae: 0.1477
Epoch 983/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1471 - val_mae: 0.1471
Epoch 984/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1467 - val_mae: 0.1467
Epoch 985/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1467 - val_mae: 0.1467
Epoch 986/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1469 - val_mae: 0.1469
Epoch 987/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1471 - val_mae: 0.1471
Epoch 988/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1476 - val_mae: 0.1476
Epoch 989/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1480 - val_mae: 0.1480
Epoch 990/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1479 - val_mae: 0.1479
Epoch 991/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1476 - val_mae: 0.1476
Epoch 992/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1471 - val_mae: 0.1471
Epoch 993/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1466 - val_mae: 0.1466
Epoch 994/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1461 - val_mae: 0.1461
Epoch 995/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1457 - val_mae: 0.1457
Epoch 996/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1455 - val_mae: 0.1455
Epoch 997/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1454 - val_mae: 0.1454
Epoch 998/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1454 - val_mae: 0.1454
Epoch 999/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1454 - val_mae: 0.1454
Epoch 1000/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1453 - val_mae: 0.1453
Epoch 1001/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1449 - val_mae: 0.1449
Epoch 1002/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1445 - val_mae: 0.1445
Epoch 1003/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1444 - val_mae: 0.1444
Epoch 1004/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1446 - val_mae: 0.1446
Epoch 1005/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1449 - val_mae: 0.1449
Epoch 1006/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1455 - val_mae: 0.1455
Epoch 1007/2000

```
5/5 [==============================] - 0s 11ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1008/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1009/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1010/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1520 - mae: 0.1520 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1011/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1012/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1013/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1014/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1015/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1016/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1017/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1018/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1019/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1020/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1021/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1022/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1023/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1024/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1025/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1026/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1027/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1028/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1029/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1030/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1031/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1463 - val_mae: 0.
1463
Epoch 1032/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1033/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1034/2000
```

5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 1035/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 1036/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 1037/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 1038/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 1039/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1040/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 1041/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 1042/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1043/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 1044/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1045/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1463 - val_mae: 0.
1463
Epoch 1046/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1047/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1048/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1049/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1050/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 1051/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1052/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1053/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1054/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1055/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1056/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1057/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1058/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1059/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1060/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1061/2000

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5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1062/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1063/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1064/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1065/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1066/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1067/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1068/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1069/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1070/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1071/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1072/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1073/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1074/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1075/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1076/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1077/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1078/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1079/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1080/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1451 - val_mae: 0.
1451
Epoch 1081/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1082/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1083/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1084/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1085/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1086/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1087/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1088/2000
```

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5/5 [==============================] - 0s 16ms/step - loss: 0.1518 - mae: 0.1518 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1089/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1090/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1091/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1092/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1093/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 1094/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1095/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 1096/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 1097/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 1098/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 1099/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1517 - mae: 0.1517 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 1100/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1101/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1102/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 1103/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1463 - val_mae: 0.
1463
Epoch 1104/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1105/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1106/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1107/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1108/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1109/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1110/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1111/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1112/2000
5/5 [==============================] - 0s 19ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1113/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1114/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1115/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1116/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1117/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1118/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1119/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1120/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1121/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1122/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1123/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1124/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1125/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1126/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1127/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1128/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1129/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1130/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1131/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1132/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1133/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1134/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1135/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1136/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1137/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1138/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1139/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1140/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1141/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1513 - mae: 0.1513 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1142/2000
```

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5/5 [==============================] - 0s 13ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1143/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1144/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1145/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1146/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1147/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1148/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1149/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1150/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1151/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1152/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1153/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1431 - val_mae: 0.
1431
Epoch 1154/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1431 - val_mae: 0.
1431
Epoch 1155/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1430 - val_mae: 0.
1430
Epoch 1156/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1431 - val_mae: 0.
1431
Epoch 1157/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1158/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1159/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1160/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1161/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1162/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1163/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1164/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1165/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1166/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1167/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1168/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1169/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1170/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1171/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1172/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1173/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1174/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1175/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1176/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1177/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1178/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1179/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1180/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1181/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1182/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1183/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1184/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1185/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1186/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1187/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1188/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1189/2000
5/5 [==============================] - ETA: 0s - loss: 0.1545 - mae: 0.154 - 0s 15ms/step - loss: 0.1509 - mae:
 0.1509 - val_loss: 0.1441 - val_mae: 0.1441
Epoch 1190/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1191/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1192/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1430 - val_mae: 0.
1430
Epoch 1193/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1516 - mae: 0.1516 - val_loss: 0.1428 - val_mae: 0.
1428
Epoch 1194/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1519 - mae: 0.1519 - val_loss: 0.1428 - val_mae: 0.
1428
Epoch 1195/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1515 - mae: 0.1515 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1196/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1514 - mae: 0.1514 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1197/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1198/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1199/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1200/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1201/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1202/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1203/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1204/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1205/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1206/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1463 - val_mae: 0.
1463
Epoch 1207/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1208/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1463 - val_mae: 0.
1463
Epoch 1209/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1210/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1211/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1212/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1213/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1214/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1215/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1463 - val_mae: 0.
1463
Epoch 1216/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 1217/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1218/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 1219/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1220/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1221/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1222/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1223/2000
```

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5/5 [==============================] - 0s 14ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1224/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1225/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1226/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1227/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1228/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1229/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1230/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1231/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1232/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1233/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1234/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1235/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1236/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1237/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1238/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1239/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1240/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1241/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1242/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1243/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1451 - val_mae: 0.
1451
Epoch 1244/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1245/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1246/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1247/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1248/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1249/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1250/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1251/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1252/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1253/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1254/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1255/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1256/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1257/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1258/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1259/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1260/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1261/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1262/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1263/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1264/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1265/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1266/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1267/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1268/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1269/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1270/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1271/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1272/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1273/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1274/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1275/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1276/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1277/2000
```

```
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1278/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1279/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1280/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1281/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1282/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1283/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1428 - val_mae: 0.
1428
Epoch 1284/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1427 - val_mae: 0.
1427
Epoch 1285/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1427 - val_mae: 0.
1427
Epoch 1286/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1427 - val_mae: 0.
1427
Epoch 1287/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1428 - val_mae: 0.
1428
Epoch 1288/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1430 - val_mae: 0.
1430
Epoch 1289/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1290/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1291/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1292/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1293/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1294/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1431 - val_mae: 0.
1431
Epoch 1295/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1430 - val_mae: 0.
1430
Epoch 1296/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1428 - val_mae: 0.
1428
Epoch 1297/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1425 - val_mae: 0.
1425
Epoch 1298/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1425 - val_mae: 0.
1425
Epoch 1299/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1426 - val_mae: 0.
1426
Epoch 1300/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1429 - val_mae: 0.
1429
Epoch 1301/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1431 - val_mae: 0.
1431
Epoch 1302/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1303/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1304/2000
```

