Semiconductor_MLP

October 31, 2022

1 Importing Packages

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[ ]:
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```
[1]: #Importing Libraries
     #Data manipulation
     import pandas as pd
     import numpy as np
     import statistics
     import matplotlib.pyplot as plt

     #Preprocessing
     from sklearn import datasets
     from sklearn.preprocessing import StandardScaler
     from sklearn.model_selection import train_test_split

     #Neural Network
     import keras
     from keras.models import Sequential
     from keras.layers import Dense
     import tensorflow as tf
     from sklearn.metrics import r2_score
     from keras.regularizers import L2, L1, L1L2
     from sklearn.model_selection import KFold
     from keras import backend


     # Ignore Warnings
     import warnings
     warnings.filterwarnings("ignore")
```

```
[2]: #Random Seed
     tf.random.set_seed(100)
```

2 Defining functions

```
[3]: #Custom RMSE metric
     def rmse(y_true, y_pred):
         return backend.sqrt(backend.mean(backend.square(y_pred - y_true)))
```

```
[4]: #Returning the Mean Absolute Weight and the Mean Squared Weight from Network
     def give_maw_msw(keras_model):
         output_layer = keras_model.get_layer(index = 1)
         hidden_layer = keras_model.get_layer(index = 0)
         a1 = output_layer.weights[0].numpy()
         a2 = hidden_layer.weights[0].numpy()

         #For MAW:
         maw = statistics.mean(list(np.absolute(a1).ravel()) + list(np.absolute(a2).
      ↪ravel()))

         #For MSW:
         msw = statistics.mean(list(np.square(a1).ravel()) + list(np.square(a2).
      ↪ravel()))

         return maw, msw
```

```
[5]: #Creating the function for a Neural Network
     def make_NN(X_tr, Y_tr, X_ts, Y_ts, neurons,
                 regularizer, input_no, batch, epochs_no, fold_no):


         #To choose a regularization, do:
         #'L2' for Norm2
         #'L1' for Norm1
         #'Mixed' for ElasticNet-Like
         #Anything else for vanilla

         #Create the Model
         model_f = Sequential()
         if regularizer == 'L2':
             print("Regularizer chosen is L2")
             model_f.add(Dense(neurons, input_dim= input_no,␣
      ↪kernel_initializer='normal',
                                activation='relu', kernel_regularizer = L2(0.001)))
         elif regularizer == 'L1':
             print("Regularizer chosen is L1")
             model_f.add(Dense(neurons, input_dim= input_no,␣
      ↪kernel_initializer='normal',
                                activation='relu', kernel_regularizer = L1(0.001)))
         elif regularizer == 'Mixed':
```

```python
        print("Regularizer chosen is L1L2")
        model_f.add(Dense(neurons, input_dim= input_no,
kernel_initializer='normal',
                          activation='relu', kernel_regularizer = L1L2(l1 = 0.
001, l2 = 0.001)))
    else:
        print("No Regularizer chosen")
        model_f.add(Dense(neurons, input_dim= input_no,
kernel_initializer='normal',
                          activation='relu'))
    model_f.add(Dense(1, kernel_initializer='normal'))
    model_f.compile(loss='mean_squared_error', optimizer='adam',
                    metrics = ['mean_absolute_error',
                               'mean_squared_error', rmse,
                               'mean_absolute_percentage_error'])
    # Generate a print

print('----------------------------------------------------------------------')
    print('Training for fold {} ...'.format(fold_no))

 # Fit data to model
    history = model_f.fit(X_tr, Y_tr, batch_size= batch,
                          epochs= epochs_no)

    #Evaluating the model
    results = model_f.evaluate(X_ts, Y_ts, batch_size = batch)

    #Predictions
    prediction = model_f.predict(X_ts)
    np.set_printoptions(formatter={'float_kind':'{:f}'.format})

    #Give MAW and MSW
    maw, msw = give_maw_msw(model_f)


    #Returned Variables

    fold_iter = fold_no
    fold_loss = results[0]
    fold_MSE = results[2]
    fold_MAE = results[1]
    fold_RMSE = results[3]
    fold_pred = np.around(prediction,3)
    fold_history = history
    fold_model = model_f
    fold_MAPE = results[4]
    fold_R2 = r2_score(Y_ts, np.around(prediction,3))
```

```
        fold_MAW = maw
        fold_MSW = msw

        dummy_dir = {'iter' : fold_iter, 'Loss' : fold_loss, 'MSE' : fold_MSE,
                    'MAE' : fold_MAE, 'RMSE' : fold_RMSE, 'MAPE' : fold_MAPE, 'R2' :␣
    ↪fold_R2,
                        'MAW' : fold_MAW, 'MSW' : fold_MSW,'pred' : fold_pred,
                        'hist' : fold_history, 'model' : fold_model}

        return dummy_dir
```

[6]:
```
#Function for generating the folds and getting the statistics
#for a set neruons and regularization

def folds_and_model(X_tr, Y_tr, X_ts, Y_ts, neurons,
            regularizer, input_no, batch, epochs_no):

    fold_info = {}
    fold_no = 1
    kfold = KFold(n_splits= 10, shuffle=True)
    for train, test in kfold.split(X_tr, Y_tr):
        dummy_dir = make_NN(X_tr[train], Y_tr[train], X_ts, Y_ts, neurons,
            regularizer, input_no, batch, epochs_no, fold_no)
        fold_info[fold_no] = dummy_dir
        fold_no += 1

    return fold_info
```

[7]:
```
#Function for creating a graph with the metrics by fold
def graph_metric_by_fold(compendium):
    met_matrix = [['MSE','Loss'],['RMSE', 'MAE'], ['MAPE', 'R2'], ['MAW', 'MSW']]
    fig1, axes1 = plt.subplots(4, 2, figsize = (20, 20))
    col_dict = {'MSE' : 'darkmagenta', 'RMSE' : 'darkturquoise',
                'Loss' : 'yellowgreen', 'MAE' : 'indianred',
                'MAPE' : 'peachpuff', 'R2' : 'cornflowerblue',
                'MAW' : 'hotpink', 'MSW' : 'orangered'}

    for row in [0,1,2,3]:

        for column in [0,1]:
            measure = []
            for i in range(10):
                measure.append(compendium[i+1][met_matrix[row][column]])
            axes1[row, column].bar(range(1,11), measure,
                                    color = col_dict[met_matrix[row][column]])
            axes1[row, column].axhline(statistics.mean(measure),
                        color='black', linewidth=1, linestyle = 'dotted')
```

```python
                axes1[row, column].set_title(met_matrix[row][column])
                axes1[row, column].set_ylabel(met_matrix[row][column])
                axes1[row, column].set_xlabel('Fold')
                axes1[row, column].set_xticks(range(1,11))

    return fig1
```

```python
[8]: #Function for graphing convergence
     def graph_epoch_convergence(compendium):

         met_matrix = [['MSE','Loss'],['RMSE', 'MAE']]
         fig1, axes1 = plt.subplots(2, 2, figsize = (10, 10))
         col_dict = {'MSE' : 'darkmagenta', 'RMSE' : 'darkturquoise',
                     'Loss' : 'yellowgreen', 'MAE' : 'indianred'}
         hist_dict = {'MSE' : 'mean_squared_error', 'RMSE' : 'rmse',
                      'Loss' : 'loss', 'MAE' : 'mean_absolute_error'}

         for row in [0,1]:

             for column in [0,1]:

                     history = []
                     for i in range(10):
                         history.append(compendium[i+1]['hist'].
     ↪history[hist_dict[met_matrix[row][column]]])

                     np_hist = np.array(history)
                     avg_per_epoch = np.average(np_hist, axis = 0)

                     axes1[row, column].plot(avg_per_epoch, color =␣
     ↪col_dict[met_matrix[row][column]])
                     axes1[row, column].set_title('{} Convergence by Epoch - Avg.␣
     ↪Across CV'.format(met_matrix[row][column]))
                     axes1[row, column].set_ylabel(met_matrix[row][column])
                     axes1[row, column].set_xlabel('Epoch')
                     axes1[row, column].grid(True, alpha = 0.2, color = 'gray')
                     axes1[row, column].legend([met_matrix[row][column]], loc='upper␣
     ↪left')
         return fig1
```

```python
[9]: #Function for creating all averages

     def give_me_avg(compendium, measure):
```

```
    #possible values for metric = 'MSE', 'Loss', 'RMSE', 'MAE', 'R2', 'MAW',␣
↪'MSW'
    metric_list = []

    for i in range(len(compendium)):
        metric_list.append(compendium[i+1][measure])
    return statistics.mean(metric_list)
```

3 Data Processing

```
[10]: #Importing data
      semiconductors = pd.read_csv("train.csv")
      #Checking and printing column names
      print(len(semiconductors.columns))
      print(semiconductors.columns)
      print(semiconductors.head(7))
```

```
82
Index(['number_of_elements', 'mean_atomic_mass', 'wtd_mean_atomic_mass',
       'gmean_atomic_mass', 'wtd_gmean_atomic_mass', 'entropy_atomic_mass',
       'wtd_entropy_atomic_mass', 'range_atomic_mass', 'wtd_range_atomic_mass',
       'std_atomic_mass', 'wtd_std_atomic_mass', 'mean_fie', 'wtd_mean_fie',
       'gmean_fie', 'wtd_gmean_fie', 'entropy_fie', 'wtd_entropy_fie',
       'range_fie', 'wtd_range_fie', 'std_fie', 'wtd_std_fie',
       'mean_atomic_radius', 'wtd_mean_atomic_radius', 'gmean_atomic_radius',
       'wtd_gmean_atomic_radius', 'entropy_atomic_radius',
       'wtd_entropy_atomic_radius', 'range_atomic_radius',
       'wtd_range_atomic_radius', 'std_atomic_radius', 'wtd_std_atomic_radius',
       'mean_Density', 'wtd_mean_Density', 'gmean_Density',
       'wtd_gmean_Density', 'entropy_Density', 'wtd_entropy_Density',
       'range_Density', 'wtd_range_Density', 'std_Density', 'wtd_std_Density',
       'mean_ElectronAffinity', 'wtd_mean_ElectronAffinity',
       'gmean_ElectronAffinity', 'wtd_gmean_ElectronAffinity',
       'entropy_ElectronAffinity', 'wtd_entropy_ElectronAffinity',
       'range_ElectronAffinity', 'wtd_range_ElectronAffinity',
       'std_ElectronAffinity', 'wtd_std_ElectronAffinity', 'mean_FusionHeat',
       'wtd_mean_FusionHeat', 'gmean_FusionHeat', 'wtd_gmean_FusionHeat',
       'entropy_FusionHeat', 'wtd_entropy_FusionHeat', 'range_FusionHeat',
       'wtd_range_FusionHeat', 'std_FusionHeat', 'wtd_std_FusionHeat',
       'mean_ThermalConductivity', 'wtd_mean_ThermalConductivity',
       'gmean_ThermalConductivity', 'wtd_gmean_ThermalConductivity',
       'entropy_ThermalConductivity', 'wtd_entropy_ThermalConductivity',
       'range_ThermalConductivity', 'wtd_range_ThermalConductivity',
       'std_ThermalConductivity', 'wtd_std_ThermalConductivity',
       'mean_Valence', 'wtd_mean_Valence', 'gmean_Valence',
       'wtd_gmean_Valence', 'entropy_Valence', 'wtd_entropy_Valence',
```

```
       'range_Valence', 'wtd_range_Valence', 'std_Valence', 'wtd_std_Valence',
       'critical_temp'],
      dtype='object')
   number_of_elements  mean_atomic_mass  wtd_mean_atomic_mass  \
0                   4         88.944468             57.862692
1                   5         92.729214             58.518416
2                   4         88.944468             57.885242
3                   4         88.944468             57.873967
4                   4         88.944468             57.840143
5                   4         88.944468             57.795044
6                   4         88.944468             57.682296


   gmean_atomic_mass  wtd_gmean_atomic_mass  entropy_atomic_mass  \
0          66.361592              36.116612             1.181795
1          73.132787              36.396602             1.449309
2          66.361592              36.122509             1.181795
3          66.361592              36.119560             1.181795
4          66.361592              36.110716             1.181795
5          66.361592              36.098926             1.181795
6          66.361592              36.069470             1.181795


   wtd_entropy_atomic_mass  range_atomic_mass  wtd_range_atomic_mass  \
0                 1.062396          122.90607              31.794921
1                 1.057755          122.90607              36.161939
2                 0.975980          122.90607              35.741099
3                 1.022291          122.90607              33.768010
4                 1.129224          122.90607              27.848743
5                 1.225203          122.90607              20.687458
6                 1.316857          122.90607              10.765639


   std_atomic_mass  ...  wtd_mean_Valence  gmean_Valence  wtd_gmean_Valence  \
0        51.968828  ...          2.257143       2.213364           2.219783
1        47.094633  ...          2.257143       1.888175           2.210679
2        51.968828  ...          2.271429       2.213364           2.232679
3        51.968828  ...          2.264286       2.213364           2.226222
4        51.968828  ...          2.242857       2.213364           2.206963
5        51.968828  ...          2.214286       2.213364           2.181543
6        51.968828  ...          2.142857       2.213364           2.119268


   entropy_Valence  wtd_entropy_Valence  range_Valence  wtd_range_Valence  \
0         1.368922             1.066221              1           1.085714
1         1.557113             1.047221              2           1.128571
2         1.368922             1.029175              1           1.114286
3         1.368922             1.048834              1           1.100000
4         1.368922             1.096052              1           1.057143
5         1.368922             1.141474              1           1.000000
6         1.368922             1.194453              1           0.857143
```

```
     std_Valence  wtd_std_Valence  critical_temp
0      0.433013         0.437059           29.0
1      0.632456         0.468606           26.0
2      0.433013         0.444697           19.0
3      0.433013         0.440952           22.0
4      0.433013         0.428809           23.0
5      0.433013         0.410326           23.0
6      0.433013         0.349927           11.0

[7 rows x 82 columns]
```

```
[11]:  #88 columns, including critical_temp and material

       #Scaler
       scaler = StandardScaler()

       #Fitting scaler
       scaler.fit(semiconductors)
       sc_semi = scaler.fit_transform(semiconductors)
       sc_semi = pd.DataFrame(sc_semi, columns=semiconductors.columns)
       print(sc_semi.head(6))
```

```
   number_of_elements  mean_atomic_mass  wtd_mean_atomic_mass  \
0           -0.080058          0.046733             -0.451651
1            0.614744          0.174269             -0.432071
2           -0.080058          0.046733             -0.450978
3           -0.080058          0.046733             -0.451314
4           -0.080058          0.046733             -0.452324
5           -0.080058          0.046733             -0.453671

   gmean_atomic_mass  wtd_gmean_atomic_mass  entropy_atomic_mass  \
0          -0.158850              -0.611819             0.044358
1           0.059368              -0.604180             0.777430
2          -0.158850              -0.611658             0.044358
3          -0.158850              -0.611739             0.044358
4          -0.158850              -0.611980             0.044358
5          -0.158850              -0.612302             0.044358

   wtd_entropy_atomic_mass  range_atomic_mass  wtd_range_atomic_mass  \
0                -0.003707           0.133725              -0.053039
1                -0.015267           0.133725               0.108900
2                -0.218984           0.133725               0.093294
3                -0.103615           0.133725               0.020128
4                 0.162775           0.133725              -0.199372
5                 0.401878           0.133725              -0.464928

   std_atomic_mass  ...  wtd_mean_Valence  gmean_Valence  wtd_gmean_Valence  \
0         0.378186  ...         -0.752156      -0.805912          -0.711705
```

```
1        0.134901   ...        -0.752156      -1.116731       -0.719454
2        0.378186   ...        -0.740164      -0.805912       -0.700728
3        0.378186   ...        -0.746160      -0.805912       -0.706224
4        0.378186   ...        -0.764149      -0.805912       -0.722618
5        0.378186   ...        -0.788134      -0.805912       -0.744255


   entropy_Valence  wtd_entropy_Valence  range_Valence  wtd_range_Valence  \
0         0.186292             0.035183      -0.837959          -0.406166
1         0.664971            -0.014779      -0.033011          -0.362352
2         0.186292            -0.062235      -0.837959          -0.376957
3         0.186292            -0.010538      -0.837959          -0.391562
4         0.186292             0.113627      -0.837959          -0.435376
5         0.186292             0.233070      -0.837959          -0.493795


   std_Valence  wtd_std_Valence  critical_temp
0    -0.838372        -0.520070      -0.158267
1    -0.426866        -0.450821      -0.245849
2    -0.838372        -0.503304      -0.450208
3    -0.838372        -0.511524      -0.362626
4    -0.838372        -0.538178      -0.333432
5    -0.838372        -0.578750      -0.333432

[6 rows x 82 columns]
```

```python
#Creating X and Y
X = sc_semi[['number_of_elements', 'mean_atomic_mass', 'wtd_mean_atomic_mass',
        'gmean_atomic_mass', 'wtd_gmean_atomic_mass', 'entropy_atomic_mass',
        'wtd_entropy_atomic_mass', 'range_atomic_mass', 'wtd_range_atomic_mass',
        'std_atomic_mass', 'wtd_std_atomic_mass', 'mean_fie', 'wtd_mean_fie',
        'gmean_fie', 'wtd_gmean_fie', 'entropy_fie', 'wtd_entropy_fie',
        'range_fie', 'wtd_range_fie', 'std_fie', 'wtd_std_fie',
        'mean_atomic_radius', 'wtd_mean_atomic_radius', 'gmean_atomic_radius',
        'wtd_gmean_atomic_radius', 'entropy_atomic_radius',
        'wtd_entropy_atomic_radius', 'range_atomic_radius',
        'wtd_range_atomic_radius', 'std_atomic_radius', 'wtd_std_atomic_radius',
        'mean_Density', 'wtd_mean_Density', 'gmean_Density',
        'wtd_gmean_Density', 'entropy_Density', 'wtd_entropy_Density',
        'range_Density', 'wtd_range_Density', 'std_Density', 'wtd_std_Density',
        'mean_ElectronAffinity', 'wtd_mean_ElectronAffinity',
        'gmean_ElectronAffinity', 'wtd_gmean_ElectronAffinity',
        'entropy_ElectronAffinity', 'wtd_entropy_ElectronAffinity',
        'range_ElectronAffinity', 'wtd_range_ElectronAffinity',
        'std_ElectronAffinity', 'wtd_std_ElectronAffinity', 'mean_FusionHeat',
        'wtd_mean_FusionHeat', 'gmean_FusionHeat', 'wtd_gmean_FusionHeat',
        'entropy_FusionHeat', 'wtd_entropy_FusionHeat', 'range_FusionHeat',
        'wtd_range_FusionHeat', 'std_FusionHeat', 'wtd_std_FusionHeat',
        'mean_ThermalConductivity', 'wtd_mean_ThermalConductivity',
```