5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1305/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1306/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1307/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1308/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1309/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1310/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1311/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1312/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1313/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1314/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1315/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1316/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1317/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1318/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1319/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1320/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1321/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1322/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1323/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1324/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1325/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1326/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1463 - val_mae: 0.
1463
Epoch 1327/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1328/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1329/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 1330/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 1331/2000

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5/5 [==============================] - 0s 11ms/step - loss: 0.1512 - mae: 0.1512 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 1332/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 1333/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1334/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1335/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1336/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1337/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1338/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1339/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1340/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1341/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1342/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1343/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1344/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1345/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1346/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1347/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1348/2000
5/5 [==============================] - 0s 19ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1349/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1350/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1351/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1352/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1353/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1354/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1355/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1451 - val_mae: 0.
1451
Epoch 1356/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1357/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1358/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1359/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1360/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1361/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1362/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1363/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1364/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1365/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1366/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1367/2000
5/5 [==============================] - 0s 19ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1368/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1369/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1370/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1371/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1372/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1373/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1374/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1375/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1376/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1377/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1378/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1379/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1380/2000
5/5 [==============================] - 0s 18ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1381/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1382/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1383/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1384/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1385/2000
```

5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1426 - val_mae: 0.
1426
Epoch 1386/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1423 - val_mae: 0.
1423
Epoch 1387/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1421 - val_mae: 0.
1421
Epoch 1388/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1420 - val_mae: 0.
1420
Epoch 1389/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1420 - val_mae: 0.
1420
Epoch 1390/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1422 - val_mae: 0.
1422
Epoch 1391/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1424 - val_mae: 0.
1424
Epoch 1392/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1425 - val_mae: 0.
1425
Epoch 1393/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1424 - val_mae: 0.
1424
Epoch 1394/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1425 - val_mae: 0.
1425
Epoch 1395/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1429 - val_mae: 0.
1429
Epoch 1396/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1429 - val_mae: 0.
1429
Epoch 1397/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1398/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1399/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1400/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1401/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1402/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1403/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1404/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1510 - mae: 0.1510 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1405/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1406/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1508 - mae: 0.1508 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1407/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1408/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1409/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1410/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1411/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1412/2000

```
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1413/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1414/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1428 - val_mae: 0.
1428
Epoch 1415/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1424 - val_mae: 0.
1424
Epoch 1416/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1420 - val_mae: 0.
1420
Epoch 1417/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1419 - val_mae: 0.
1419
Epoch 1418/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1418 - val_mae: 0.
1418
Epoch 1419/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1418 - val_mae: 0.
1418
Epoch 1420/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1420 - val_mae: 0.
1420
Epoch 1421/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1423 - val_mae: 0.
1423
Epoch 1422/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1427 - val_mae: 0.
1427
Epoch 1423/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1429 - val_mae: 0.
1429
Epoch 1424/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1431 - val_mae: 0.
1431
Epoch 1425/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1430 - val_mae: 0.
1430
Epoch 1426/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1429 - val_mae: 0.
1429
Epoch 1427/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1428 - val_mae: 0.
1428
Epoch 1428/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1425 - val_mae: 0.
1425
Epoch 1429/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1425 - val_mae: 0.
1425
Epoch 1430/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1425 - val_mae: 0.
1425
Epoch 1431/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1427 - val_mae: 0.
1427
Epoch 1432/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1425 - val_mae: 0.
1425
Epoch 1433/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1423 - val_mae: 0.
1423
Epoch 1434/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1425 - val_mae: 0.
1425
Epoch 1435/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1426 - val_mae: 0.
1426
Epoch 1436/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1428 - val_mae: 0.
1428
Epoch 1437/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1438/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1431 - val_mae: 0.
1431
Epoch 1439/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1440/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1441/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1442/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1443/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1444/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1445/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1446/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1447/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1448/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1449/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1450/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1451/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1452/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1453/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1454/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1455/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1456/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1457/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1458/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1459/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1460/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1461/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1451 - val_mae: 0.
1451
Epoch 1462/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1463/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1464/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1465/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1466/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1467/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1468/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1469/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1470/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1471/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1472/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1473/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1463 - val_mae: 0.
1463
Epoch 1474/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1504 - mae: 0.1504 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1475/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1476/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1477/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1478/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1479/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1480/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1481/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1482/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1483/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1484/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1451 - val_mae: 0.
1451
Epoch 1485/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1486/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1487/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1488/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1489/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1490/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1491/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1492/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1493/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1494/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1495/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1496/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1497/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1498/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1499/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1500/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1501/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1502/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1503/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1427 - val_mae: 0.
1427
Epoch 1504/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1423 - val_mae: 0.
1423
Epoch 1505/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1422 - val_mae: 0.
1422
Epoch 1506/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1423 - val_mae: 0.
1423
Epoch 1507/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1428 - val_mae: 0.
1428
Epoch 1508/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1430 - val_mae: 0.
1430
Epoch 1509/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1430 - val_mae: 0.
1430
Epoch 1510/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1431 - val_mae: 0.
1431
Epoch 1511/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1512/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1513/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1514/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1515/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1516/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1517/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1518/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1519/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1520/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1521/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1522/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1523/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1524/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1525/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1526/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1527/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1528/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1529/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1530/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1531/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1532/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1533/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1534/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1535/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1536/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1537/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1538/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1539/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1540/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1541/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1542/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1543/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1544/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1545/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1546/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1505 - mae: 0.1505 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1547/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1502 - mae: 0.1502 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1548/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1549/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1550/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1551/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1451 - val_mae: 0.
1451
Epoch 1552/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1553/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1554/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1555/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1556/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1557/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1558/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1559/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1560/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1561/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1562/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1563/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1564/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1565/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1566/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1567/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1568/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1569/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1570/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1571/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1572/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1573/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1574/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1575/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1576/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1577/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1578/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1579/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1580/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1581/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1582/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1583/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1584/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1585/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1586/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1587/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1588/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1589/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1590/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1591/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1592/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1593/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1594/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1595/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1596/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1597/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1598/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 1599/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1500 - mae: 0.1500 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 1600/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 1601/2000
```

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5/5 [==============================] - 0s 12ms/step - loss: 0.1507 - mae: 0.1507 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 1602/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 1603/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1511 - mae: 0.1511 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 1604/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1509 - mae: 0.1509 - val_loss: 0.1485 - val_mae: 0.
1485
Epoch 1605/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1506 - mae: 0.1506 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 1606/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1503 - mae: 0.1503 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 1607/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1501 - mae: 0.1501 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1608/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1609/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1610/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1611/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1612/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1613/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1614/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1615/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1616/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1617/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1618/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1619/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1620/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1621/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1622/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1623/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1624/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1625/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1493 - mae: 0.1493 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1626/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1493 - mae: 0.1493 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1627/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1628/2000
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5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1629/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1630/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1631/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1632/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1633/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1634/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1635/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1636/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1637/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1638/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1430 - val_mae: 0.
1430
Epoch 1639/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1427 - val_mae: 0.
1427
Epoch 1640/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1425 - val_mae: 0.
1425
Epoch 1641/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1426 - val_mae: 0.
1426
Epoch 1642/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1428 - val_mae: 0.
1428
Epoch 1643/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1493 - mae: 0.1493 - val_loss: 0.1430 - val_mae: 0.
1430
Epoch 1644/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1645/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1646/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1498 - mae: 0.1498 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1647/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1648/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1649/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1650/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1651/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1652/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1653/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1654/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1655/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1451 - val_mae: 0.
1451
Epoch 1656/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1657/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1658/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1659/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1660/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1661/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1662/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1663/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1664/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1665/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1493 - mae: 0.1493 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1666/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1667/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1668/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1669/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1670/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1495 - mae: 0.1495 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1671/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1497 - mae: 0.1497 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1672/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1499 - mae: 0.1499 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1673/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1674/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1675/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1676/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1677/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1678/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1493 - mae: 0.1493 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1679/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1680/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1492 - mae: 0.1492 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1681/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1492 - mae: 0.1492 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1682/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1493 - mae: 0.1493 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1683/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1493 - mae: 0.1493 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1684/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1492 - mae: 0.1492 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1685/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1492 - mae: 0.1492 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1686/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1687/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1688/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1689/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1690/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1451 - val_mae: 0.
1451
Epoch 1691/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1493 - mae: 0.1493 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1692/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1492 - mae: 0.1492 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1693/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1694/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1695/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1696/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1697/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1698/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1441 - val_mae: 0.
1441
Epoch 1699/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1700/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1701/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1702/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1703/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1704/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1705/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1492 - mae: 0.1492 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1706/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1492 - mae: 0.1492 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1707/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1493 - mae: 0.1493 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1708/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1709/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1710/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1492 - mae: 0.1492 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1711/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1492 - mae: 0.1492 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1712/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1713/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1714/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1715/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1716/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1717/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1718/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1430 - val_mae: 0.
1430
Epoch 1719/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1429 - val_mae: 0.
1429
Epoch 1720/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1430 - val_mae: 0.
1430
Epoch 1721/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1722/2000
5/5 [==============================] - 0s 17ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1436 - val_mae: 0.
1436
Epoch 1723/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1724/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1725/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1726/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1727/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1728/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1729/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1730/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1731/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1732/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1733/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1492 - mae: 0.1492 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1734/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1493 - mae: 0.1493 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1735/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1493 - mae: 0.1493 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1736/2000
```