```
        'gmean_ThermalConductivity', 'wtd_gmean_ThermalConductivity',
        'entropy_ThermalConductivity', 'wtd_entropy_ThermalConductivity',
        'range_ThermalConductivity', 'wtd_range_ThermalConductivity',
        'std_ThermalConductivity', 'wtd_std_ThermalConductivity',
        'mean_Valence', 'wtd_mean_Valence', 'gmean_Valence',
        'wtd_gmean_Valence', 'entropy_Valence', 'wtd_entropy_Valence',
        'range_Valence', 'wtd_range_Valence', 'std_Valence', 'wtd_std_Valence']].
 ↪values
Y = sc_semi['critical_temp'].values


x_tr, x_ts, y_tr, y_ts = train_test_split(X, Y, test_size = 0.3, random_state =␣
 ↪1997)
```

4 Vanilla

[13]:
```
#Creating the MLP
compendium_v = folds_and_model(x_tr, y_tr, x_ts, y_ts,
                               neurons = 41, regularizer = 'Vanilla', input_no = 81,
                               batch = 64, epochs_no = 100)
```

```
No Regularizer chosen
--------------------------------------------------------------------------
Training for fold 1 ...
Epoch 1/100
210/210 [==============================] - 5s 2ms/step - loss: 0.3390 -
mean_absolute_error: 0.4395 - mean_squared_error: 0.3390 - rmse: 0.5725 -
mean_absolute_percentage_error: 209.2875
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2327 -
mean_absolute_error: 0.3438 - mean_squared_error: 0.2327 - rmse: 0.4786 -
mean_absolute_percentage_error: 191.5048
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2171 -
mean_absolute_error: 0.3275 - mean_squared_error: 0.2171 - rmse: 0.4614 -
mean_absolute_percentage_error: 189.5973
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2070 -
mean_absolute_error: 0.3190 - mean_squared_error: 0.2070 - rmse: 0.4508 -
mean_absolute_percentage_error: 189.8515
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2027 -
mean_absolute_error: 0.3144 - mean_squared_error: 0.2027 - rmse: 0.4461 -
mean_absolute_percentage_error: 181.4365
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1936 -
mean_absolute_error: 0.3055 - mean_squared_error: 0.1936 - rmse: 0.4355 -
mean_absolute_percentage_error: 181.8938
```

```
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1896 -
mean_absolute_error: 0.3025 - mean_squared_error: 0.1896 - rmse: 0.4318 -
mean_absolute_percentage_error: 176.5779
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1873 -
mean_absolute_error: 0.3004 - mean_squared_error: 0.1873 - rmse: 0.4280 -
mean_absolute_percentage_error: 173.4322
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1848 -
mean_absolute_error: 0.2984 - mean_squared_error: 0.1848 - rmse: 0.4246 -
mean_absolute_percentage_error: 171.3271
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1810 -
mean_absolute_error: 0.2942 - mean_squared_error: 0.1810 - rmse: 0.4215 -
mean_absolute_percentage_error: 171.6766
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1794 -
mean_absolute_error: 0.2927 - mean_squared_error: 0.1794 - rmse: 0.4193 -
mean_absolute_percentage_error: 173.8819
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1758 -
mean_absolute_error: 0.2900 - mean_squared_error: 0.1758 - rmse: 0.4150 -
mean_absolute_percentage_error: 167.4373
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1727 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1727 - rmse: 0.4113 -
mean_absolute_percentage_error: 165.8433
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1731 -
mean_absolute_error: 0.2869 - mean_squared_error: 0.1731 - rmse: 0.4108 -
mean_absolute_percentage_error: 168.5386
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1708 -
mean_absolute_error: 0.2847 - mean_squared_error: 0.1708 - rmse: 0.4096 -
mean_absolute_percentage_error: 162.9146
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1679 -
mean_absolute_error: 0.2820 - mean_squared_error: 0.1679 - rmse: 0.4065 -
mean_absolute_percentage_error: 166.0466
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1669 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1669 - rmse: 0.4041 -
mean_absolute_percentage_error: 160.6727
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1674 -
mean_absolute_error: 0.2820 - mean_squared_error: 0.1674 - rmse: 0.4054 -
mean_absolute_percentage_error: 163.7215
```

```
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1658 -
mean_absolute_error: 0.2795 - mean_squared_error: 0.1658 - rmse: 0.4029 -
mean_absolute_percentage_error: 162.5777
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1635 -
mean_absolute_error: 0.2780 - mean_squared_error: 0.1635 - rmse: 0.4008 -
mean_absolute_percentage_error: 158.6704
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1625 -
mean_absolute_error: 0.2764 - mean_squared_error: 0.1625 - rmse: 0.3991 -
mean_absolute_percentage_error: 164.5435
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1610 -
mean_absolute_error: 0.2749 - mean_squared_error: 0.1610 - rmse: 0.3974 -
mean_absolute_percentage_error: 159.6839
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1616 -
mean_absolute_error: 0.2770 - mean_squared_error: 0.1616 - rmse: 0.3987 -
mean_absolute_percentage_error: 160.7103
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1606 -
mean_absolute_error: 0.2743 - mean_squared_error: 0.1606 - rmse: 0.3964 -
mean_absolute_percentage_error: 156.1788
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1590 -
mean_absolute_error: 0.2739 - mean_squared_error: 0.1590 - rmse: 0.3943 -
mean_absolute_percentage_error: 159.3312
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1568 -
mean_absolute_error: 0.2704 - mean_squared_error: 0.1568 - rmse: 0.3927 -
mean_absolute_percentage_error: 154.1954
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1581 -
mean_absolute_error: 0.2717 - mean_squared_error: 0.1581 - rmse: 0.3934 -
mean_absolute_percentage_error: 158.8385
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1590 -
mean_absolute_error: 0.2738 - mean_squared_error: 0.1590 - rmse: 0.3943 -
mean_absolute_percentage_error: 155.5217
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1566 -
mean_absolute_error: 0.2717 - mean_squared_error: 0.1566 - rmse: 0.3917 -
mean_absolute_percentage_error: 153.6495
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1558 -
mean_absolute_error: 0.2694 - mean_squared_error: 0.1558 - rmse: 0.3906 -
mean_absolute_percentage_error: 151.7061
```

```
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1561 -
mean_absolute_error: 0.2707 - mean_squared_error: 0.1561 - rmse: 0.3899 -
mean_absolute_percentage_error: 150.8494
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1544 -
mean_absolute_error: 0.2688 - mean_squared_error: 0.1544 - rmse: 0.3895 -
mean_absolute_percentage_error: 151.1141
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1544 -
mean_absolute_error: 0.2683 - mean_squared_error: 0.1544 - rmse: 0.3882 -
mean_absolute_percentage_error: 153.8331
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1548 -
mean_absolute_error: 0.2692 - mean_squared_error: 0.1548 - rmse: 0.3889 -
mean_absolute_percentage_error: 151.8764
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1519 -
mean_absolute_error: 0.2655 - mean_squared_error: 0.1519 - rmse: 0.3865 -
mean_absolute_percentage_error: 153.2577
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1533 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1533 - rmse: 0.3876 -
mean_absolute_percentage_error: 153.7965
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1519 -
mean_absolute_error: 0.2662 - mean_squared_error: 0.1519 - rmse: 0.3860 -
mean_absolute_percentage_error: 152.2522
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1519 -
mean_absolute_error: 0.2655 - mean_squared_error: 0.1519 - rmse: 0.3854 -
mean_absolute_percentage_error: 153.5623
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1506 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1506 - rmse: 0.3840 -
mean_absolute_percentage_error: 152.5597
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1508 -
mean_absolute_error: 0.2658 - mean_squared_error: 0.1508 - rmse: 0.3849 -
mean_absolute_percentage_error: 153.7595
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1506 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1506 - rmse: 0.3840 -
mean_absolute_percentage_error: 147.9917
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1509 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1509 - rmse: 0.3846 -
mean_absolute_percentage_error: 147.5612
```

```
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1501 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1501 - rmse: 0.3835 -
mean_absolute_percentage_error: 145.7536
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1492 -
mean_absolute_error: 0.2637 - mean_squared_error: 0.1492 - rmse: 0.3825 -
mean_absolute_percentage_error: 149.4735
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1498 -
mean_absolute_error: 0.2643 - mean_squared_error: 0.1498 - rmse: 0.3832 -
mean_absolute_percentage_error: 146.1812
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1489 -
mean_absolute_error: 0.2631 - mean_squared_error: 0.1489 - rmse: 0.3820 -
mean_absolute_percentage_error: 150.1696
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1473 -
mean_absolute_error: 0.2622 - mean_squared_error: 0.1473 - rmse: 0.3793 -
mean_absolute_percentage_error: 148.8253
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1492 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1492 - rmse: 0.3822 -
mean_absolute_percentage_error: 150.0560
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1491 -
mean_absolute_error: 0.2637 - mean_squared_error: 0.1491 - rmse: 0.3821 -
mean_absolute_percentage_error: 150.1315
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1491 -
mean_absolute_error: 0.2635 - mean_squared_error: 0.1491 - rmse: 0.3829 -
mean_absolute_percentage_error: 148.5632
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1469 -
mean_absolute_error: 0.2618 - mean_squared_error: 0.1469 - rmse: 0.3792 -
mean_absolute_percentage_error: 148.6941
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1487 -
mean_absolute_error: 0.2620 - mean_squared_error: 0.1487 - rmse: 0.3810 -
mean_absolute_percentage_error: 144.8762
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1470 -
mean_absolute_error: 0.2617 - mean_squared_error: 0.1470 - rmse: 0.3801 -
mean_absolute_percentage_error: 147.5768
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1477 -
mean_absolute_error: 0.2616 - mean_squared_error: 0.1477 - rmse: 0.3805 -
mean_absolute_percentage_error: 147.5953
```

```
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1454 -
mean_absolute_error: 0.2590 - mean_squared_error: 0.1454 - rmse: 0.3771 -
mean_absolute_percentage_error: 146.4739
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1478 -
mean_absolute_error: 0.2629 - mean_squared_error: 0.1478 - rmse: 0.3801 -
mean_absolute_percentage_error: 152.6270
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1470 -
mean_absolute_error: 0.2617 - mean_squared_error: 0.1470 - rmse: 0.3789 -
mean_absolute_percentage_error: 150.6231
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1428 -
mean_absolute_error: 0.2568 - mean_squared_error: 0.1428 - rmse: 0.3750 -
mean_absolute_percentage_error: 142.0817
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1463 -
mean_absolute_error: 0.2609 - mean_squared_error: 0.1463 - rmse: 0.3774 -
mean_absolute_percentage_error: 142.6864
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1447 -
mean_absolute_error: 0.2591 - mean_squared_error: 0.1447 - rmse: 0.3767 -
mean_absolute_percentage_error: 149.9059
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1435 -
mean_absolute_error: 0.2578 - mean_squared_error: 0.1435 - rmse: 0.3738 -
mean_absolute_percentage_error: 145.3957
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1428 -
mean_absolute_error: 0.2576 - mean_squared_error: 0.1428 - rmse: 0.3739 -
mean_absolute_percentage_error: 145.1067
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1433 -
mean_absolute_error: 0.2587 - mean_squared_error: 0.1433 - rmse: 0.3738 -
mean_absolute_percentage_error: 144.5072
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1436 -
mean_absolute_error: 0.2588 - mean_squared_error: 0.1436 - rmse: 0.3746 -
mean_absolute_percentage_error: 148.2704
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1444 -
mean_absolute_error: 0.2587 - mean_squared_error: 0.1444 - rmse: 0.3756 -
mean_absolute_percentage_error: 149.3684
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1433 -
mean_absolute_error: 0.2580 - mean_squared_error: 0.1433 - rmse: 0.3751 -
mean_absolute_percentage_error: 143.6535
```

```
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1437 -
mean_absolute_error: 0.2590 - mean_squared_error: 0.1437 - rmse: 0.3753 -
mean_absolute_percentage_error: 146.0534
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1426 -
mean_absolute_error: 0.2569 - mean_squared_error: 0.1426 - rmse: 0.3731 -
mean_absolute_percentage_error: 143.4973
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1433 -
mean_absolute_error: 0.2580 - mean_squared_error: 0.1433 - rmse: 0.3746 -
mean_absolute_percentage_error: 148.2148
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1407 -
mean_absolute_error: 0.2546 - mean_squared_error: 0.1407 - rmse: 0.3707 -
mean_absolute_percentage_error: 140.8663
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1431 -
mean_absolute_error: 0.2584 - mean_squared_error: 0.1431 - rmse: 0.3747 -
mean_absolute_percentage_error: 143.8456
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1401 -
mean_absolute_error: 0.2555 - mean_squared_error: 0.1401 - rmse: 0.3704 -
mean_absolute_percentage_error: 141.4767
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1424 -
mean_absolute_error: 0.2570 - mean_squared_error: 0.1424 - rmse: 0.3732 -
mean_absolute_percentage_error: 138.4526
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1435 -
mean_absolute_error: 0.2578 - mean_squared_error: 0.1435 - rmse: 0.3738 -
mean_absolute_percentage_error: 147.2546
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1392 -
mean_absolute_error: 0.2536 - mean_squared_error: 0.1392 - rmse: 0.3687 -
mean_absolute_percentage_error: 142.6763
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1417 -
mean_absolute_error: 0.2557 - mean_squared_error: 0.1417 - rmse: 0.3723 -
mean_absolute_percentage_error: 145.5723
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1427 -
mean_absolute_error: 0.2566 - mean_squared_error: 0.1427 - rmse: 0.3728 -
mean_absolute_percentage_error: 147.5708
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1429 -
mean_absolute_error: 0.2583 - mean_squared_error: 0.1429 - rmse: 0.3736 -
mean_absolute_percentage_error: 146.5363
```

```
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1398 -
mean_absolute_error: 0.2541 - mean_squared_error: 0.1398 - rmse: 0.3694 -
mean_absolute_percentage_error: 141.8514
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1393 -
mean_absolute_error: 0.2535 - mean_squared_error: 0.1393 - rmse: 0.3692 -
mean_absolute_percentage_error: 146.9987
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1386 -
mean_absolute_error: 0.2537 - mean_squared_error: 0.1386 - rmse: 0.3679 -
mean_absolute_percentage_error: 148.8651
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1391 -
mean_absolute_error: 0.2539 - mean_squared_error: 0.1391 - rmse: 0.3694 -
mean_absolute_percentage_error: 141.6691
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1395 -
mean_absolute_error: 0.2534 - mean_squared_error: 0.1395 - rmse: 0.3694 -
mean_absolute_percentage_error: 142.0257
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1398 -
mean_absolute_error: 0.2542 - mean_squared_error: 0.1398 - rmse: 0.3699 -
mean_absolute_percentage_error: 140.2300
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1393 -
mean_absolute_error: 0.2539 - mean_squared_error: 0.1393 - rmse: 0.3687 -
mean_absolute_percentage_error: 145.8416
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1391 -
mean_absolute_error: 0.2533 - mean_squared_error: 0.1391 - rmse: 0.3686 -
mean_absolute_percentage_error: 145.2262
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1380 -
mean_absolute_error: 0.2525 - mean_squared_error: 0.1380 - rmse: 0.3675 -
mean_absolute_percentage_error: 144.9008
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1389 -
mean_absolute_error: 0.2544 - mean_squared_error: 0.1389 - rmse: 0.3680 -
mean_absolute_percentage_error: 144.9425
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1374 -
mean_absolute_error: 0.2512 - mean_squared_error: 0.1374 - rmse: 0.3667 -
mean_absolute_percentage_error: 143.2853
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1364 -
mean_absolute_error: 0.2518 - mean_squared_error: 0.1364 - rmse: 0.3646 -
mean_absolute_percentage_error: 140.8167
```