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5/5 [==============================] - 0s 14ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1737/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1440 - val_mae: 0.
1440
Epoch 1738/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1739/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1434 - val_mae: 0.
1434
Epoch 1740/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1741/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1742/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1743/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1744/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1438 - val_mae: 0.
1438
Epoch 1745/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1746/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1747/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1451 - val_mae: 0.
1451
Epoch 1748/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1749/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1750/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1751/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1492 - mae: 0.1492 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1752/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1753/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1451 - val_mae: 0.
1451
Epoch 1754/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1755/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1756/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1757/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1758/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1759/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1760/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1437 - val_mae: 0.
1437
Epoch 1761/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1762/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1763/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1764/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1765/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1432 - val_mae: 0.
1432
Epoch 1766/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1767/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1433 - val_mae: 0.
1433
Epoch 1768/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1435 - val_mae: 0.
1435
Epoch 1769/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1439 - val_mae: 0.
1439
Epoch 1770/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1444 - val_mae: 0.
1444
Epoch 1771/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1772/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1773/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1774/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1775/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1776/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1777/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1778/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1448 - val_mae: 0.
1448
Epoch 1779/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1780/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1781/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1782/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1783/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1784/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1785/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1786/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1787/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1463 - val_mae: 0.
1463
Epoch 1788/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1789/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1790/2000
```

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5/5 [==============================] - 0s 15ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1791/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1792/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1793/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1794/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1795/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1796/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1797/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1798/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1799/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1800/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1801/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1446 - val_mae: 0.
1446
Epoch 1802/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1449 - val_mae: 0.
1449
Epoch 1803/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1804/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1805/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1806/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1807/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1808/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1809/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1810/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1811/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1812/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1813/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1814/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1815/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1816/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1817/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1818/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1819/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1820/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1463 - val_mae: 0.
1463
Epoch 1821/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1822/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1823/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1824/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1825/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1826/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1827/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1828/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1447 - val_mae: 0.
1447
Epoch 1829/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1443 - val_mae: 0.
1443
Epoch 1830/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1831/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1442 - val_mae: 0.
1442
Epoch 1832/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1445 - val_mae: 0.
1445
Epoch 1833/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1450 - val_mae: 0.
1450
Epoch 1834/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1835/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1836/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1837/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1838/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1839/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1840/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1841/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1842/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 1843/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1844/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1845/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1489 - mae: 0.1489 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1846/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1847/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1848/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 1849/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1850/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1463 - val_mae: 0.
1463
Epoch 1851/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1852/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1853/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1854/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1855/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1856/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1857/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1858/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1859/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1860/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1861/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1862/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1863/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 1864/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1865/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1866/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1867/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1868/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1869/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1870/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1482 - mae: 0.1482 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 1871/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 1872/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1496 - mae: 0.1496 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 1873/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 1874/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1492 - mae: 0.1492 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 1875/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1494 - mae: 0.1494 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 1876/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 1877/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1878/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1879/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1880/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1881/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1882/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1883/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1884/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1885/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1464 - val_mae: 0.
1464
Epoch 1886/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 1887/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1888/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1889/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 1890/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1891/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 1892/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1893/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1482 - mae: 0.1482 - val_loss: 0.1457 - val_mae: 0.
1457
Epoch 1894/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1895/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1896/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1897/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1458 - val_mae: 0.
1458
Epoch 1898/2000
```

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5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1899/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1900/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1482 - mae: 0.1482 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1901/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1902/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1903/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1904/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1905/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1906/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1907/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 1908/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 1909/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 1910/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 1911/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 1912/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1913/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1914/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 1915/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1471 - val_mae: 0.
1471
Epoch 1916/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1917/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1918/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 1919/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 1920/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 1921/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 1922/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 1923/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 1924/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 1925/2000
```

5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 1926/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 1927/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 1928/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1929/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1930/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 1931/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 1932/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1479 - val_mae: 0.
1479
Epoch 1933/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 1934/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 1935/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1480 - val_mae: 0.
1480
Epoch 1936/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 1937/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 1938/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 1939/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 1940/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 1941/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 1942/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1477 - val_mae: 0.
1477
Epoch 1943/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 1944/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 1945/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1474 - val_mae: 0.
1474
Epoch 1946/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 1947/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 1948/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 1949/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 1950/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 1951/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1482 - mae: 0.1482 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 1952/2000

```
5/5 [==============================] - 0s 15ms/step - loss: 0.1482 - mae: 0.1482 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 1953/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1481 - mae: 0.1481 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 1954/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1955/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1956/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1459 - val_mae: 0.
1459
Epoch 1957/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1460 - val_mae: 0.
1460
Epoch 1958/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1463 - val_mae: 0.
1463
Epoch 1959/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1960/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1961/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1482 - mae: 0.1482 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 1962/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1482 - mae: 0.1482 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 1963/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1482 - mae: 0.1482 - val_loss: 0.1482 - val_mae: 0.
1482
Epoch 1964/2000
5/5 [==============================] - 0s 10ms/step - loss: 0.1481 - mae: 0.1481 - val_loss: 0.1486 - val_mae: 0.
1486
Epoch 1965/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1485 - mae: 0.1485 - val_loss: 0.1488 - val_mae: 0.
1488
Epoch 1966/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1490 - val_mae: 0.
1490
Epoch 1967/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1487 - val_mae: 0.
1487
Epoch 1968/2000
5/5 [==============================] - 0s 16ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1481 - val_mae: 0.
1481
Epoch 1969/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1482 - mae: 0.1482 - val_loss: 0.1478 - val_mae: 0.
1478
Epoch 1970/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1481 - mae: 0.1481 - val_loss: 0.1476 - val_mae: 0.
1476
Epoch 1971/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1481 - mae: 0.1481 - val_loss: 0.1475 - val_mae: 0.
1475
Epoch 1972/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1481 - mae: 0.1481 - val_loss: 0.1473 - val_mae: 0.
1473
Epoch 1973/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 1974/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1472 - val_mae: 0.
1472
Epoch 1975/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1480 - mae: 0.1480 - val_loss: 0.1467 - val_mae: 0.
1467
Epoch 1976/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 1977/2000
5/5 [==============================] - 0s 13ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1465 - val_mae: 0.
1465
Epoch 1978/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1979/2000
```

```
5/5 [==============================] - 0s 11ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1980/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1981/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1982/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1983/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1483 - mae: 0.1483 - val_loss: 0.1466 - val_mae: 0.
1466
Epoch 1984/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1480 - mae: 0.1480 - val_loss: 0.1461 - val_mae: 0.
1461
Epoch 1985/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1986/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1486 - mae: 0.1486 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1987/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1487 - mae: 0.1487 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1988/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1455 - val_mae: 0.
1455
Epoch 1989/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1453 - val_mae: 0.
1453
Epoch 1990/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1491 - mae: 0.1491 - val_loss: 0.1451 - val_mae: 0.
1451
Epoch 1991/2000
5/5 [==============================] - 0s 12ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1452 - val_mae: 0.
1452
Epoch 1992/2000
5/5 [==============================] - 0s 15ms/step - loss: 0.1490 - mae: 0.1490 - val_loss: 0.1454 - val_mae: 0.
1454
Epoch 1993/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1488 - mae: 0.1488 - val_loss: 0.1456 - val_mae: 0.
1456
Epoch 1994/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1484 - mae: 0.1484 - val_loss: 0.1462 - val_mae: 0.
1462
Epoch 1995/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1482 - mae: 0.1482 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1996/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1480 - mae: 0.1480 - val_loss: 0.1470 - val_mae: 0.
1470
Epoch 1997/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1479 - mae: 0.1479 - val_loss: 0.1469 - val_mae: 0.
1469
Epoch 1998/2000
5/5 [==============================] - 0s 14ms/step - loss: 0.1480 - mae: 0.1480 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 1999/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1479 - mae: 0.1479 - val_loss: 0.1468 - val_mae: 0.
1468
Epoch 2000/2000
5/5 [==============================] - 0s 11ms/step - loss: 0.1479 - mae: 0.1479 - val_loss: 0.1468 - val_mae: 0.
1468
```

In [97]:
```python
fig = plt.figure(dpi = 100)
plt.plot(history_diff.history['mae'], color='red', label='mae')
plt.plot(history_diff.history['val_mae'], color='blue', label='val_mae')
ax = plt.gca()
ax.set_xlabel('Epochs')
ax.set_ylabel(None)
# ax.set_xlim(150,)
# ax.set_ylim(0.,.2)
# ax.set_yticks([])
ax.set_title(None)
ax.spines['top'].set_visible(False)
# ax.spines['left'].set_visible(False)
ax.spines['right'].set_visible(False)
plt.legend()
```

Out[97]:   <matplotlib.legend.Legend at 0x1fe6c3fa4c0>
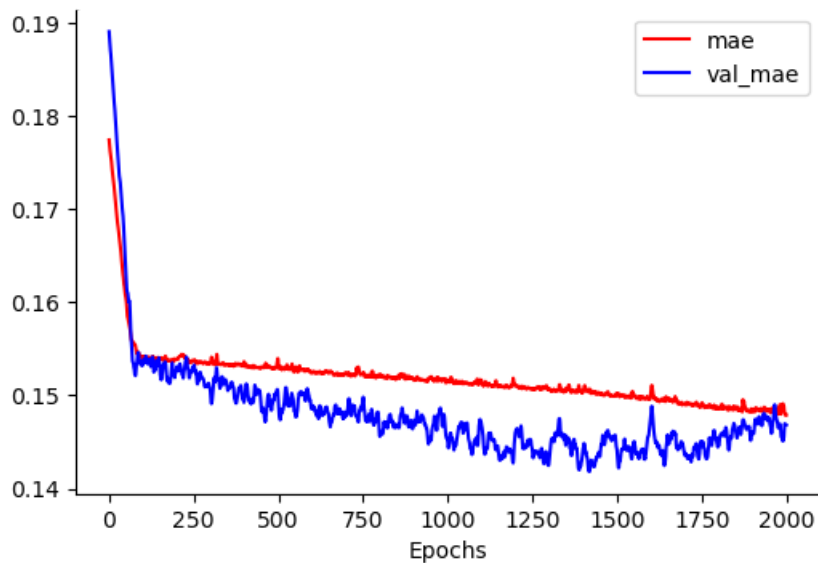
Predict

In [99]:
```python
model_diff.evaluate(temperature_yearly_diff.drop(['LandAverageTemperature'], axis = 1).to_numpy(), temperature_ye
```