```
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1367 -
mean_absolute_error: 0.2518 - mean_squared_error: 0.1367 - rmse: 0.3662 -
mean_absolute_percentage_error: 146.0450
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1373 -
mean_absolute_error: 0.2517 - mean_squared_error: 0.1373 - rmse: 0.3659 -
mean_absolute_percentage_error: 139.5622
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1398 -
mean_absolute_error: 0.2547 - mean_squared_error: 0.1398 - rmse: 0.3697 -
mean_absolute_percentage_error: 143.1523
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1374 -
mean_absolute_error: 0.2527 - mean_squared_error: 0.1374 - rmse: 0.3668 -
mean_absolute_percentage_error: 141.9122
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1366 -
mean_absolute_error: 0.2510 - mean_squared_error: 0.1366 - rmse: 0.3656 -
mean_absolute_percentage_error: 139.2547
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1368 -
mean_absolute_error: 0.2514 - mean_squared_error: 0.1368 - rmse: 0.3658 -
mean_absolute_percentage_error: 139.4185
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1373 -
mean_absolute_error: 0.2526 - mean_squared_error: 0.1373 - rmse: 0.3667 -
mean_absolute_percentage_error: 143.6290
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1351 -
mean_absolute_error: 0.2493 - mean_squared_error: 0.1351 - rmse: 0.3636 -
mean_absolute_percentage_error: 141.4072
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1359 -
mean_absolute_error: 0.2510 - mean_squared_error: 0.1359 - rmse: 0.3645 -
mean_absolute_percentage_error: 141.3272
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1369 -
mean_absolute_error: 0.2519 - mean_squared_error: 0.1369 - rmse: 0.3661 -
mean_absolute_percentage_error: 144.8171
100/100 [==============================] - 4s 1ms/step - loss: 0.1417 -
mean_absolute_error: 0.2541 - mean_squared_error: 0.1417 - rmse: 0.3713 -
mean_absolute_percentage_error: 148.2351
200/200 [==============================] - 4s 1ms/step
No Regularizer chosen
--------------------------------------------------------------------------------
Training for fold 2 ...
Epoch 1/100
```

```
210/210 [==============================] - 5s 2ms/step - loss: 0.3426 -
mean_absolute_error: 0.4363 - mean_squared_error: 0.3426 - rmse: 0.5759 -
mean_absolute_percentage_error: 200.3300
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2365 -
mean_absolute_error: 0.3449 - mean_squared_error: 0.2365 - rmse: 0.4818 -
mean_absolute_percentage_error: 195.4927
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2195 -
mean_absolute_error: 0.3299 - mean_squared_error: 0.2195 - rmse: 0.4640 -
mean_absolute_percentage_error: 195.7311
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2096 -
mean_absolute_error: 0.3217 - mean_squared_error: 0.2096 - rmse: 0.4537 -
mean_absolute_percentage_error: 191.7821
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2030 -
mean_absolute_error: 0.3145 - mean_squared_error: 0.2030 - rmse: 0.4461 -
mean_absolute_percentage_error: 189.2436
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1981 -
mean_absolute_error: 0.3098 - mean_squared_error: 0.1981 - rmse: 0.4419 -
mean_absolute_percentage_error: 189.5703
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1947 -
mean_absolute_error: 0.3072 - mean_squared_error: 0.1947 - rmse: 0.4362 -
mean_absolute_percentage_error: 183.8260
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1913 -
mean_absolute_error: 0.3029 - mean_squared_error: 0.1913 - rmse: 0.4332 -
mean_absolute_percentage_error: 181.5647
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1892 -
mean_absolute_error: 0.3011 - mean_squared_error: 0.1892 - rmse: 0.4308 -
mean_absolute_percentage_error: 180.5222
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1848 -
mean_absolute_error: 0.2970 - mean_squared_error: 0.1848 - rmse: 0.4261 -
mean_absolute_percentage_error: 179.9611
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1825 -
mean_absolute_error: 0.2944 - mean_squared_error: 0.1825 - rmse: 0.4230 -
mean_absolute_percentage_error: 174.4958
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1790 -
mean_absolute_error: 0.2915 - mean_squared_error: 0.1790 - rmse: 0.4184 -
mean_absolute_percentage_error: 170.5059
Epoch 13/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1779 -
mean_absolute_error: 0.2922 - mean_squared_error: 0.1779 - rmse: 0.4177 -
mean_absolute_percentage_error: 174.6987
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1748 -
mean_absolute_error: 0.2890 - mean_squared_error: 0.1748 - rmse: 0.4142 -
mean_absolute_percentage_error: 172.3555
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1740 -
mean_absolute_error: 0.2884 - mean_squared_error: 0.1740 - rmse: 0.4126 -
mean_absolute_percentage_error: 170.4260
Epoch 16/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1722 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1722 - rmse: 0.4115 -
mean_absolute_percentage_error: 167.9383
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1702 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1702 - rmse: 0.4084 -
mean_absolute_percentage_error: 167.2646
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1697 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1697 - rmse: 0.4083 -
mean_absolute_percentage_error: 164.9943
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1682 -
mean_absolute_error: 0.2821 - mean_squared_error: 0.1682 - rmse: 0.4060 -
mean_absolute_percentage_error: 168.0860
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1668 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1668 - rmse: 0.4040 -
mean_absolute_percentage_error: 163.0895
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1648 -
mean_absolute_error: 0.2787 - mean_squared_error: 0.1648 - rmse: 0.4014 -
mean_absolute_percentage_error: 162.7907
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1668 -
mean_absolute_error: 0.2811 - mean_squared_error: 0.1668 - rmse: 0.4047 -
mean_absolute_percentage_error: 164.7426
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1639 -
mean_absolute_error: 0.2778 - mean_squared_error: 0.1639 - rmse: 0.4002 -
mean_absolute_percentage_error: 165.9010
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1611 -
mean_absolute_error: 0.2744 - mean_squared_error: 0.1611 - rmse: 0.3982 -
mean_absolute_percentage_error: 162.5876
Epoch 25/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1633 -
mean_absolute_error: 0.2775 - mean_squared_error: 0.1633 - rmse: 0.3994 -
mean_absolute_percentage_error: 165.3760
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1593 -
mean_absolute_error: 0.2727 - mean_squared_error: 0.1593 - rmse: 0.3946 -
mean_absolute_percentage_error: 161.4498
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1596 -
mean_absolute_error: 0.2736 - mean_squared_error: 0.1596 - rmse: 0.3949 -
mean_absolute_percentage_error: 160.5599
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1594 -
mean_absolute_error: 0.2748 - mean_squared_error: 0.1594 - rmse: 0.3943 -
mean_absolute_percentage_error: 157.7858
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1591 -
mean_absolute_error: 0.2740 - mean_squared_error: 0.1591 - rmse: 0.3957 -
mean_absolute_percentage_error: 160.6571
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1595 -
mean_absolute_error: 0.2732 - mean_squared_error: 0.1595 - rmse: 0.3945 -
mean_absolute_percentage_error: 156.3036
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1600 -
mean_absolute_error: 0.2756 - mean_squared_error: 0.1600 - rmse: 0.3950 -
mean_absolute_percentage_error: 165.2794
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1564 -
mean_absolute_error: 0.2701 - mean_squared_error: 0.1564 - rmse: 0.3911 -
mean_absolute_percentage_error: 158.3619
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1552 -
mean_absolute_error: 0.2684 - mean_squared_error: 0.1552 - rmse: 0.3895 -
mean_absolute_percentage_error: 156.1586
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1563 -
mean_absolute_error: 0.2707 - mean_squared_error: 0.1563 - rmse: 0.3910 -
mean_absolute_percentage_error: 153.2061
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1539 -
mean_absolute_error: 0.2670 - mean_squared_error: 0.1539 - rmse: 0.3878 -
mean_absolute_percentage_error: 157.8207
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1542 -
mean_absolute_error: 0.2681 - mean_squared_error: 0.1542 - rmse: 0.3881 -
mean_absolute_percentage_error: 158.4066
Epoch 37/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1552 -
mean_absolute_error: 0.2691 - mean_squared_error: 0.1552 - rmse: 0.3892 -
mean_absolute_percentage_error: 150.5651
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1536 -
mean_absolute_error: 0.2666 - mean_squared_error: 0.1536 - rmse: 0.3879 -
mean_absolute_percentage_error: 159.7708
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1528 -
mean_absolute_error: 0.2660 - mean_squared_error: 0.1528 - rmse: 0.3868 -
mean_absolute_percentage_error: 157.4686
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1530 -
mean_absolute_error: 0.2662 - mean_squared_error: 0.1530 - rmse: 0.3861 -
mean_absolute_percentage_error: 157.0348
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1548 -
mean_absolute_error: 0.2677 - mean_squared_error: 0.1548 - rmse: 0.3887 -
mean_absolute_percentage_error: 155.4735
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1500 -
mean_absolute_error: 0.2634 - mean_squared_error: 0.1500 - rmse: 0.3832 -
mean_absolute_percentage_error: 151.7294
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1501 -
mean_absolute_error: 0.2635 - mean_squared_error: 0.1501 - rmse: 0.3832 -
mean_absolute_percentage_error: 154.3945
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1505 -
mean_absolute_error: 0.2634 - mean_squared_error: 0.1505 - rmse: 0.3843 -
mean_absolute_percentage_error: 150.1268
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1498 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1498 - rmse: 0.3827 -
mean_absolute_percentage_error: 152.9053
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1504 -
mean_absolute_error: 0.2628 - mean_squared_error: 0.1504 - rmse: 0.3838 -
mean_absolute_percentage_error: 151.1208
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1496 -
mean_absolute_error: 0.2638 - mean_squared_error: 0.1496 - rmse: 0.3830 -
mean_absolute_percentage_error: 156.6716
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1486 -
mean_absolute_error: 0.2621 - mean_squared_error: 0.1486 - rmse: 0.3818 -
mean_absolute_percentage_error: 148.5434
Epoch 49/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1473 -
mean_absolute_error: 0.2610 - mean_squared_error: 0.1473 - rmse: 0.3801 -
mean_absolute_percentage_error: 151.5960
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1514 -
mean_absolute_error: 0.2658 - mean_squared_error: 0.1514 - rmse: 0.3846 -
mean_absolute_percentage_error: 153.1622
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1484 -
mean_absolute_error: 0.2617 - mean_squared_error: 0.1484 - rmse: 0.3823 -
mean_absolute_percentage_error: 147.6161
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1472 -
mean_absolute_error: 0.2616 - mean_squared_error: 0.1472 - rmse: 0.3793 -
mean_absolute_percentage_error: 152.8833
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1508 -
mean_absolute_error: 0.2637 - mean_squared_error: 0.1508 - rmse: 0.3839 -
mean_absolute_percentage_error: 152.8360
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1480 -
mean_absolute_error: 0.2618 - mean_squared_error: 0.1480 - rmse: 0.3808 -
mean_absolute_percentage_error: 147.5659
Epoch 55/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1467 -
mean_absolute_error: 0.2594 - mean_squared_error: 0.1467 - rmse: 0.3789 -
mean_absolute_percentage_error: 149.2145
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1455 -
mean_absolute_error: 0.2590 - mean_squared_error: 0.1455 - rmse: 0.3768 -
mean_absolute_percentage_error: 152.5594
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1456 -
mean_absolute_error: 0.2584 - mean_squared_error: 0.1456 - rmse: 0.3778 -
mean_absolute_percentage_error: 149.1510
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1476 -
mean_absolute_error: 0.2612 - mean_squared_error: 0.1476 - rmse: 0.3802 -
mean_absolute_percentage_error: 151.3551
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1455 -
mean_absolute_error: 0.2578 - mean_squared_error: 0.1455 - rmse: 0.3768 -
mean_absolute_percentage_error: 151.7494
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1446 -
mean_absolute_error: 0.2584 - mean_squared_error: 0.1446 - rmse: 0.3760 -
mean_absolute_percentage_error: 147.5668
Epoch 61/100
```