```
6/6 [==============================] - 1s 4ms/step - loss: 0.1477 - mae: 0.1477
```

Out[99]:   [0.147746279835701, 0.147746279835701]

In [100…
```python
model_diff.evaluate(Xdiff_valid, ydiff_valid)
```

```
1/1 [==============================] - 0s 15ms/step - loss: 0.1468 - mae: 0.1468
```

Out[100…   [0.1468219757080078, 0.1468219757080078]

Validation MAE: better compared to that of 0.18691320717334747 for the non-differenced fixed-partition LSTM, 0.1883656435788189 for fixed-partition differenced AR(3) and 0.15548113397624228 for rolling forecast differenced AR(3). But it takes more time to train the model.

In [103…
```python
prediction_diff = model_diff.predict(temperature_yearly_diff.drop(['LandAverageTemperature'], axis = 1).to_numpy(
```

In [114…
```python
"""add the true time series to the first difference"""
prediction_diff_add = []
for i in range(len(prediction_diff)):
    prediction_diff_add.append(prediction_diff[i] + temperature_yearly['LandAverageTemperature'].iloc[i])
```

In [118…
```python
prediction_diff_add = pd.Series(prediction_diff_add, index = temperature_yearly_diff.index)
```

In [121…
```python
plt.figure(dpi=100)
temperature_yearly['LandAverageTemperature'].plot(ax=plt.gca())
prediction_diff_add.plot(ax=plt.gca())
ax1 = plt.gca()
ax1.get_lines()[0].set_color("green")
ax1.get_lines()[1].set_color("tomato")
plt.title('Land Temperature Averaged by Year: \nTrue values (green) VS \nfixed-partition, first difference model
ax1.set_xlabel('Year')
ax1.set_ylabel('Celsius')
ax1.spines['top'].set_visible(False)
ax1.spines['right'].set_visible(False)
# plt.savefig(r'plots/LandAverageTemperature_year_AR3_fixed_partition', dpi=150)
```

Land Temperature Averaged by Year: True values (green) VS fixed-partition, first difference model prediction (red)
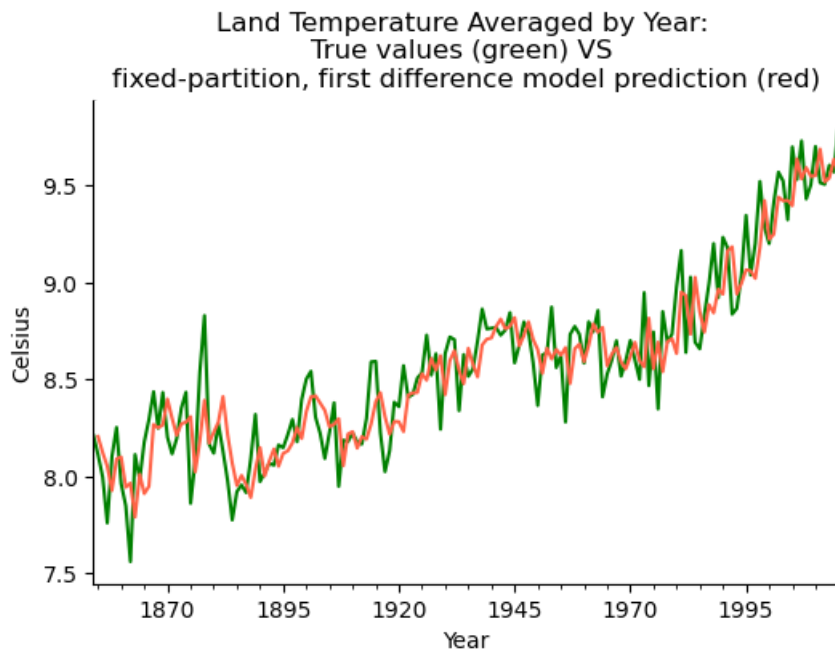
In [122…
```python
from sklearn.metrics import mean_absolute_error
```

In [124…
```python
mean_absolute_error(temperature_yearly['LandAverageTemperature'].iloc[1:], prediction_diff_add)
```

Out[124… `0.14774628531187006`

Rolling forecast

To mimick real-world deployment, we perform rolling forecast on the first difference. The first split is again at 1986-12-31. At each time step, we use as training set the ground truth from the previous time steps, which is re-shuffled to eliminate sequence bias. The training set is used to fit an LSTM model which has the same architecture as model_diff used above in fixed partitioning. Without using a validation set (which would involve peeking into future data) during model training, we train it for 1500 epochs; that is the ballpark which the fixed-partitioning model reached the lowest validation MAE.

In [134…
```python
# split_time = pd.Timestamp(1986,6,30)
temperature_yearly_diff.index[131]
```

Out[134… `Timestamp('1986-12-31 00:00:00', freq='A-DEC')`

In [176…
```python
from tqdm import tqdm      # fancy progress bar for the for-loop
size = 131

# ground truth (first difference and lags) from past time steps
history_diff_rolling = temperature_yearly_diff_train.to_numpy().copy()
# ground truth (first difference and lags) at present/future time steps
diff_rolling_valid = temperature_yearly_diff_valid
# rolling forecast predictions
rolling_forecast_first_diff1 = []
# LSTM model history at each time step
historiesLSTM = []

# for t in range(1):
for t in tqdm(range(len(temperature_yearly_diff_valid))):
    # re-shuffle training set to avoid sequence bias
    np.random.seed(0)
    np.random.shuffle(history_diff_rolling)
    Xdiff_roll_shuffled_train, ydiff_roll_shuffled_train = history_diff_rolling[:,1:], history_diff_rolling[:,0]

    # define LSTM model
    model_diff_roll = tf.keras.models.Sequential([
  tf.keras.layers.Lambda(lambda x: tf.expand_dims(x, axis=-1),
                    input_shape=[None]),
```

```python
    tf.keras.layers.Bidirectional(tf.keras.layers.LSTM(64, return_sequences=True)),
  tf.keras.layers.Bidirectional(tf.keras.layers.LSTM(64, return_sequences=False)),
    tf.keras.layers.Dense(16),
    tf.keras.layers.Dense(1)
])
    model_diff_roll.compile(loss="mean_absolute_error", optimizer=tf.keras.optimizers.Adam(learning_rate=5e-5),me
    # train on training set, without using a validation set to avoid data leakage
    history_LSTM = model_diff_roll.fit(Xdiff_roll_shuffled_train, ydiff_roll_shuffled_train,
                    epochs=1500, verbose=0)
    historiesLSTM.append(history_LSTM)
    # forecast one time step ahead
    output = model_diff.predict(np.expand_dims(diff_rolling_valid.drop(['LandAverageTemperature'], axis = 1).iloc
    rolling_forecast_first_diff1.append(output)

    # update the training set by including data from the present time step for the forecast the next time step
    history_diff_rolling = np.vstack([history_diff_rolling, np.expand_dims(diff_rolling_valid.iloc[0].to_numpy(),
    diff_rolling_valid = diff_rolling_valid.iloc[1:]
```