```
210/210 [==============================] - 1s 2ms/step - loss: 0.1440 -
mean_absolute_error: 0.2578 - mean_squared_error: 0.1440 - rmse: 0.3755 -
mean_absolute_percentage_error: 149.7876
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1432 -
mean_absolute_error: 0.2572 - mean_squared_error: 0.1432 - rmse: 0.3737 -
mean_absolute_percentage_error: 153.7569
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1449 -
mean_absolute_error: 0.2581 - mean_squared_error: 0.1449 - rmse: 0.3766 -
mean_absolute_percentage_error: 151.5469
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1443 -
mean_absolute_error: 0.2579 - mean_squared_error: 0.1443 - rmse: 0.3760 -
mean_absolute_percentage_error: 146.8506
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1429 -
mean_absolute_error: 0.2564 - mean_squared_error: 0.1429 - rmse: 0.3735 -
mean_absolute_percentage_error: 149.9065
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1436 -
mean_absolute_error: 0.2576 - mean_squared_error: 0.1436 - rmse: 0.3738 -
mean_absolute_percentage_error: 148.7132
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1444 -
mean_absolute_error: 0.2574 - mean_squared_error: 0.1444 - rmse: 0.3768 -
mean_absolute_percentage_error: 145.6286
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1460 -
mean_absolute_error: 0.2591 - mean_squared_error: 0.1460 - rmse: 0.3788 -
mean_absolute_percentage_error: 148.1622
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1435 -
mean_absolute_error: 0.2571 - mean_squared_error: 0.1435 - rmse: 0.3743 -
mean_absolute_percentage_error: 145.9931
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1434 -
mean_absolute_error: 0.2580 - mean_squared_error: 0.1434 - rmse: 0.3749 -
mean_absolute_percentage_error: 143.6425
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1432 -
mean_absolute_error: 0.2565 - mean_squared_error: 0.1432 - rmse: 0.3739 -
mean_absolute_percentage_error: 148.7291
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1413 -
mean_absolute_error: 0.2534 - mean_squared_error: 0.1413 - rmse: 0.3721 -
mean_absolute_percentage_error: 143.0141
Epoch 73/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1426 -
mean_absolute_error: 0.2554 - mean_squared_error: 0.1426 - rmse: 0.3730 -
mean_absolute_percentage_error: 146.8638
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1419 -
mean_absolute_error: 0.2554 - mean_squared_error: 0.1419 - rmse: 0.3732 -
mean_absolute_percentage_error: 151.7136
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1416 -
mean_absolute_error: 0.2536 - mean_squared_error: 0.1416 - rmse: 0.3717 -
mean_absolute_percentage_error: 143.7241
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1395 -
mean_absolute_error: 0.2528 - mean_squared_error: 0.1395 - rmse: 0.3684 -
mean_absolute_percentage_error: 148.9069
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1430 -
mean_absolute_error: 0.2573 - mean_squared_error: 0.1430 - rmse: 0.3744 -
mean_absolute_percentage_error: 145.7373
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1421 -
mean_absolute_error: 0.2556 - mean_squared_error: 0.1421 - rmse: 0.3722 -
mean_absolute_percentage_error: 148.4588
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1404 -
mean_absolute_error: 0.2542 - mean_squared_error: 0.1404 - rmse: 0.3703 -
mean_absolute_percentage_error: 144.7480
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1397 -
mean_absolute_error: 0.2528 - mean_squared_error: 0.1397 - rmse: 0.3697 -
mean_absolute_percentage_error: 149.2579
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1405 -
mean_absolute_error: 0.2526 - mean_squared_error: 0.1405 - rmse: 0.3704 -
mean_absolute_percentage_error: 150.2812
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1418 -
mean_absolute_error: 0.2546 - mean_squared_error: 0.1418 - rmse: 0.3720 -
mean_absolute_percentage_error: 143.5558
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1412 -
mean_absolute_error: 0.2540 - mean_squared_error: 0.1412 - rmse: 0.3709 -
mean_absolute_percentage_error: 147.9741
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1398 -
mean_absolute_error: 0.2529 - mean_squared_error: 0.1398 - rmse: 0.3688 -
mean_absolute_percentage_error: 145.4684
Epoch 85/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1387 -
mean_absolute_error: 0.2518 - mean_squared_error: 0.1387 - rmse: 0.3675 -
mean_absolute_percentage_error: 148.6842
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1384 -
mean_absolute_error: 0.2512 - mean_squared_error: 0.1384 - rmse: 0.3674 -
mean_absolute_percentage_error: 141.3663
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1378 -
mean_absolute_error: 0.2507 - mean_squared_error: 0.1378 - rmse: 0.3665 -
mean_absolute_percentage_error: 146.8082
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1393 -
mean_absolute_error: 0.2521 - mean_squared_error: 0.1393 - rmse: 0.3687 -
mean_absolute_percentage_error: 145.7707
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1412 -
mean_absolute_error: 0.2536 - mean_squared_error: 0.1412 - rmse: 0.3709 -
mean_absolute_percentage_error: 150.7398
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1390 -
mean_absolute_error: 0.2521 - mean_squared_error: 0.1390 - rmse: 0.3689 -
mean_absolute_percentage_error: 144.9168
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1367 -
mean_absolute_error: 0.2495 - mean_squared_error: 0.1367 - rmse: 0.3658 -
mean_absolute_percentage_error: 141.7013
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1388 -
mean_absolute_error: 0.2524 - mean_squared_error: 0.1388 - rmse: 0.3675 -
mean_absolute_percentage_error: 146.3416
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1372 -
mean_absolute_error: 0.2503 - mean_squared_error: 0.1372 - rmse: 0.3665 -
mean_absolute_percentage_error: 144.0773
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1375 -
mean_absolute_error: 0.2488 - mean_squared_error: 0.1375 - rmse: 0.3664 -
mean_absolute_percentage_error: 145.0322
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1378 -
mean_absolute_error: 0.2517 - mean_squared_error: 0.1378 - rmse: 0.3670 -
mean_absolute_percentage_error: 149.7654
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1368 -
mean_absolute_error: 0.2509 - mean_squared_error: 0.1368 - rmse: 0.3653 -
mean_absolute_percentage_error: 144.2095
Epoch 97/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1381 -
mean_absolute_error: 0.2510 - mean_squared_error: 0.1381 - rmse: 0.3678 -
mean_absolute_percentage_error: 144.0427
Epoch 98/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1398 -
mean_absolute_error: 0.2540 - mean_squared_error: 0.1398 - rmse: 0.3694 -
mean_absolute_percentage_error: 148.1529
Epoch 99/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1376 -
mean_absolute_error: 0.2507 - mean_squared_error: 0.1376 - rmse: 0.3664 -
mean_absolute_percentage_error: 144.0114
Epoch 100/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1363 -
mean_absolute_error: 0.2486 - mean_squared_error: 0.1363 - rmse: 0.3651 -
mean_absolute_percentage_error: 145.0297
100/100 [==============================] - 4s 1ms/step - loss: 0.1442 -
mean_absolute_error: 0.2572 - mean_squared_error: 0.1442 - rmse: 0.3745 -
mean_absolute_percentage_error: 152.0027
200/200 [==============================] - 4s 893us/step
No Regularizer chosen
-------------------------------------------------------------------------
Training for fold 3 ...
Epoch 1/100
210/210 [==============================] - 5s 1ms/step - loss: 0.3370 -
mean_absolute_error: 0.4313 - mean_squared_error: 0.3370 - rmse: 0.5704 -
mean_absolute_percentage_error: 191.8992
Epoch 2/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2277 -
mean_absolute_error: 0.3396 - mean_squared_error: 0.2277 - rmse: 0.4737 -
mean_absolute_percentage_error: 183.3233
Epoch 3/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2111 -
mean_absolute_error: 0.3240 - mean_squared_error: 0.2111 - rmse: 0.4556 -
mean_absolute_percentage_error: 178.3282
Epoch 4/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2008 -
mean_absolute_error: 0.3143 - mean_squared_error: 0.2008 - rmse: 0.4446 -
mean_absolute_percentage_error: 177.5029
Epoch 5/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1934 -
mean_absolute_error: 0.3070 - mean_squared_error: 0.1934 - rmse: 0.4354 -
mean_absolute_percentage_error: 174.3176
Epoch 6/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1895 -
mean_absolute_error: 0.3031 - mean_squared_error: 0.1895 - rmse: 0.4311 -
mean_absolute_percentage_error: 172.0226
Epoch 7/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1839 -
```

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mean_absolute_error: 0.2986 - mean_squared_error: 0.1839 - rmse: 0.4246 -
mean_absolute_percentage_error: 168.0979
Epoch 8/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1795 -
mean_absolute_error: 0.2927 - mean_squared_error: 0.1795 - rmse: 0.4191 -
mean_absolute_percentage_error: 164.9213
Epoch 9/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1787 -
mean_absolute_error: 0.2927 - mean_squared_error: 0.1787 - rmse: 0.4175 -
mean_absolute_percentage_error: 166.3201
Epoch 10/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1763 -
mean_absolute_error: 0.2905 - mean_squared_error: 0.1763 - rmse: 0.4148 -
mean_absolute_percentage_error: 163.6759
Epoch 11/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1721 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1721 - rmse: 0.4105 -
mean_absolute_percentage_error: 159.8616
Epoch 12/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1717 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1717 - rmse: 0.4096 -
mean_absolute_percentage_error: 162.5717
Epoch 13/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1702 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1702 - rmse: 0.4086 -
mean_absolute_percentage_error: 156.9520
Epoch 14/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1678 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1678 - rmse: 0.4059 -
mean_absolute_percentage_error: 161.7871
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1658 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1658 - rmse: 0.4027 -
mean_absolute_percentage_error: 156.5116
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1641 -
mean_absolute_error: 0.2782 - mean_squared_error: 0.1641 - rmse: 0.4002 -
mean_absolute_percentage_error: 154.8568
Epoch 17/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1621 -
mean_absolute_error: 0.2767 - mean_squared_error: 0.1621 - rmse: 0.3979 -
mean_absolute_percentage_error: 154.2666
Epoch 18/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1615 -
mean_absolute_error: 0.2754 - mean_squared_error: 0.1615 - rmse: 0.3987 -
mean_absolute_percentage_error: 152.4435
Epoch 19/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1617 -
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mean_absolute_error: 0.2758 - mean_squared_error: 0.1617 - rmse: 0.3981 -
mean_absolute_percentage_error: 156.8245
Epoch 20/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1606 -
mean_absolute_error: 0.2752 - mean_squared_error: 0.1606 - rmse: 0.3972 -
mean_absolute_percentage_error: 149.7021
Epoch 21/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1583 -
mean_absolute_error: 0.2726 - mean_squared_error: 0.1583 - rmse: 0.3936 -
mean_absolute_percentage_error: 151.4273
Epoch 22/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1575 -
mean_absolute_error: 0.2722 - mean_squared_error: 0.1575 - rmse: 0.3932 -
mean_absolute_percentage_error: 151.3953
Epoch 23/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1567 -
mean_absolute_error: 0.2708 - mean_squared_error: 0.1567 - rmse: 0.3915 -
mean_absolute_percentage_error: 146.4999
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1579 -
mean_absolute_error: 0.2723 - mean_squared_error: 0.1579 - rmse: 0.3936 -
mean_absolute_percentage_error: 147.8252
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1568 -
mean_absolute_error: 0.2706 - mean_squared_error: 0.1568 - rmse: 0.3918 -
mean_absolute_percentage_error: 147.7622
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1564 -
mean_absolute_error: 0.2701 - mean_squared_error: 0.1564 - rmse: 0.3918 -
mean_absolute_percentage_error: 145.9802
Epoch 27/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1554 -
mean_absolute_error: 0.2691 - mean_squared_error: 0.1554 - rmse: 0.3908 -
mean_absolute_percentage_error: 144.7655
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1552 -
mean_absolute_error: 0.2680 - mean_squared_error: 0.1552 - rmse: 0.3898 -
mean_absolute_percentage_error: 148.7630
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1542 -
mean_absolute_error: 0.2678 - mean_squared_error: 0.1542 - rmse: 0.3880 -
mean_absolute_percentage_error: 146.0173
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1553 -
mean_absolute_error: 0.2699 - mean_squared_error: 0.1553 - rmse: 0.3891 -
mean_absolute_percentage_error: 149.2564
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1526 -
```

```
mean_absolute_error: 0.2665 - mean_squared_error: 0.1526 - rmse: 0.3862 -
mean_absolute_percentage_error: 147.2035
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1543 -
mean_absolute_error: 0.2678 - mean_squared_error: 0.1543 - rmse: 0.3885 -
mean_absolute_percentage_error: 145.9537
Epoch 33/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1511 -
mean_absolute_error: 0.2649 - mean_squared_error: 0.1511 - rmse: 0.3843 -
mean_absolute_percentage_error: 148.5604
Epoch 34/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1507 -
mean_absolute_error: 0.2634 - mean_squared_error: 0.1507 - rmse: 0.3840 -
mean_absolute_percentage_error: 144.3682
Epoch 35/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1496 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1496 - rmse: 0.3829 -
mean_absolute_percentage_error: 142.0134
Epoch 36/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1499 -
mean_absolute_error: 0.2631 - mean_squared_error: 0.1499 - rmse: 0.3822 -
mean_absolute_percentage_error: 145.5353
Epoch 37/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1496 -
mean_absolute_error: 0.2636 - mean_squared_error: 0.1496 - rmse: 0.3824 -
mean_absolute_percentage_error: 146.4680
Epoch 38/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1492 -
mean_absolute_error: 0.2629 - mean_squared_error: 0.1492 - rmse: 0.3827 -
mean_absolute_percentage_error: 141.3376
Epoch 39/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1481 -
mean_absolute_error: 0.2610 - mean_squared_error: 0.1481 - rmse: 0.3799 -
mean_absolute_percentage_error: 143.4568
Epoch 40/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1490 -
mean_absolute_error: 0.2629 - mean_squared_error: 0.1490 - rmse: 0.3811 -
mean_absolute_percentage_error: 145.2276
Epoch 41/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1478 -
mean_absolute_error: 0.2625 - mean_squared_error: 0.1478 - rmse: 0.3807 -
mean_absolute_percentage_error: 146.2392
Epoch 42/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1469 -
mean_absolute_error: 0.2601 - mean_squared_error: 0.1469 - rmse: 0.3788 -
mean_absolute_percentage_error: 143.3473
Epoch 43/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1489 -
```

```
mean_absolute_error: 0.2618 - mean_squared_error: 0.1489 - rmse: 0.3816 -
mean_absolute_percentage_error: 142.9802
Epoch 44/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1476 -
mean_absolute_error: 0.2612 - mean_squared_error: 0.1476 - rmse: 0.3792 -
mean_absolute_percentage_error: 139.8400
Epoch 45/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1455 -
mean_absolute_error: 0.2591 - mean_squared_error: 0.1455 - rmse: 0.3774 -
mean_absolute_percentage_error: 142.8515
Epoch 46/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1461 -
mean_absolute_error: 0.2600 - mean_squared_error: 0.1461 - rmse: 0.3775 -
mean_absolute_percentage_error: 144.0968
Epoch 47/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1462 -
mean_absolute_error: 0.2596 - mean_squared_error: 0.1462 - rmse: 0.3784 -
mean_absolute_percentage_error: 143.2267
Epoch 48/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1474 -
mean_absolute_error: 0.2615 - mean_squared_error: 0.1474 - rmse: 0.3794 -
mean_absolute_percentage_error: 145.8612
Epoch 49/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1451 -
mean_absolute_error: 0.2588 - mean_squared_error: 0.1451 - rmse: 0.3774 -
mean_absolute_percentage_error: 140.9281
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1469 -
mean_absolute_error: 0.2603 - mean_squared_error: 0.1469 - rmse: 0.3793 -
mean_absolute_percentage_error: 145.2052
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1457 -
mean_absolute_error: 0.2591 - mean_squared_error: 0.1457 - rmse: 0.3781 -
mean_absolute_percentage_error: 141.9222
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1444 -
mean_absolute_error: 0.2585 - mean_squared_error: 0.1444 - rmse: 0.3757 -
mean_absolute_percentage_error: 138.0549
Epoch 53/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1462 -
mean_absolute_error: 0.2602 - mean_squared_error: 0.1462 - rmse: 0.3778 -
mean_absolute_percentage_error: 141.5887
Epoch 54/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1431 -
mean_absolute_error: 0.2572 - mean_squared_error: 0.1431 - rmse: 0.3742 -
mean_absolute_percentage_error: 142.6660
Epoch 55/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1443 -
```

```
mean_absolute_error: 0.2582 - mean_squared_error: 0.1443 - rmse: 0.3749 -
mean_absolute_percentage_error: 141.8393
Epoch 56/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1436 -
mean_absolute_error: 0.2567 - mean_squared_error: 0.1436 - rmse: 0.3748 -
mean_absolute_percentage_error: 139.4668
Epoch 57/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1431 -
mean_absolute_error: 0.2568 - mean_squared_error: 0.1431 - rmse: 0.3734 -
mean_absolute_percentage_error: 141.3158
Epoch 58/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1423 -
mean_absolute_error: 0.2558 - mean_squared_error: 0.1423 - rmse: 0.3729 -
mean_absolute_percentage_error: 137.7807
Epoch 59/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1472 -
mean_absolute_error: 0.2614 - mean_squared_error: 0.1472 - rmse: 0.3793 -
mean_absolute_percentage_error: 142.9856
Epoch 60/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1419 -
mean_absolute_error: 0.2544 - mean_squared_error: 0.1419 - rmse: 0.3725 -
mean_absolute_percentage_error: 140.2973
Epoch 61/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1407 -
mean_absolute_error: 0.2537 - mean_squared_error: 0.1407 - rmse: 0.3702 -
mean_absolute_percentage_error: 138.9563
Epoch 62/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1411 -
mean_absolute_error: 0.2546 - mean_squared_error: 0.1411 - rmse: 0.3716 -
mean_absolute_percentage_error: 141.7332
Epoch 63/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1416 -
mean_absolute_error: 0.2552 - mean_squared_error: 0.1416 - rmse: 0.3722 -
mean_absolute_percentage_error: 142.2752
Epoch 64/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1410 -
mean_absolute_error: 0.2549 - mean_squared_error: 0.1410 - rmse: 0.3710 -
mean_absolute_percentage_error: 141.6206
Epoch 65/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1407 -
mean_absolute_error: 0.2540 - mean_squared_error: 0.1407 - rmse: 0.3707 -
mean_absolute_percentage_error: 139.4187
Epoch 66/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1409 -
mean_absolute_error: 0.2550 - mean_squared_error: 0.1409 - rmse: 0.3713 -
mean_absolute_percentage_error: 133.6426
Epoch 67/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1409 -
```

```
mean_absolute_error: 0.2549 - mean_squared_error: 0.1409 - rmse: 0.3710 -
mean_absolute_percentage_error: 140.6594
Epoch 68/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1387 -
mean_absolute_error: 0.2516 - mean_squared_error: 0.1387 - rmse: 0.3679 -
mean_absolute_percentage_error: 137.9770
Epoch 69/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1390 -
mean_absolute_error: 0.2520 - mean_squared_error: 0.1390 - rmse: 0.3688 -
mean_absolute_percentage_error: 139.3590
Epoch 70/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1408 -
mean_absolute_error: 0.2538 - mean_squared_error: 0.1408 - rmse: 0.3711 -
mean_absolute_percentage_error: 139.6080
Epoch 71/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1409 -
mean_absolute_error: 0.2547 - mean_squared_error: 0.1409 - rmse: 0.3713 -
mean_absolute_percentage_error: 136.9018
Epoch 72/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1387 -
mean_absolute_error: 0.2528 - mean_squared_error: 0.1387 - rmse: 0.3678 -
mean_absolute_percentage_error: 138.2704
Epoch 73/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1386 -
mean_absolute_error: 0.2513 - mean_squared_error: 0.1386 - rmse: 0.3674 -
mean_absolute_percentage_error: 137.6512
Epoch 74/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1393 -
mean_absolute_error: 0.2532 - mean_squared_error: 0.1393 - rmse: 0.3685 -
mean_absolute_percentage_error: 138.5809
Epoch 75/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1394 -
mean_absolute_error: 0.2525 - mean_squared_error: 0.1394 - rmse: 0.3692 -
mean_absolute_percentage_error: 141.3080
Epoch 76/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1379 -
mean_absolute_error: 0.2509 - mean_squared_error: 0.1379 - rmse: 0.3665 -
mean_absolute_percentage_error: 143.2919
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1356 -
mean_absolute_error: 0.2484 - mean_squared_error: 0.1356 - rmse: 0.3642 -
mean_absolute_percentage_error: 135.6631
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1371 -
mean_absolute_error: 0.2508 - mean_squared_error: 0.1371 - rmse: 0.3657 -
mean_absolute_percentage_error: 135.1213
Epoch 79/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1355 -
```

```
mean_absolute_error: 0.2487 - mean_squared_error: 0.1355 - rmse: 0.3643 -
mean_absolute_percentage_error: 137.4326
Epoch 80/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1370 -
mean_absolute_error: 0.2504 - mean_squared_error: 0.1370 - rmse: 0.3660 -
mean_absolute_percentage_error: 140.1874
Epoch 81/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1367 -
mean_absolute_error: 0.2506 - mean_squared_error: 0.1367 - rmse: 0.3654 -
mean_absolute_percentage_error: 139.7967
Epoch 82/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1380 -
mean_absolute_error: 0.2521 - mean_squared_error: 0.1380 - rmse: 0.3675 -
mean_absolute_percentage_error: 136.6496
Epoch 83/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1356 -
mean_absolute_error: 0.2489 - mean_squared_error: 0.1356 - rmse: 0.3645 -
mean_absolute_percentage_error: 137.1177
Epoch 84/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1360 -
mean_absolute_error: 0.2486 - mean_squared_error: 0.1360 - rmse: 0.3643 -
mean_absolute_percentage_error: 134.0495
Epoch 85/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1355 -
mean_absolute_error: 0.2485 - mean_squared_error: 0.1355 - rmse: 0.3637 -
mean_absolute_percentage_error: 135.3309
Epoch 86/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1355 -
mean_absolute_error: 0.2488 - mean_squared_error: 0.1355 - rmse: 0.3635 -
mean_absolute_percentage_error: 137.7668
Epoch 87/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1359 -
mean_absolute_error: 0.2493 - mean_squared_error: 0.1359 - rmse: 0.3650 -
mean_absolute_percentage_error: 135.0936
Epoch 88/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1357 -
mean_absolute_error: 0.2491 - mean_squared_error: 0.1357 - rmse: 0.3653 -
mean_absolute_percentage_error: 138.0746
Epoch 89/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1354 -
mean_absolute_error: 0.2485 - mean_squared_error: 0.1354 - rmse: 0.3633 -
mean_absolute_percentage_error: 136.3950
Epoch 90/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1350 -
mean_absolute_error: 0.2481 - mean_squared_error: 0.1350 - rmse: 0.3639 -
mean_absolute_percentage_error: 136.0899
Epoch 91/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1336 -
```

```
mean_absolute_error: 0.2467 - mean_squared_error: 0.1336 - rmse: 0.3622 -
mean_absolute_percentage_error: 134.7779
Epoch 92/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1355 -
mean_absolute_error: 0.2506 - mean_squared_error: 0.1355 - rmse: 0.3636 -
mean_absolute_percentage_error: 137.4922
Epoch 93/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1351 -
mean_absolute_error: 0.2472 - mean_squared_error: 0.1351 - rmse: 0.3631 -
mean_absolute_percentage_error: 136.6817
Epoch 94/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1356 -
mean_absolute_error: 0.2492 - mean_squared_error: 0.1356 - rmse: 0.3643 -
mean_absolute_percentage_error: 138.3287
Epoch 95/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1326 -
mean_absolute_error: 0.2454 - mean_squared_error: 0.1326 - rmse: 0.3593 -
mean_absolute_percentage_error: 136.1433
Epoch 96/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1335 -
mean_absolute_error: 0.2485 - mean_squared_error: 0.1335 - rmse: 0.3614 -
mean_absolute_percentage_error: 133.8966
Epoch 97/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1334 -
mean_absolute_error: 0.2471 - mean_squared_error: 0.1334 - rmse: 0.3612 -
mean_absolute_percentage_error: 136.2491
Epoch 98/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1318 -
mean_absolute_error: 0.2455 - mean_squared_error: 0.1318 - rmse: 0.3585 -
mean_absolute_percentage_error: 134.4084
Epoch 99/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1324 -
mean_absolute_error: 0.2450 - mean_squared_error: 0.1324 - rmse: 0.3602 -
mean_absolute_percentage_error: 134.0510
Epoch 100/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1331 -
mean_absolute_error: 0.2462 - mean_squared_error: 0.1331 - rmse: 0.3607 -
mean_absolute_percentage_error: 133.9587
100/100 [==============================] - 4s 1ms/step - loss: 0.1485 -
mean_absolute_error: 0.2626 - mean_squared_error: 0.1485 - rmse: 0.3799 -
mean_absolute_percentage_error: 152.3984
200/200 [==============================] - 4s 898us/step
No Regularizer chosen
------------------------------------------------------------------------------
Training for fold 4 ...
Epoch 1/100
210/210 [==============================] - 5s 1ms/step - loss: 0.3501 -
mean_absolute_error: 0.4415 - mean_squared_error: 0.3501 - rmse: 0.5808 -
```

```
mean_absolute_percentage_error: 214.0336
Epoch 2/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2394 -
mean_absolute_error: 0.3475 - mean_squared_error: 0.2394 - rmse: 0.4843 -
mean_absolute_percentage_error: 193.4778
Epoch 3/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2191 -
mean_absolute_error: 0.3290 - mean_squared_error: 0.2191 - rmse: 0.4638 -
mean_absolute_percentage_error: 193.2908
Epoch 4/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2103 -
mean_absolute_error: 0.3209 - mean_squared_error: 0.2103 - rmse: 0.4544 -
mean_absolute_percentage_error: 187.7619
Epoch 5/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2035 -
mean_absolute_error: 0.3140 - mean_squared_error: 0.2035 - rmse: 0.4474 -
mean_absolute_percentage_error: 187.3822
Epoch 6/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1990 -
mean_absolute_error: 0.3117 - mean_squared_error: 0.1990 - rmse: 0.4425 -
mean_absolute_percentage_error: 186.9748
Epoch 7/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1934 -
mean_absolute_error: 0.3064 - mean_squared_error: 0.1934 - rmse: 0.4350 -
mean_absolute_percentage_error: 184.9578
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1886 -
mean_absolute_error: 0.3007 - mean_squared_error: 0.1886 - rmse: 0.4308 -
mean_absolute_percentage_error: 182.2057
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1868 -
mean_absolute_error: 0.2991 - mean_squared_error: 0.1868 - rmse: 0.4282 -
mean_absolute_percentage_error: 183.0993
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1834 -
mean_absolute_error: 0.2961 - mean_squared_error: 0.1834 - rmse: 0.4232 -
mean_absolute_percentage_error: 176.7925
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1797 -
mean_absolute_error: 0.2921 - mean_squared_error: 0.1797 - rmse: 0.4192 -
mean_absolute_percentage_error: 174.3509
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1792 -
mean_absolute_error: 0.2918 - mean_squared_error: 0.1792 - rmse: 0.4188 -
mean_absolute_percentage_error: 169.8887
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1751 -
mean_absolute_error: 0.2872 - mean_squared_error: 0.1751 - rmse: 0.4145 -
```

```
mean_absolute_percentage_error: 172.9554
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1739 -
mean_absolute_error: 0.2874 - mean_squared_error: 0.1739 - rmse: 0.4133 -
mean_absolute_percentage_error: 170.4277
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1749 -
mean_absolute_error: 0.2879 - mean_squared_error: 0.1749 - rmse: 0.4135 -
mean_absolute_percentage_error: 167.3511
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1741 -
mean_absolute_error: 0.2875 - mean_squared_error: 0.1741 - rmse: 0.4132 -
mean_absolute_percentage_error: 169.4719
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1695 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1695 - rmse: 0.4080 -
mean_absolute_percentage_error: 167.6376
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1690 -
mean_absolute_error: 0.2811 - mean_squared_error: 0.1690 - rmse: 0.4074 -
mean_absolute_percentage_error: 162.1214
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1670 -
mean_absolute_error: 0.2802 - mean_squared_error: 0.1670 - rmse: 0.4052 -
mean_absolute_percentage_error: 165.9379
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1673 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1673 - rmse: 0.4048 -
mean_absolute_percentage_error: 161.6577
Epoch 21/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1655 -
mean_absolute_error: 0.2783 - mean_squared_error: 0.1655 - rmse: 0.4015 -
mean_absolute_percentage_error: 159.7729
Epoch 22/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1637 -
mean_absolute_error: 0.2761 - mean_squared_error: 0.1637 - rmse: 0.4007 -
mean_absolute_percentage_error: 163.3742
Epoch 23/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1646 -
mean_absolute_error: 0.2771 - mean_squared_error: 0.1646 - rmse: 0.4015 -
mean_absolute_percentage_error: 166.3125
Epoch 24/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1623 -
mean_absolute_error: 0.2755 - mean_squared_error: 0.1623 - rmse: 0.3987 -
mean_absolute_percentage_error: 162.2252
Epoch 25/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1631 -
mean_absolute_error: 0.2764 - mean_squared_error: 0.1631 - rmse: 0.3996 -
```

```
mean_absolute_percentage_error: 159.7151
Epoch 26/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1603 -
mean_absolute_error: 0.2730 - mean_squared_error: 0.1603 - rmse: 0.3966 -
mean_absolute_percentage_error: 161.5187
Epoch 27/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1609 -
mean_absolute_error: 0.2739 - mean_squared_error: 0.1609 - rmse: 0.3976 -
mean_absolute_percentage_error: 156.2203
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1598 -
mean_absolute_error: 0.2729 - mean_squared_error: 0.1598 - rmse: 0.3952 -
mean_absolute_percentage_error: 157.0321
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1581 -
mean_absolute_error: 0.2714 - mean_squared_error: 0.1581 - rmse: 0.3938 -
mean_absolute_percentage_error: 161.5472
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1575 -
mean_absolute_error: 0.2712 - mean_squared_error: 0.1575 - rmse: 0.3931 -
mean_absolute_percentage_error: 158.5265
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1602 -
mean_absolute_error: 0.2729 - mean_squared_error: 0.1602 - rmse: 0.3952 -
mean_absolute_percentage_error: 157.3074
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1596 -
mean_absolute_error: 0.2717 - mean_squared_error: 0.1596 - rmse: 0.3950 -
mean_absolute_percentage_error: 157.6379
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1562 -
mean_absolute_error: 0.2697 - mean_squared_error: 0.1562 - rmse: 0.3908 -
mean_absolute_percentage_error: 158.5877
Epoch 34/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1549 -
mean_absolute_error: 0.2680 - mean_squared_error: 0.1549 - rmse: 0.3889 -
mean_absolute_percentage_error: 156.2197
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1578 -
mean_absolute_error: 0.2711 - mean_squared_error: 0.1578 - rmse: 0.3930 -
mean_absolute_percentage_error: 155.6451
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1560 -
mean_absolute_error: 0.2693 - mean_squared_error: 0.1560 - rmse: 0.3905 -
mean_absolute_percentage_error: 157.1991
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1557 -
mean_absolute_error: 0.2691 - mean_squared_error: 0.1557 - rmse: 0.3897 -
```

```
mean_absolute_percentage_error: 156.7251
Epoch 38/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1548 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1548 - rmse: 0.3899 -
mean_absolute_percentage_error: 157.4963
Epoch 39/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1530 -
mean_absolute_error: 0.2656 - mean_squared_error: 0.1530 - rmse: 0.3864 -
mean_absolute_percentage_error: 153.1736
Epoch 40/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1541 -
mean_absolute_error: 0.2675 - mean_squared_error: 0.1541 - rmse: 0.3887 -
mean_absolute_percentage_error: 155.0142
Epoch 41/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1531 -
mean_absolute_error: 0.2655 - mean_squared_error: 0.1531 - rmse: 0.3877 -
mean_absolute_percentage_error: 158.1328
Epoch 42/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1533 -
mean_absolute_error: 0.2653 - mean_squared_error: 0.1533 - rmse: 0.3865 -
mean_absolute_percentage_error: 157.9813
Epoch 43/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1536 -
mean_absolute_error: 0.2667 - mean_squared_error: 0.1536 - rmse: 0.3877 -
mean_absolute_percentage_error: 150.3629
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1516 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1516 - rmse: 0.3852 -
mean_absolute_percentage_error: 155.5205
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1527 -
mean_absolute_error: 0.2653 - mean_squared_error: 0.1527 - rmse: 0.3869 -
mean_absolute_percentage_error: 154.6682
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1528 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1528 - rmse: 0.3867 -
mean_absolute_percentage_error: 156.7461
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1506 -
mean_absolute_error: 0.2639 - mean_squared_error: 0.1506 - rmse: 0.3838 -
mean_absolute_percentage_error: 152.8652
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1524 -
mean_absolute_error: 0.2646 - mean_squared_error: 0.1524 - rmse: 0.3861 -
mean_absolute_percentage_error: 158.9214
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1526 -
mean_absolute_error: 0.2654 - mean_squared_error: 0.1526 - rmse: 0.3862 -
```

```
mean_absolute_percentage_error: 151.7931
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1507 -
mean_absolute_error: 0.2641 - mean_squared_error: 0.1507 - rmse: 0.3844 -
mean_absolute_percentage_error: 154.5799
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1492 -
mean_absolute_error: 0.2619 - mean_squared_error: 0.1492 - rmse: 0.3809 -
mean_absolute_percentage_error: 150.7819
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1485 -
mean_absolute_error: 0.2611 - mean_squared_error: 0.1485 - rmse: 0.3813 -
mean_absolute_percentage_error: 147.6431
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1495 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1495 - rmse: 0.3814 -
mean_absolute_percentage_error: 151.8784
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1479 -
mean_absolute_error: 0.2612 - mean_squared_error: 0.1479 - rmse: 0.3798 -
mean_absolute_percentage_error: 154.1735
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1500 -
mean_absolute_error: 0.2631 - mean_squared_error: 0.1500 - rmse: 0.3835 -
mean_absolute_percentage_error: 154.3997
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1496 -
mean_absolute_error: 0.2618 - mean_squared_error: 0.1496 - rmse: 0.3831 -
mean_absolute_percentage_error: 150.2089
Epoch 57/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1482 -
mean_absolute_error: 0.2615 - mean_squared_error: 0.1482 - rmse: 0.3809 -
mean_absolute_percentage_error: 151.6055
Epoch 58/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1512 -
mean_absolute_error: 0.2635 - mean_squared_error: 0.1512 - rmse: 0.3841 -
mean_absolute_percentage_error: 150.8432
Epoch 59/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1486 -
mean_absolute_error: 0.2616 - mean_squared_error: 0.1486 - rmse: 0.3807 -
mean_absolute_percentage_error: 148.6709
Epoch 60/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1477 -
mean_absolute_error: 0.2602 - mean_squared_error: 0.1477 - rmse: 0.3801 -
mean_absolute_percentage_error: 148.8203
Epoch 61/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1477 -
mean_absolute_error: 0.2604 - mean_squared_error: 0.1477 - rmse: 0.3798 -
```

```
mean_absolute_percentage_error: 153.4987
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1460 -
mean_absolute_error: 0.2591 - mean_squared_error: 0.1460 - rmse: 0.3783 -
mean_absolute_percentage_error: 151.4044
Epoch 63/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1455 -
mean_absolute_error: 0.2587 - mean_squared_error: 0.1455 - rmse: 0.3773 -
mean_absolute_percentage_error: 153.7196
Epoch 64/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1468 -
mean_absolute_error: 0.2585 - mean_squared_error: 0.1468 - rmse: 0.3788 -
mean_absolute_percentage_error: 154.5476
Epoch 65/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1483 -
mean_absolute_error: 0.2612 - mean_squared_error: 0.1483 - rmse: 0.3808 -
mean_absolute_percentage_error: 152.1180
Epoch 66/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1475 -
mean_absolute_error: 0.2609 - mean_squared_error: 0.1475 - rmse: 0.3793 -
mean_absolute_percentage_error: 145.9684
Epoch 67/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1449 -
mean_absolute_error: 0.2574 - mean_squared_error: 0.1449 - rmse: 0.3764 -
mean_absolute_percentage_error: 147.9357
Epoch 68/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1462 -
mean_absolute_error: 0.2585 - mean_squared_error: 0.1462 - rmse: 0.3784 -
mean_absolute_percentage_error: 147.5546
Epoch 69/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1461 -
mean_absolute_error: 0.2590 - mean_squared_error: 0.1461 - rmse: 0.3781 -
mean_absolute_percentage_error: 151.4846
Epoch 70/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1460 -
mean_absolute_error: 0.2579 - mean_squared_error: 0.1460 - rmse: 0.3772 -
mean_absolute_percentage_error: 146.6441
Epoch 71/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1451 -
mean_absolute_error: 0.2574 - mean_squared_error: 0.1451 - rmse: 0.3764 -
mean_absolute_percentage_error: 151.3268
Epoch 72/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1433 -
mean_absolute_error: 0.2565 - mean_squared_error: 0.1433 - rmse: 0.3748 -
mean_absolute_percentage_error: 147.7791
Epoch 73/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1467 -
mean_absolute_error: 0.2597 - mean_squared_error: 0.1467 - rmse: 0.3783 -
```

```
mean_absolute_percentage_error: 146.6477
Epoch 74/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1461 -
mean_absolute_error: 0.2598 - mean_squared_error: 0.1461 - rmse: 0.3792 -
mean_absolute_percentage_error: 150.3831
Epoch 75/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1457 -
mean_absolute_error: 0.2585 - mean_squared_error: 0.1457 - rmse: 0.3771 -
mean_absolute_percentage_error: 151.3622
Epoch 76/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1452 -
mean_absolute_error: 0.2582 - mean_squared_error: 0.1452 - rmse: 0.3769 -
mean_absolute_percentage_error: 147.0501
Epoch 77/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1440 -
mean_absolute_error: 0.2577 - mean_squared_error: 0.1440 - rmse: 0.3754 -
mean_absolute_percentage_error: 144.7284
Epoch 78/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1450 -
mean_absolute_error: 0.2571 - mean_squared_error: 0.1450 - rmse: 0.3763 -
mean_absolute_percentage_error: 152.8373
Epoch 79/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1427 -
mean_absolute_error: 0.2553 - mean_squared_error: 0.1427 - rmse: 0.3729 -
mean_absolute_percentage_error: 147.1269
Epoch 80/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1432 -
mean_absolute_error: 0.2551 - mean_squared_error: 0.1432 - rmse: 0.3740 -
mean_absolute_percentage_error: 145.7323
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1445 -
mean_absolute_error: 0.2567 - mean_squared_error: 0.1445 - rmse: 0.3758 -
mean_absolute_percentage_error: 148.2068
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1422 -
mean_absolute_error: 0.2545 - mean_squared_error: 0.1422 - rmse: 0.3737 -
mean_absolute_percentage_error: 147.3953
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1418 -
mean_absolute_error: 0.2557 - mean_squared_error: 0.1418 - rmse: 0.3720 -
mean_absolute_percentage_error: 151.9999
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1448 -
mean_absolute_error: 0.2570 - mean_squared_error: 0.1448 - rmse: 0.3755 -
mean_absolute_percentage_error: 151.7246
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1429 -
mean_absolute_error: 0.2566 - mean_squared_error: 0.1429 - rmse: 0.3738 -
```

```
mean_absolute_percentage_error: 146.0518
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1431 -
mean_absolute_error: 0.2559 - mean_squared_error: 0.1431 - rmse: 0.3740 -
mean_absolute_percentage_error: 149.3712
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1422 -
mean_absolute_error: 0.2555 - mean_squared_error: 0.1422 - rmse: 0.3729 -
mean_absolute_percentage_error: 142.2263
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1424 -
mean_absolute_error: 0.2560 - mean_squared_error: 0.1424 - rmse: 0.3731 -
mean_absolute_percentage_error: 146.0657
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1438 -
mean_absolute_error: 0.2559 - mean_squared_error: 0.1438 - rmse: 0.3747 -
mean_absolute_percentage_error: 145.4240
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1412 -
mean_absolute_error: 0.2550 - mean_squared_error: 0.1412 - rmse: 0.3712 -
mean_absolute_percentage_error: 144.4408
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1408 -
mean_absolute_error: 0.2536 - mean_squared_error: 0.1408 - rmse: 0.3712 -
mean_absolute_percentage_error: 145.0294
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1430 -
mean_absolute_error: 0.2558 - mean_squared_error: 0.1430 - rmse: 0.3730 -
mean_absolute_percentage_error: 145.8735
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1407 -
mean_absolute_error: 0.2540 - mean_squared_error: 0.1407 - rmse: 0.3704 -
mean_absolute_percentage_error: 146.5545
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1390 -
mean_absolute_error: 0.2511 - mean_squared_error: 0.1390 - rmse: 0.3684 -
mean_absolute_percentage_error: 148.0474
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1414 -
mean_absolute_error: 0.2537 - mean_squared_error: 0.1414 - rmse: 0.3722 -
mean_absolute_percentage_error: 146.0363
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1411 -
mean_absolute_error: 0.2542 - mean_squared_error: 0.1411 - rmse: 0.3707 -
mean_absolute_percentage_error: 147.2323
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1418 -
mean_absolute_error: 0.2538 - mean_squared_error: 0.1418 - rmse: 0.3726 -
```

```
mean_absolute_percentage_error: 145.2551
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1405 -
mean_absolute_error: 0.2536 - mean_squared_error: 0.1405 - rmse: 0.3696 -
mean_absolute_percentage_error: 141.4291
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1413 -
mean_absolute_error: 0.2550 - mean_squared_error: 0.1413 - rmse: 0.3711 -
mean_absolute_percentage_error: 144.2973
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1395 -
mean_absolute_error: 0.2516 - mean_squared_error: 0.1395 - rmse: 0.3696 -
mean_absolute_percentage_error: 149.3257
100/100 [==============================] - 4s 1ms/step - loss: 0.1495 -
mean_absolute_error: 0.2573 - mean_squared_error: 0.1495 - rmse: 0.3801 -
mean_absolute_percentage_error: 164.6626
200/200 [==============================] - 4s 1ms/step
No Regularizer chosen
--------------------------------------------------------------------------
Training for fold 5 ...
Epoch 1/100
210/210 [==============================] - 5s 1ms/step - loss: 0.3486 -
mean_absolute_error: 0.4451 - mean_squared_error: 0.3486 - rmse: 0.5789 -
mean_absolute_percentage_error: 189.7840
Epoch 2/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2289 -
mean_absolute_error: 0.3405 - mean_squared_error: 0.2289 - rmse: 0.4749 -
mean_absolute_percentage_error: 181.6810
Epoch 3/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2137 -
mean_absolute_error: 0.3254 - mean_squared_error: 0.2137 - rmse: 0.4583 -
mean_absolute_percentage_error: 190.4319
Epoch 4/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2029 -
mean_absolute_error: 0.3147 - mean_squared_error: 0.2029 - rmse: 0.4458 -
mean_absolute_percentage_error: 189.1020
Epoch 5/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1976 -
mean_absolute_error: 0.3098 - mean_squared_error: 0.1976 - rmse: 0.4391 -
mean_absolute_percentage_error: 179.4768
Epoch 6/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1901 -
mean_absolute_error: 0.3032 - mean_squared_error: 0.1901 - rmse: 0.4321 -
mean_absolute_percentage_error: 172.8854
Epoch 7/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1894 -
mean_absolute_error: 0.3016 - mean_squared_error: 0.1894 - rmse: 0.4308 -
mean_absolute_percentage_error: 174.1483
```

```
Epoch 8/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1831 -
mean_absolute_error: 0.2963 - mean_squared_error: 0.1831 - rmse: 0.4248 -
mean_absolute_percentage_error: 168.8628
Epoch 9/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1819 -
mean_absolute_error: 0.2956 - mean_squared_error: 0.1819 - rmse: 0.4230 -
mean_absolute_percentage_error: 171.0560
Epoch 10/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1789 -
mean_absolute_error: 0.2925 - mean_squared_error: 0.1789 - rmse: 0.4181 -
mean_absolute_percentage_error: 167.7388
Epoch 11/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1764 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1764 - rmse: 0.4162 -
mean_absolute_percentage_error: 163.5452
Epoch 12/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1754 -
mean_absolute_error: 0.2888 - mean_squared_error: 0.1754 - rmse: 0.4142 -
mean_absolute_percentage_error: 166.5067
Epoch 13/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1736 -
mean_absolute_error: 0.2877 - mean_squared_error: 0.1736 - rmse: 0.4120 -
mean_absolute_percentage_error: 159.7385
Epoch 14/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1729 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1729 - rmse: 0.4113 -
mean_absolute_percentage_error: 167.1472
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1690 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1690 - rmse: 0.4068 -
mean_absolute_percentage_error: 164.1701
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1688 -
mean_absolute_error: 0.2831 - mean_squared_error: 0.1688 - rmse: 0.4073 -
mean_absolute_percentage_error: 159.1357
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1698 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1698 - rmse: 0.4079 -
mean_absolute_percentage_error: 160.3025
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1684 -
mean_absolute_error: 0.2820 - mean_squared_error: 0.1684 - rmse: 0.4066 -
mean_absolute_percentage_error: 164.6245
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1647 -
mean_absolute_error: 0.2790 - mean_squared_error: 0.1647 - rmse: 0.4017 -
mean_absolute_percentage_error: 158.0262
```

```
Epoch 20/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1646 -
mean_absolute_error: 0.2786 - mean_squared_error: 0.1646 - rmse: 0.4027 -
mean_absolute_percentage_error: 160.1002
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1648 -
mean_absolute_error: 0.2802 - mean_squared_error: 0.1648 - rmse: 0.4023 -
mean_absolute_percentage_error: 156.6364
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1623 -
mean_absolute_error: 0.2763 - mean_squared_error: 0.1623 - rmse: 0.3992 -
mean_absolute_percentage_error: 157.8667
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1620 -
mean_absolute_error: 0.2773 - mean_squared_error: 0.1620 - rmse: 0.3992 -
mean_absolute_percentage_error: 148.9464
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1625 -
mean_absolute_error: 0.2762 - mean_squared_error: 0.1625 - rmse: 0.3986 -
mean_absolute_percentage_error: 157.1845
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1611 -
mean_absolute_error: 0.2748 - mean_squared_error: 0.1611 - rmse: 0.3969 -
mean_absolute_percentage_error: 155.4495
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1640 -
mean_absolute_error: 0.2772 - mean_squared_error: 0.1640 - rmse: 0.4002 -
mean_absolute_percentage_error: 157.2282
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1608 -
mean_absolute_error: 0.2759 - mean_squared_error: 0.1608 - rmse: 0.3963 -
mean_absolute_percentage_error: 149.2553
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1613 -
mean_absolute_error: 0.2749 - mean_squared_error: 0.1613 - rmse: 0.3976 -
mean_absolute_percentage_error: 151.8140
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1603 -
mean_absolute_error: 0.2744 - mean_squared_error: 0.1603 - rmse: 0.3958 -
mean_absolute_percentage_error: 149.7546
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1572 -
mean_absolute_error: 0.2727 - mean_squared_error: 0.1572 - rmse: 0.3925 -
mean_absolute_percentage_error: 155.5803
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1585 -
mean_absolute_error: 0.2733 - mean_squared_error: 0.1585 - rmse: 0.3940 -
mean_absolute_percentage_error: 153.2558
```

```
Epoch 32/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1565 -
mean_absolute_error: 0.2711 - mean_squared_error: 0.1565 - rmse: 0.3919 -
mean_absolute_percentage_error: 149.9955
Epoch 33/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1561 -
mean_absolute_error: 0.2702 - mean_squared_error: 0.1561 - rmse: 0.3912 -
mean_absolute_percentage_error: 153.6687
Epoch 34/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1577 -
mean_absolute_error: 0.2716 - mean_squared_error: 0.1577 - rmse: 0.3936 -
mean_absolute_percentage_error: 150.0500
Epoch 35/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1537 -
mean_absolute_error: 0.2696 - mean_squared_error: 0.1537 - rmse: 0.3879 -
mean_absolute_percentage_error: 149.3049
Epoch 36/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1582 -
mean_absolute_error: 0.2728 - mean_squared_error: 0.1582 - rmse: 0.3938 -
mean_absolute_percentage_error: 148.9734
Epoch 37/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1555 -
mean_absolute_error: 0.2699 - mean_squared_error: 0.1555 - rmse: 0.3908 -
mean_absolute_percentage_error: 155.0140
Epoch 38/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1536 -
mean_absolute_error: 0.2684 - mean_squared_error: 0.1536 - rmse: 0.3876 -
mean_absolute_percentage_error: 151.5519
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1559 -
mean_absolute_error: 0.2717 - mean_squared_error: 0.1559 - rmse: 0.3893 -
mean_absolute_percentage_error: 148.1586
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1541 -
mean_absolute_error: 0.2686 - mean_squared_error: 0.1541 - rmse: 0.3890 -
mean_absolute_percentage_error: 148.2770
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1530 -
mean_absolute_error: 0.2685 - mean_squared_error: 0.1530 - rmse: 0.3877 -
mean_absolute_percentage_error: 149.0023
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1546 -
mean_absolute_error: 0.2691 - mean_squared_error: 0.1546 - rmse: 0.3892 -
mean_absolute_percentage_error: 149.9727
Epoch 43/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1508 -
mean_absolute_error: 0.2658 - mean_squared_error: 0.1508 - rmse: 0.3844 -
mean_absolute_percentage_error: 149.7686
```

```
Epoch 44/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1508 -
mean_absolute_error: 0.2659 - mean_squared_error: 0.1508 - rmse: 0.3842 -
mean_absolute_percentage_error: 147.7958
Epoch 45/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1505 -
mean_absolute_error: 0.2659 - mean_squared_error: 0.1505 - rmse: 0.3850 -
mean_absolute_percentage_error: 147.8900
Epoch 46/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1526 -
mean_absolute_error: 0.2673 - mean_squared_error: 0.1526 - rmse: 0.3860 -
mean_absolute_percentage_error: 149.6666
Epoch 47/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1509 -
mean_absolute_error: 0.2656 - mean_squared_error: 0.1509 - rmse: 0.3848 -
mean_absolute_percentage_error: 148.6134
Epoch 48/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1502 -
mean_absolute_error: 0.2654 - mean_squared_error: 0.1502 - rmse: 0.3834 -
mean_absolute_percentage_error: 147.6734
Epoch 49/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1507 -
mean_absolute_error: 0.2662 - mean_squared_error: 0.1507 - rmse: 0.3839 -
mean_absolute_percentage_error: 150.5990
Epoch 50/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1505 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1505 - rmse: 0.3825 -
mean_absolute_percentage_error: 142.9588
Epoch 51/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1502 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1502 - rmse: 0.3826 -
mean_absolute_percentage_error: 147.4178
Epoch 52/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1499 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1499 - rmse: 0.3832 -
mean_absolute_percentage_error: 145.5364
Epoch 53/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1499 -
mean_absolute_error: 0.2656 - mean_squared_error: 0.1499 - rmse: 0.3825 -
mean_absolute_percentage_error: 143.5411
Epoch 54/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1489 -
mean_absolute_error: 0.2628 - mean_squared_error: 0.1489 - rmse: 0.3814 -
mean_absolute_percentage_error: 146.4971
Epoch 55/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1476 -
mean_absolute_error: 0.2622 - mean_squared_error: 0.1476 - rmse: 0.3805 -
mean_absolute_percentage_error: 143.5253
```

```
Epoch 56/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1477 -
mean_absolute_error: 0.2634 - mean_squared_error: 0.1477 - rmse: 0.3809 -
mean_absolute_percentage_error: 147.1084
Epoch 57/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1475 -
mean_absolute_error: 0.2620 - mean_squared_error: 0.1475 - rmse: 0.3802 -
mean_absolute_percentage_error: 142.9478
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1466 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1466 - rmse: 0.3782 -
mean_absolute_percentage_error: 146.9055
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1482 -
mean_absolute_error: 0.2637 - mean_squared_error: 0.1482 - rmse: 0.3814 -
mean_absolute_percentage_error: 145.9185
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1475 -
mean_absolute_error: 0.2626 - mean_squared_error: 0.1475 - rmse: 0.3798 -
mean_absolute_percentage_error: 143.0036
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1451 -
mean_absolute_error: 0.2598 - mean_squared_error: 0.1451 - rmse: 0.3764 -
mean_absolute_percentage_error: 143.0355
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1474 -
mean_absolute_error: 0.2623 - mean_squared_error: 0.1474 - rmse: 0.3795 -
mean_absolute_percentage_error: 142.1762
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1463 -
mean_absolute_error: 0.2607 - mean_squared_error: 0.1463 - rmse: 0.3785 -
mean_absolute_percentage_error: 144.1613
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1478 -
mean_absolute_error: 0.2632 - mean_squared_error: 0.1478 - rmse: 0.3802 -
mean_absolute_percentage_error: 147.7107
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1458 -
mean_absolute_error: 0.2601 - mean_squared_error: 0.1458 - rmse: 0.3773 -
mean_absolute_percentage_error: 138.5505
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1463 -
mean_absolute_error: 0.2608 - mean_squared_error: 0.1463 - rmse: 0.3783 -
mean_absolute_percentage_error: 144.1501
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1455 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1455 - rmse: 0.3774 -
mean_absolute_percentage_error: 142.4527
```

```
Epoch 68/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1457 -
mean_absolute_error: 0.2613 - mean_squared_error: 0.1457 - rmse: 0.3779 -
mean_absolute_percentage_error: 147.2118
Epoch 69/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1462 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1462 - rmse: 0.3787 -
mean_absolute_percentage_error: 144.7707
Epoch 70/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1462 -
mean_absolute_error: 0.2606 - mean_squared_error: 0.1462 - rmse: 0.3785 -
mean_absolute_percentage_error: 144.7000
Epoch 71/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1460 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1460 - rmse: 0.3768 -
mean_absolute_percentage_error: 143.3738
Epoch 72/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1444 -
mean_absolute_error: 0.2592 - mean_squared_error: 0.1444 - rmse: 0.3751 -
mean_absolute_percentage_error: 146.2116
Epoch 73/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1467 -
mean_absolute_error: 0.2604 - mean_squared_error: 0.1467 - rmse: 0.3783 -
mean_absolute_percentage_error: 147.5955
Epoch 74/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1424 -
mean_absolute_error: 0.2564 - mean_squared_error: 0.1424 - rmse: 0.3734 -
mean_absolute_percentage_error: 141.1363
Epoch 75/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1434 -
mean_absolute_error: 0.2576 - mean_squared_error: 0.1434 - rmse: 0.3742 -
mean_absolute_percentage_error: 140.8780
Epoch 76/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1442 -
mean_absolute_error: 0.2587 - mean_squared_error: 0.1442 - rmse: 0.3765 -
mean_absolute_percentage_error: 141.6575
Epoch 77/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1433 -
mean_absolute_error: 0.2583 - mean_squared_error: 0.1433 - rmse: 0.3745 -
mean_absolute_percentage_error: 146.1259
Epoch 78/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1437 -
mean_absolute_error: 0.2588 - mean_squared_error: 0.1437 - rmse: 0.3750 -
mean_absolute_percentage_error: 142.0581
Epoch 79/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1430 -
mean_absolute_error: 0.2581 - mean_squared_error: 0.1430 - rmse: 0.3737 -
mean_absolute_percentage_error: 144.0630
```

```
Epoch 80/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1417 -
mean_absolute_error: 0.2562 - mean_squared_error: 0.1417 - rmse: 0.3720 -
mean_absolute_percentage_error: 140.9621
Epoch 81/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1436 -
mean_absolute_error: 0.2583 - mean_squared_error: 0.1436 - rmse: 0.3744 -
mean_absolute_percentage_error: 145.0384
Epoch 82/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1438 -
mean_absolute_error: 0.2574 - mean_squared_error: 0.1438 - rmse: 0.3747 -
mean_absolute_percentage_error: 142.4984
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1425 -
mean_absolute_error: 0.2572 - mean_squared_error: 0.1425 - rmse: 0.3736 -
mean_absolute_percentage_error: 142.6309
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1404 -
mean_absolute_error: 0.2549 - mean_squared_error: 0.1404 - rmse: 0.3710 -
mean_absolute_percentage_error: 141.4161
Epoch 85/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1409 -
mean_absolute_error: 0.2553 - mean_squared_error: 0.1409 - rmse: 0.3707 -
mean_absolute_percentage_error: 143.9714
Epoch 86/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1415 -
mean_absolute_error: 0.2557 - mean_squared_error: 0.1415 - rmse: 0.3721 -
mean_absolute_percentage_error: 138.0734
Epoch 87/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1426 -
mean_absolute_error: 0.2562 - mean_squared_error: 0.1426 - rmse: 0.3739 -
mean_absolute_percentage_error: 142.6481
Epoch 88/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1426 -
mean_absolute_error: 0.2569 - mean_squared_error: 0.1426 - rmse: 0.3739 -
mean_absolute_percentage_error: 142.0770
Epoch 89/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1416 -
mean_absolute_error: 0.2565 - mean_squared_error: 0.1416 - rmse: 0.3716 -
mean_absolute_percentage_error: 143.1862
Epoch 90/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1407 -
mean_absolute_error: 0.2558 - mean_squared_error: 0.1407 - rmse: 0.3721 -
mean_absolute_percentage_error: 144.1730
Epoch 91/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1410 -
mean_absolute_error: 0.2558 - mean_squared_error: 0.1410 - rmse: 0.3709 -
mean_absolute_percentage_error: 142.7459
```

```
Epoch 92/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1420 -
mean_absolute_error: 0.2562 - mean_squared_error: 0.1420 - rmse: 0.3721 -
mean_absolute_percentage_error: 141.6604
Epoch 93/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1404 -
mean_absolute_error: 0.2543 - mean_squared_error: 0.1404 - rmse: 0.3705 -
mean_absolute_percentage_error: 144.3159
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1401 -
mean_absolute_error: 0.2545 - mean_squared_error: 0.1401 - rmse: 0.3695 -
mean_absolute_percentage_error: 141.8229
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1410 -
mean_absolute_error: 0.2547 - mean_squared_error: 0.1410 - rmse: 0.3718 -
mean_absolute_percentage_error: 141.0793
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1384 -
mean_absolute_error: 0.2531 - mean_squared_error: 0.1384 - rmse: 0.3683 -
mean_absolute_percentage_error: 138.5221
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1398 -
mean_absolute_error: 0.2545 - mean_squared_error: 0.1398 - rmse: 0.3697 -
mean_absolute_percentage_error: 147.4671
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1402 -
mean_absolute_error: 0.2549 - mean_squared_error: 0.1402 - rmse: 0.3707 -
mean_absolute_percentage_error: 142.4068
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1394 -
mean_absolute_error: 0.2533 - mean_squared_error: 0.1394 - rmse: 0.3691 -
mean_absolute_percentage_error: 141.9148
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1397 -
mean_absolute_error: 0.2549 - mean_squared_error: 0.1397 - rmse: 0.3706 -
mean_absolute_percentage_error: 137.3307
100/100 [==============================] - 4s 1ms/step - loss: 0.1464 -
mean_absolute_error: 0.2575 - mean_squared_error: 0.1464 - rmse: 0.3769 -
mean_absolute_percentage_error: 156.0544
200/200 [==============================] - 4s 895us/step
No Regularizer chosen
------------------------------------------------------------------------
Training for fold 6 ...
Epoch 1/100
210/210 [==============================] - 4s 1ms/step - loss: 0.3558 -
mean_absolute_error: 0.4527 - mean_squared_error: 0.3558 - rmse: 0.5845 -
mean_absolute_percentage_error: 194.0478
Epoch 2/100
```

```
210/210 [==============================] - 0s 1ms/step - loss: 0.2403 -
mean_absolute_error: 0.3476 - mean_squared_error: 0.2403 - rmse: 0.4850 -
mean_absolute_percentage_error: 172.3148
Epoch 3/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2212 -
mean_absolute_error: 0.3303 - mean_squared_error: 0.2212 - rmse: 0.4666 -
mean_absolute_percentage_error: 173.5111
Epoch 4/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2107 -
mean_absolute_error: 0.3215 - mean_squared_error: 0.2107 - rmse: 0.4551 -
mean_absolute_percentage_error: 169.6963
Epoch 5/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2033 -
mean_absolute_error: 0.3149 - mean_squared_error: 0.2033 - rmse: 0.4466 -
mean_absolute_percentage_error: 166.3336
Epoch 6/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1983 -
mean_absolute_error: 0.3105 - mean_squared_error: 0.1983 - rmse: 0.4415 -
mean_absolute_percentage_error: 168.8435
Epoch 7/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1925 -
mean_absolute_error: 0.3046 - mean_squared_error: 0.1925 - rmse: 0.4344 -
mean_absolute_percentage_error: 161.0052
Epoch 8/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1899 -
mean_absolute_error: 0.3027 - mean_squared_error: 0.1899 - rmse: 0.4329 -
mean_absolute_percentage_error: 160.6937
Epoch 9/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1855 -
mean_absolute_error: 0.2974 - mean_squared_error: 0.1855 - rmse: 0.4274 -
mean_absolute_percentage_error: 157.8519
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1843 -
mean_absolute_error: 0.2971 - mean_squared_error: 0.1843 - rmse: 0.4245 -
mean_absolute_percentage_error: 157.2955
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1822 -
mean_absolute_error: 0.2953 - mean_squared_error: 0.1822 - rmse: 0.4227 -
mean_absolute_percentage_error: 159.7186
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1792 -
mean_absolute_error: 0.2921 - mean_squared_error: 0.1792 - rmse: 0.4199 -
mean_absolute_percentage_error: 154.1278
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1763 -
mean_absolute_error: 0.2895 - mean_squared_error: 0.1763 - rmse: 0.4156 -
mean_absolute_percentage_error: 154.8382
Epoch 14/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1734 -
mean_absolute_error: 0.2870 - mean_squared_error: 0.1734 - rmse: 0.4120 -
mean_absolute_percentage_error: 152.0139
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1710 -
mean_absolute_error: 0.2847 - mean_squared_error: 0.1710 - rmse: 0.4089 -
mean_absolute_percentage_error: 151.0521
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1686 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1686 - rmse: 0.4058 -
mean_absolute_percentage_error: 142.2179
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1679 -
mean_absolute_error: 0.2817 - mean_squared_error: 0.1679 - rmse: 0.4055 -
mean_absolute_percentage_error: 143.7610
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1663 -
mean_absolute_error: 0.2798 - mean_squared_error: 0.1663 - rmse: 0.4043 -
mean_absolute_percentage_error: 146.0945
Epoch 19/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1668 -
mean_absolute_error: 0.2804 - mean_squared_error: 0.1668 - rmse: 0.4032 -
mean_absolute_percentage_error: 140.7484
Epoch 20/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1634 -
mean_absolute_error: 0.2780 - mean_squared_error: 0.1634 - rmse: 0.3999 -
mean_absolute_percentage_error: 143.4048
Epoch 21/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1642 -
mean_absolute_error: 0.2788 - mean_squared_error: 0.1642 - rmse: 0.3999 -
mean_absolute_percentage_error: 145.5599
Epoch 22/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1619 -
mean_absolute_error: 0.2766 - mean_squared_error: 0.1619 - rmse: 0.3977 -
mean_absolute_percentage_error: 144.4341
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1615 -
mean_absolute_error: 0.2758 - mean_squared_error: 0.1615 - rmse: 0.3977 -
mean_absolute_percentage_error: 143.7948
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1612 -
mean_absolute_error: 0.2754 - mean_squared_error: 0.1612 - rmse: 0.3971 -
mean_absolute_percentage_error: 137.8648
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1582 -
mean_absolute_error: 0.2726 - mean_squared_error: 0.1582 - rmse: 0.3941 -
mean_absolute_percentage_error: 141.0917
Epoch 26/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1596 -
mean_absolute_error: 0.2741 - mean_squared_error: 0.1596 - rmse: 0.3952 -
mean_absolute_percentage_error: 142.0426
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1579 -
mean_absolute_error: 0.2721 - mean_squared_error: 0.1579 - rmse: 0.3929 -
mean_absolute_percentage_error: 139.8335
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1585 -
mean_absolute_error: 0.2735 - mean_squared_error: 0.1585 - rmse: 0.3940 -
mean_absolute_percentage_error: 139.4179
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1561 -
mean_absolute_error: 0.2708 - mean_squared_error: 0.1561 - rmse: 0.3905 -
mean_absolute_percentage_error: 141.7824
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1557 -
mean_absolute_error: 0.2700 - mean_squared_error: 0.1557 - rmse: 0.3903 -
mean_absolute_percentage_error: 137.3898
Epoch 31/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1568 -
mean_absolute_error: 0.2723 - mean_squared_error: 0.1568 - rmse: 0.3924 -
mean_absolute_percentage_error: 136.9627
Epoch 32/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1548 -
mean_absolute_error: 0.2692 - mean_squared_error: 0.1548 - rmse: 0.3895 -
mean_absolute_percentage_error: 136.8053
Epoch 33/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1550 -
mean_absolute_error: 0.2701 - mean_squared_error: 0.1550 - rmse: 0.3894 -
mean_absolute_percentage_error: 138.3861
Epoch 34/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1541 -
mean_absolute_error: 0.2680 - mean_squared_error: 0.1541 - rmse: 0.3881 -
mean_absolute_percentage_error: 136.1685
Epoch 35/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1530 -
mean_absolute_error: 0.2663 - mean_squared_error: 0.1530 - rmse: 0.3880 -
mean_absolute_percentage_error: 137.8170
Epoch 36/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1519 -
mean_absolute_error: 0.2669 - mean_squared_error: 0.1519 - rmse: 0.3854 -
mean_absolute_percentage_error: 134.3092
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1535 -
mean_absolute_error: 0.2684 - mean_squared_error: 0.1535 - rmse: 0.3876 -
mean_absolute_percentage_error: 133.8945
Epoch 38/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1532 -
mean_absolute_error: 0.2677 - mean_squared_error: 0.1532 - rmse: 0.3872 -
mean_absolute_percentage_error: 139.0787
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1519 -
mean_absolute_error: 0.2664 - mean_squared_error: 0.1519 - rmse: 0.3864 -
mean_absolute_percentage_error: 136.0192
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1509 -
mean_absolute_error: 0.2663 - mean_squared_error: 0.1509 - rmse: 0.3852 -
mean_absolute_percentage_error: 138.0126
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1506 -
mean_absolute_error: 0.2649 - mean_squared_error: 0.1506 - rmse: 0.3838 -
mean_absolute_percentage_error: 135.5347
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1523 -
mean_absolute_error: 0.2665 - mean_squared_error: 0.1523 - rmse: 0.3863 -
mean_absolute_percentage_error: 136.1270
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1500 -
mean_absolute_error: 0.2640 - mean_squared_error: 0.1500 - rmse: 0.3832 -
mean_absolute_percentage_error: 137.5018
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1503 -
mean_absolute_error: 0.2644 - mean_squared_error: 0.1503 - rmse: 0.3831 -
mean_absolute_percentage_error: 137.2681
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1486 -
mean_absolute_error: 0.2628 - mean_squared_error: 0.1486 - rmse: 0.3802 -
mean_absolute_percentage_error: 133.1050
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1503 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1503 - rmse: 0.3835 -
mean_absolute_percentage_error: 132.5095
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1495 -
mean_absolute_error: 0.2642 - mean_squared_error: 0.1495 - rmse: 0.3826 -
mean_absolute_percentage_error: 136.5627
Epoch 48/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1484 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1484 - rmse: 0.3813 -
mean_absolute_percentage_error: 136.1638
Epoch 49/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1482 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1482 - rmse: 0.3807 -
mean_absolute_percentage_error: 133.1449
Epoch 50/100
```

```
210/210 [==============================] - 0s 1ms/step - loss: 0.1474 -
mean_absolute_error: 0.2608 - mean_squared_error: 0.1474 - rmse: 0.3794 -
mean_absolute_percentage_error: 135.2272
Epoch 51/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1445 -
mean_absolute_error: 0.2589 - mean_squared_error: 0.1445 - rmse: 0.3755 -
mean_absolute_percentage_error: 133.9383
Epoch 52/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1461 -
mean_absolute_error: 0.2607 - mean_squared_error: 0.1461 - rmse: 0.3787 -
mean_absolute_percentage_error: 136.1708
Epoch 53/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1478 -
mean_absolute_error: 0.2615 - mean_squared_error: 0.1478 - rmse: 0.3801 -
mean_absolute_percentage_error: 133.1749
Epoch 54/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1467 -
mean_absolute_error: 0.2609 - mean_squared_error: 0.1467 - rmse: 0.3777 -
mean_absolute_percentage_error: 134.3733
Epoch 55/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1463 -
mean_absolute_error: 0.2599 - mean_squared_error: 0.1463 - rmse: 0.3787 -
mean_absolute_percentage_error: 134.8290
Epoch 56/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1450 -
mean_absolute_error: 0.2596 - mean_squared_error: 0.1450 - rmse: 0.3769 -
mean_absolute_percentage_error: 134.0269
Epoch 57/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1447 -
mean_absolute_error: 0.2592 - mean_squared_error: 0.1447 - rmse: 0.3763 -
mean_absolute_percentage_error: 131.1217
Epoch 58/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1431 -
mean_absolute_error: 0.2564 - mean_squared_error: 0.1431 - rmse: 0.3745 -
mean_absolute_percentage_error: 130.9727
Epoch 59/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1439 -
mean_absolute_error: 0.2583 - mean_squared_error: 0.1439 - rmse: 0.3753 -
mean_absolute_percentage_error: 132.0931
Epoch 60/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1443 -
mean_absolute_error: 0.2589 - mean_squared_error: 0.1443 - rmse: 0.3753 -
mean_absolute_percentage_error: 131.4327
Epoch 61/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1433 -
mean_absolute_error: 0.2560 - mean_squared_error: 0.1433 - rmse: 0.3734 -
mean_absolute_percentage_error: 129.7650
Epoch 62/100
```

```
210/210 [==============================] - 0s 1ms/step - loss: 0.1436 -
mean_absolute_error: 0.2579 - mean_squared_error: 0.1436 - rmse: 0.3745 -
mean_absolute_percentage_error: 131.9213
Epoch 63/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1427 -
mean_absolute_error: 0.2580 - mean_squared_error: 0.1427 - rmse: 0.3739 -
mean_absolute_percentage_error: 128.8306
Epoch 64/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1443 -
mean_absolute_error: 0.2586 - mean_squared_error: 0.1443 - rmse: 0.3761 -
mean_absolute_percentage_error: 134.0341
Epoch 65/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1439 -
mean_absolute_error: 0.2591 - mean_squared_error: 0.1439 - rmse: 0.3743 -
mean_absolute_percentage_error: 129.3940
Epoch 66/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1413 -
mean_absolute_error: 0.2565 - mean_squared_error: 0.1413 - rmse: 0.3726 -
mean_absolute_percentage_error: 130.5443
Epoch 67/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1435 -
mean_absolute_error: 0.2578 - mean_squared_error: 0.1435 - rmse: 0.3744 -
mean_absolute_percentage_error: 128.3687
Epoch 68/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1416 -
mean_absolute_error: 0.2562 - mean_squared_error: 0.1416 - rmse: 0.3720 -
mean_absolute_percentage_error: 128.0567
Epoch 69/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1405 -
mean_absolute_error: 0.2552 - mean_squared_error: 0.1405 - rmse: 0.3704 -
mean_absolute_percentage_error: 129.8514
Epoch 70/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1409 -
mean_absolute_error: 0.2554 - mean_squared_error: 0.1409 - rmse: 0.3715 -
mean_absolute_percentage_error: 133.4925
Epoch 71/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1412 -
mean_absolute_error: 0.2555 - mean_squared_error: 0.1412 - rmse: 0.3707 -
mean_absolute_percentage_error: 131.2652
Epoch 72/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1411 -
mean_absolute_error: 0.2565 - mean_squared_error: 0.1411 - rmse: 0.3713 -
mean_absolute_percentage_error: 128.5972
Epoch 73/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1395 -
mean_absolute_error: 0.2543 - mean_squared_error: 0.1395 - rmse: 0.3693 -
mean_absolute_percentage_error: 135.2858
Epoch 74/100
```

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210/210 [==============================] - 0s 1ms/step - loss: 0.1404 -
mean_absolute_error: 0.2552 - mean_squared_error: 0.1404 - rmse: 0.3697 -
mean_absolute_percentage_error: 128.2670
Epoch 75/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1411 -
mean_absolute_error: 0.2563 - mean_squared_error: 0.1411 - rmse: 0.3711 -
mean_absolute_percentage_error: 131.6376
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1398 -
mean_absolute_error: 0.2538 - mean_squared_error: 0.1398 - rmse: 0.3689 -
mean_absolute_percentage_error: 129.1549
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1406 -
mean_absolute_error: 0.2561 - mean_squared_error: 0.1406 - rmse: 0.3701 -
mean_absolute_percentage_error: 133.6484
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1395 -
mean_absolute_error: 0.2540 - mean_squared_error: 0.1395 - rmse: 0.3688 -
mean_absolute_percentage_error: 133.0595
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1379 -
mean_absolute_error: 0.2528 - mean_squared_error: 0.1379 - rmse: 0.3663 -
mean_absolute_percentage_error: 129.3421
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1386 -
mean_absolute_error: 0.2542 - mean_squared_error: 0.1386 - rmse: 0.3683 -
mean_absolute_percentage_error: 129.5918
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1376 -
mean_absolute_error: 0.2522 - mean_squared_error: 0.1376 - rmse: 0.3665 -
mean_absolute_percentage_error: 123.6404
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1392 -
mean_absolute_error: 0.2543 - mean_squared_error: 0.1392 - rmse: 0.3691 -
mean_absolute_percentage_error: 131.6622
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1374 -
mean_absolute_error: 0.2527 - mean_squared_error: 0.1374 - rmse: 0.3656 -
mean_absolute_percentage_error: 129.4836
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1374 -
mean_absolute_error: 0.2524 - mean_squared_error: 0.1374 - rmse: 0.3667 -
mean_absolute_percentage_error: 128.6988
Epoch 85/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1370 -
mean_absolute_error: 0.2529 - mean_squared_error: 0.1370 - rmse: 0.3657 -
mean_absolute_percentage_error: 126.8527
Epoch 86/100
```

```
210/210 [==============================] - 0s 1ms/step - loss: 0.1366 -
mean_absolute_error: 0.2514 - mean_squared_error: 0.1366 - rmse: 0.3650 -
mean_absolute_percentage_error: 128.2346
Epoch 87/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1367 -
mean_absolute_error: 0.2511 - mean_squared_error: 0.1367 - rmse: 0.3650 -
mean_absolute_percentage_error: 126.5391
Epoch 88/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1349 -
mean_absolute_error: 0.2511 - mean_squared_error: 0.1349 - rmse: 0.3630 -
mean_absolute_percentage_error: 126.7076
Epoch 89/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1378 -
mean_absolute_error: 0.2533 - mean_squared_error: 0.1378 - rmse: 0.3664 -
mean_absolute_percentage_error: 125.9376
Epoch 90/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1364 -
mean_absolute_error: 0.2509 - mean_squared_error: 0.1364 - rmse: 0.3650 -
mean_absolute_percentage_error: 125.7420
Epoch 91/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1356 -
mean_absolute_error: 0.2511 - mean_squared_error: 0.1356 - rmse: 0.3639 -
mean_absolute_percentage_error: 128.2444
Epoch 92/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1361 -
mean_absolute_error: 0.2522 - mean_squared_error: 0.1361 - rmse: 0.3647 -
mean_absolute_percentage_error: 125.2059
Epoch 93/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1365 -
mean_absolute_error: 0.2519 - mean_squared_error: 0.1365 - rmse: 0.3660 -
mean_absolute_percentage_error: 125.6590
Epoch 94/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1374 -
mean_absolute_error: 0.2532 - mean_squared_error: 0.1374 - rmse: 0.3668 -
mean_absolute_percentage_error: 126.9741
Epoch 95/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1357 -
mean_absolute_error: 0.2506 - mean_squared_error: 0.1357 - rmse: 0.3631 -
mean_absolute_percentage_error: 128.9905
Epoch 96/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1347 -
mean_absolute_error: 0.2500 - mean_squared_error: 0.1347 - rmse: 0.3632 -
mean_absolute_percentage_error: 125.7791
Epoch 97/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1358 -
mean_absolute_error: 0.2520 - mean_squared_error: 0.1358 - rmse: 0.3637 -
mean_absolute_percentage_error: 125.2880
Epoch 98/100
```

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210/210 [==============================] - 0s 1ms/step - loss: 0.1354 -
mean_absolute_error: 0.2520 - mean_squared_error: 0.1354 - rmse: 0.3634 -
mean_absolute_percentage_error: 129.9825
Epoch 99/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1320 -
mean_absolute_error: 0.2467 - mean_squared_error: 0.1320 - rmse: 0.3596 -
mean_absolute_percentage_error: 124.6327
Epoch 100/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1339 -
mean_absolute_error: 0.2496 - mean_squared_error: 0.1339 - rmse: 0.3621 -
mean_absolute_percentage_error: 127.5525
100/100 [==============================] - 4s 1ms/step - loss: 0.1431 -
mean_absolute_error: 0.2580 - mean_squared_error: 0.1431 - rmse: 0.3735 -
mean_absolute_percentage_error: 169.0812
200/200 [==============================] - 4s 927us/step
No Regularizer chosen
-------------------------------------------------------------------------
Training for fold 7 ...
Epoch 1/100
210/210 [==============================] - 5s 1ms/step - loss: 0.3470 -
mean_absolute_error: 0.4420 - mean_squared_error: 0.3470 - rmse: 0.5774 -
mean_absolute_percentage_error: 210.9819
Epoch 2/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2324 -
mean_absolute_error: 0.3435 - mean_squared_error: 0.2324 - rmse: 0.4787 -
mean_absolute_percentage_error: 197.5409
Epoch 3/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2160 -
mean_absolute_error: 0.3270 - mean_squared_error: 0.2160 - rmse: 0.4599 -
mean_absolute_percentage_error: 189.1863
Epoch 4/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2066 -
mean_absolute_error: 0.3182 - mean_squared_error: 0.2066 - rmse: 0.4505 -
mean_absolute_percentage_error: 193.1259
Epoch 5/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1998 -
mean_absolute_error: 0.3123 - mean_squared_error: 0.1998 - rmse: 0.4426 -
mean_absolute_percentage_error: 188.5987
Epoch 6/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1953 -
mean_absolute_error: 0.3085 - mean_squared_error: 0.1953 - rmse: 0.4382 -
mean_absolute_percentage_error: 184.6232
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1924 -
mean_absolute_error: 0.3053 - mean_squared_error: 0.1924 - rmse: 0.4338 -
mean_absolute_percentage_error: 180.3057
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1861 -
```

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mean_absolute_error: 0.2991 - mean_squared_error: 0.1861 - rmse: 0.4275 -
mean_absolute_percentage_error: 179.6565
Epoch 9/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1854 -
mean_absolute_error: 0.2992 - mean_squared_error: 0.1854 - rmse: 0.4264 -
mean_absolute_percentage_error: 175.1089
Epoch 10/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1809 -
mean_absolute_error: 0.2956 - mean_squared_error: 0.1809 - rmse: 0.4208 -
mean_absolute_percentage_error: 172.2089
Epoch 11/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1779 -
mean_absolute_error: 0.2909 - mean_squared_error: 0.1779 - rmse: 0.4191 -
mean_absolute_percentage_error: 178.1251
Epoch 12/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1765 -
mean_absolute_error: 0.2917 - mean_squared_error: 0.1765 - rmse: 0.4158 -
mean_absolute_percentage_error: 167.4003
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1743 -
mean_absolute_error: 0.2890 - mean_squared_error: 0.1743 - rmse: 0.4133 -
mean_absolute_percentage_error: 171.8749
Epoch 14/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1741 -
mean_absolute_error: 0.2884 - mean_squared_error: 0.1741 - rmse: 0.4129 -
mean_absolute_percentage_error: 165.1222
Epoch 15/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1715 -
mean_absolute_error: 0.2863 - mean_squared_error: 0.1715 - rmse: 0.4095 -
mean_absolute_percentage_error: 167.8351
Epoch 16/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1689 -
mean_absolute_error: 0.2831 - mean_squared_error: 0.1689 - rmse: 0.4066 -
mean_absolute_percentage_error: 167.3514
Epoch 17/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1678 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1678 - rmse: 0.4051 -
mean_absolute_percentage_error: 167.6503
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1665 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1665 - rmse: 0.4039 -
mean_absolute_percentage_error: 164.2205
Epoch 19/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1638 -
mean_absolute_error: 0.2792 - mean_squared_error: 0.1638 - rmse: 0.4010 -
mean_absolute_percentage_error: 168.6917
Epoch 20/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1632 -
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mean_absolute_error: 0.2777 - mean_squared_error: 0.1632 - rmse: 0.3996 -
mean_absolute_percentage_error: 162.2192
Epoch 21/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1627 -
mean_absolute_error: 0.2778 - mean_squared_error: 0.1627 - rmse: 0.3992 -
mean_absolute_percentage_error: 164.5213
Epoch 22/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1628 -
mean_absolute_error: 0.2774 - mean_squared_error: 0.1628 - rmse: 0.4002 -
mean_absolute_percentage_error: 161.8574
Epoch 23/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1611 -
mean_absolute_error: 0.2768 - mean_squared_error: 0.1611 - rmse: 0.3977 -
mean_absolute_percentage_error: 167.1034
Epoch 24/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1618 -
mean_absolute_error: 0.2772 - mean_squared_error: 0.1618 - rmse: 0.3985 -
mean_absolute_percentage_error: 164.9650
Epoch 25/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1606 -
mean_absolute_error: 0.2760 - mean_squared_error: 0.1606 - rmse: 0.3965 -
mean_absolute_percentage_error: 160.1066
Epoch 26/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1596 -
mean_absolute_error: 0.2750 - mean_squared_error: 0.1596 - rmse: 0.3956 -
mean_absolute_percentage_error: 160.9606
Epoch 27/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1589 -
mean_absolute_error: 0.2738 - mean_squared_error: 0.1589 - rmse: 0.3945 -
mean_absolute_percentage_error: 159.2328
Epoch 28/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1580 -
mean_absolute_error: 0.2733 - mean_squared_error: 0.1580 - rmse: 0.3935 -
mean_absolute_percentage_error: 162.3348
Epoch 29/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1562 -
mean_absolute_error: 0.2717 - mean_squared_error: 0.1562 - rmse: 0.3910 -
mean_absolute_percentage_error: 154.4107
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1574 -
mean_absolute_error: 0.2727 - mean_squared_error: 0.1574 - rmse: 0.3931 -
mean_absolute_percentage_error: 158.8287
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1558 -
mean_absolute_error: 0.2713 - mean_squared_error: 0.1558 - rmse: 0.3908 -
mean_absolute_percentage_error: 155.1224
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1550 -
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mean_absolute_error: 0.2710 - mean_squared_error: 0.1550 - rmse: 0.3892 -
mean_absolute_percentage_error: 156.4593
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1539 -
mean_absolute_error: 0.2692 - mean_squared_error: 0.1539 - rmse: 0.3885 -
mean_absolute_percentage_error: 161.0466
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1552 -
mean_absolute_error: 0.2713 - mean_squared_error: 0.1552 - rmse: 0.3894 -
mean_absolute_percentage_error: 157.9797
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1528 -
mean_absolute_error: 0.2679 - mean_squared_error: 0.1528 - rmse: 0.3868 -
mean_absolute_percentage_error: 154.4356
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1549 -
mean_absolute_error: 0.2709 - mean_squared_error: 0.1549 - rmse: 0.3896 -
mean_absolute_percentage_error: 158.5345
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1554 -
mean_absolute_error: 0.2708 - mean_squared_error: 0.1554 - rmse: 0.3897 -
mean_absolute_percentage_error: 155.7719
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1523 -
mean_absolute_error: 0.2677 - mean_squared_error: 0.1523 - rmse: 0.3866 -
mean_absolute_percentage_error: 153.1022
Epoch 39/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1524 -
mean_absolute_error: 0.2680 - mean_squared_error: 0.1524 - rmse: 0.3867 -
mean_absolute_percentage_error: 156.8102
Epoch 40/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1514 -
mean_absolute_error: 0.2664 - mean_squared_error: 0.1514 - rmse: 0.3856 -
mean_absolute_percentage_error: 157.6741
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1506 -
mean_absolute_error: 0.2663 - mean_squared_error: 0.1506 - rmse: 0.3835 -
mean_absolute_percentage_error: 154.7151
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1504 -
mean_absolute_error: 0.2654 - mean_squared_error: 0.1504 - rmse: 0.3838 -
mean_absolute_percentage_error: 154.6254
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1497 -
mean_absolute_error: 0.2659 - mean_squared_error: 0.1497 - rmse: 0.3835 -
mean_absolute_percentage_error: 155.0354
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1478 -
```

```
mean_absolute_error: 0.2635 - mean_squared_error: 0.1478 - rmse: 0.3807 -
mean_absolute_percentage_error: 151.0204
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1495 -
mean_absolute_error: 0.2646 - mean_squared_error: 0.1495 - rmse: 0.3823 -
mean_absolute_percentage_error: 154.6786
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1480 -
mean_absolute_error: 0.2637 - mean_squared_error: 0.1480 - rmse: 0.3805 -
mean_absolute_percentage_error: 155.1809
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1472 -
mean_absolute_error: 0.2626 - mean_squared_error: 0.1472 - rmse: 0.3796 -
mean_absolute_percentage_error: 153.6190
Epoch 48/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1487 -
mean_absolute_error: 0.2644 - mean_squared_error: 0.1487 - rmse: 0.3815 -
mean_absolute_percentage_error: 155.3282
Epoch 49/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1452 -
mean_absolute_error: 0.2609 - mean_squared_error: 0.1452 - rmse: 0.3766 -
mean_absolute_percentage_error: 151.8756
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1462 -
mean_absolute_error: 0.2618 - mean_squared_error: 0.1462 - rmse: 0.3788 -
mean_absolute_percentage_error: 152.1199
Epoch 51/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1460 -
mean_absolute_error: 0.2623 - mean_squared_error: 0.1460 - rmse: 0.3784 -
mean_absolute_percentage_error: 151.5392
Epoch 52/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1448 -
mean_absolute_error: 0.2594 - mean_squared_error: 0.1448 - rmse: 0.3760 -
mean_absolute_percentage_error: 151.0866
Epoch 53/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1442 -
mean_absolute_error: 0.2588 - mean_squared_error: 0.1442 - rmse: 0.3764 -
mean_absolute_percentage_error: 149.9767
Epoch 54/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1471 -
mean_absolute_error: 0.2632 - mean_squared_error: 0.1471 - rmse: 0.3790 -
mean_absolute_percentage_error: 149.6468
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1466 -
mean_absolute_error: 0.2616 - mean_squared_error: 0.1466 - rmse: 0.3799 -
mean_absolute_percentage_error: 149.7382
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1428 -
```

```
mean_absolute_error: 0.2568 - mean_squared_error: 0.1428 - rmse: 0.3737 -
mean_absolute_percentage_error: 147.7728
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1432 -
mean_absolute_error: 0.2581 - mean_squared_error: 0.1432 - rmse: 0.3745 -
mean_absolute_percentage_error: 146.3467
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1452 -
mean_absolute_error: 0.2603 - mean_squared_error: 0.1452 - rmse: 0.3776 -
mean_absolute_percentage_error: 145.3608
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1432 -
mean_absolute_error: 0.2578 - mean_squared_error: 0.1432 - rmse: 0.3741 -
mean_absolute_percentage_error: 148.9918
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1450 -
mean_absolute_error: 0.2608 - mean_squared_error: 0.1450 - rmse: 0.3770 -
mean_absolute_percentage_error: 147.4480
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1414 -
mean_absolute_error: 0.2566 - mean_squared_error: 0.1414 - rmse: 0.3725 -
mean_absolute_percentage_error: 150.2762
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1428 -
mean_absolute_error: 0.2571 - mean_squared_error: 0.1428 - rmse: 0.3734 -
mean_absolute_percentage_error: 148.5358
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1423 -
mean_absolute_error: 0.2573 - mean_squared_error: 0.1423 - rmse: 0.3725 -
mean_absolute_percentage_error: 147.8131
Epoch 64/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1413 -
mean_absolute_error: 0.2556 - mean_squared_error: 0.1413 - rmse: 0.3731 -
mean_absolute_percentage_error: 150.4419
Epoch 65/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1450 -
mean_absolute_error: 0.2611 - mean_squared_error: 0.1450 - rmse: 0.3766 -
mean_absolute_percentage_error: 153.3375
Epoch 66/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1420 -
mean_absolute_error: 0.2566 - mean_squared_error: 0.1420 - rmse: 0.3724 -
mean_absolute_percentage_error: 147.3423
Epoch 67/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1414 -
mean_absolute_error: 0.2556 - mean_squared_error: 0.1414 - rmse: 0.3722 -
mean_absolute_percentage_error: 149.8262
Epoch 68/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1418 -
```

```
mean_absolute_error: 0.2555 - mean_squared_error: 0.1418 - rmse: 0.3727 -
mean_absolute_percentage_error: 146.8265
Epoch 69/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1414 -
mean_absolute_error: 0.2566 - mean_squared_error: 0.1414 - rmse: 0.3714 -
mean_absolute_percentage_error: 144.4737
Epoch 70/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1410 -
mean_absolute_error: 0.2558 - mean_squared_error: 0.1410 - rmse: 0.3716 -
mean_absolute_percentage_error: 147.3879
Epoch 71/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1403 -
mean_absolute_error: 0.2558 - mean_squared_error: 0.1403 - rmse: 0.3696 -
mean_absolute_percentage_error: 150.2336
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1400 -
mean_absolute_error: 0.2541 - mean_squared_error: 0.1400 - rmse: 0.3693 -
mean_absolute_percentage_error: 144.8869
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1395 -
mean_absolute_error: 0.2546 - mean_squared_error: 0.1395 - rmse: 0.3688 -
mean_absolute_percentage_error: 147.0688
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1394 -
mean_absolute_error: 0.2544 - mean_squared_error: 0.1394 - rmse: 0.3691 -
mean_absolute_percentage_error: 142.0790
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1400 -
mean_absolute_error: 0.2537 - mean_squared_error: 0.1400 - rmse: 0.3702 -
mean_absolute_percentage_error: 144.3104
Epoch 76/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1398 -
mean_absolute_error: 0.2553 - mean_squared_error: 0.1398 - rmse: 0.3694 -
mean_absolute_percentage_error: 144.5674
Epoch 77/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1408 -
mean_absolute_error: 0.2551 - mean_squared_error: 0.1408 - rmse: 0.3712 -
mean_absolute_percentage_error: 147.0453
Epoch 78/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1389 -
mean_absolute_error: 0.2538 - mean_squared_error: 0.1389 - rmse: 0.3677 -
mean_absolute_percentage_error: 148.9200
Epoch 79/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1411 -
mean_absolute_error: 0.2555 - mean_squared_error: 0.1411 - rmse: 0.3710 -
mean_absolute_percentage_error: 150.0777
Epoch 80/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1400 -
```

```
mean_absolute_error: 0.2542 - mean_squared_error: 0.1400 - rmse: 0.3696 -
mean_absolute_percentage_error: 145.8307
Epoch 81/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1368 -
mean_absolute_error: 0.2511 - mean_squared_error: 0.1368 - rmse: 0.3659 -
mean_absolute_percentage_error: 145.4838
Epoch 82/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1390 -
mean_absolute_error: 0.2547 - mean_squared_error: 0.1390 - rmse: 0.3684 -
mean_absolute_percentage_error: 144.8699
Epoch 83/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1369 -
mean_absolute_error: 0.2507 - mean_squared_error: 0.1369 - rmse: 0.3652 -
mean_absolute_percentage_error: 140.7372
Epoch 84/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1401 -
mean_absolute_error: 0.2562 - mean_squared_error: 0.1401 - rmse: 0.3709 -
mean_absolute_percentage_error: 146.6829
Epoch 85/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1368 -
mean_absolute_error: 0.2515 - mean_squared_error: 0.1368 - rmse: 0.3664 -
mean_absolute_percentage_error: 142.6037
Epoch 86/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1387 -
mean_absolute_error: 0.2540 - mean_squared_error: 0.1387 - rmse: 0.3691 -
mean_absolute_percentage_error: 144.6277
Epoch 87/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1370 -
mean_absolute_error: 0.2529 - mean_squared_error: 0.1370 - rmse: 0.3664 -
mean_absolute_percentage_error: 143.1093
Epoch 88/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1361 -
mean_absolute_error: 0.2509 - mean_squared_error: 0.1361 - rmse: 0.3640 -
mean_absolute_percentage_error: 144.2912
Epoch 89/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1361 -
mean_absolute_error: 0.2506 - mean_squared_error: 0.1361 - rmse: 0.3646 -
mean_absolute_percentage_error: 148.1655
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1369 -
mean_absolute_error: 0.2510 - mean_squared_error: 0.1369 - rmse: 0.3659 -
mean_absolute_percentage_error: 145.5379
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1368 -
mean_absolute_error: 0.2530 - mean_squared_error: 0.1368 - rmse: 0.3658 -
mean_absolute_percentage_error: 142.9695
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1358 -
```

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mean_absolute_error: 0.2509 - mean_squared_error: 0.1358 - rmse: 0.3649 -
mean_absolute_percentage_error: 141.8378
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1382 -
mean_absolute_error: 0.2521 - mean_squared_error: 0.1382 - rmse: 0.3679 -
mean_absolute_percentage_error: 143.2565
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1361 -
mean_absolute_error: 0.2508 - mean_squared_error: 0.1361 - rmse: 0.3648 -
mean_absolute_percentage_error: 142.1205
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1364 -
mean_absolute_error: 0.2510 - mean_squared_error: 0.1364 - rmse: 0.3649 -
mean_absolute_percentage_error: 141.0318
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1354 -
mean_absolute_error: 0.2497 - mean_squared_error: 0.1354 - rmse: 0.3643 -
mean_absolute_percentage_error: 144.3092
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1363 -
mean_absolute_error: 0.2509 - mean_squared_error: 0.1363 - rmse: 0.3649 -
mean_absolute_percentage_error: 146.4310
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1385 -
mean_absolute_error: 0.2551 - mean_squared_error: 0.1385 - rmse: 0.3685 -
mean_absolute_percentage_error: 138.1072
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1348 -
mean_absolute_error: 0.2495 - mean_squared_error: 0.1348 - rmse: 0.3619 