```
100%|████████████| 30/30 [27:20<00:00, 54.69s/it]
```

In [177… `rolling_forecast_first_diff1`

Out[177…
```
[0.08573034405708313,
 0.05274385213851929,
 -0.15096458792686462,
 -0.23625636100769043,
 0.018153468146920204,
 -0.07122654467821121,
 0.005400834605097771,
 0.10428426414728165,
 0.1290794163942337,
 0.02759922854602337,
 -0.2864695191383362,
 -0.017439154908061028,
 -0.021508587524294853,
 -0.09892455488443375,
 -0.061148397624492645,
 0.048556938767433167,
 0.027062105014920235,
 -0.14767062664031982,
 -0.10098777711391449,
 0.07293521612882614,
 -0.062044400721788406,
 0.00256302859634161,
 -0.13827089965343475,
 0.11672736704349518,
 0.04756740480661392,
 -0.013416983187198639,
 0.004878432955592871,
 0.03313745558261871,
 0.030548904091119766,
 -0.0036572820972651243]
```
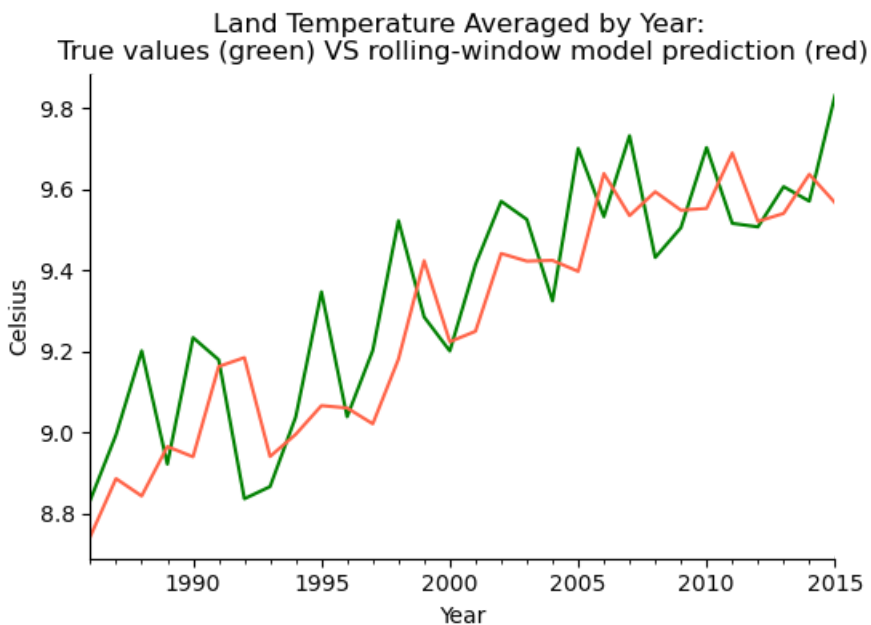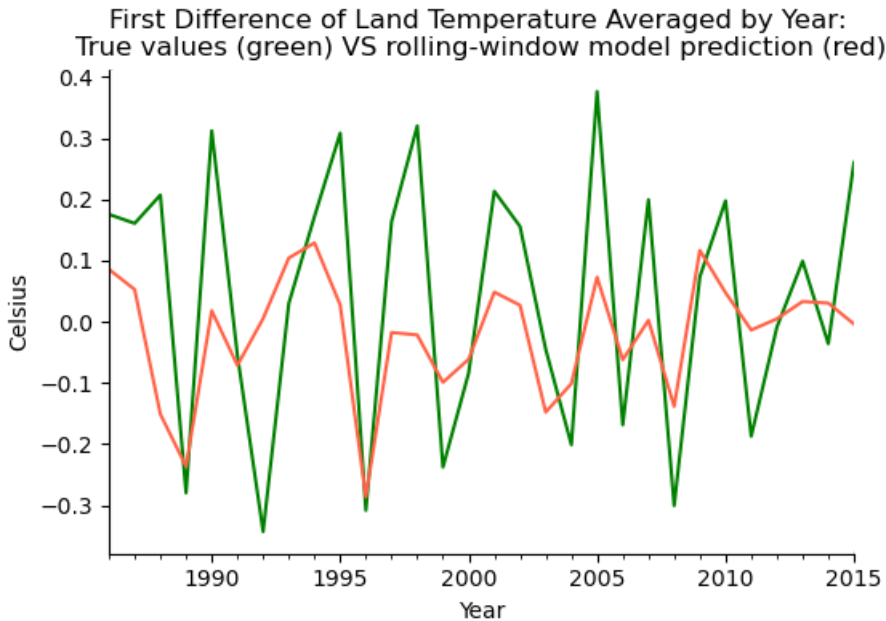
Predict

In [185…
```python
"""add the true time series to the first difference"""
prediction_diff_add_roll = []
for i in range(len(rolling_forecast_first_diff1)):
    if i == 0:
        prediction_diff_add_roll.append(rolling_forecast_first_diff1[0] + temperature_yearly_train['LandAverageTe
    else:
        prediction_diff_add_roll.append(rolling_forecast_first_diff1[i] + temperature_yearly_valid['LandAverageTe
```

In [186…
```python
plt.figure(dpi=100)
temperature_yearly_diff_valid['LandAverageTemperature'].plot(ax=plt.gca())
pd.Series(rolling_forecast_first_diff1, index = temperature_yearly_diff_valid.index).plot(ax=plt.gca())
ax1 = plt.gca()
ax1.get_lines()[0].set_color("green")
ax1.get_lines()[1].set_color("tomato")
plt.title('First Difference of Land Temperature Averaged by Year: \nTrue values (green) VS rolling-window model p
ax1.set_xlabel('Year')
ax1.set_ylabel('Celsius')
ax1.spines['top'].set_visible(False)
ax1.spines['right'].set_visible(False)
```

```
# plt.savefig(r'plots/LandAverageTemperature_year_AR3_rolling_forecast_first_diff', dpi=150)


plt.figure(dpi=100)
temperature_yearly_valid['LandAverageTemperature'].plot(ax=plt.gca())
pd.Series(prediction_diff_add_roll, index = temperature_yearly_valid.index).plot(ax=plt.gca())
ax1 = plt.gca()
ax1.get_lines()[0].set_color("green")
ax1.get_lines()[1].set_color("tomato")
plt.title('Land Temperature Averaged by Year: \nTrue values (green) VS rolling-window model prediction (red)')
ax1.set_xlabel('Year')
ax1.set_ylabel('Celsius')
ax1.spines['top'].set_visible(False)
ax1.spines['right'].set_visible(False)
```


First Difference of Land Temperature Averaged by Year:
True values (green) VS rolling-window model prediction (red)

Land Temperature Averaged by Year:
True values (green) VS rolling-window model prediction (red)

MAE

```
In [192…   mean_absolute_error(temperature_yearly_valid['LandAverageTemperature'], pd.Series(prediction_diff_add_roll, index
```

```
Out[192…   0.1468219745035955
```

Naive Forecast (lag 1)

In [212…
```python
temperature_yearly_naive = [np.nan] + temperature_yearly['LandAverageTemperature'].to_list()[:-1]
```

In [213…
```python
mean_absolute_error(temperature_yearly_valid['LandAverageTemperature'], pd.Series(temperature_yearly_naive[-30:],
```

Out[213…
```
0.18930555555555575
```

Summary of Results

Validation (data from 1986 onward) MAE:
Naive forecast (lag 1): 0.18930555555555575
AR(3) fixed partitioning: 0.1883656435788189
AR(3) rolling forecast: 0.15548113397624228

LSTM, without differencing, fixed partitioning: 0.18691320717334747
LSTM, with differencing, fixed partitioning: 0.1468219757080078

LSTM, with differencing, rolling forecast: 0.14682197450355955

In [ ]:

In [ ]:

In [ ]:

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In [ ]: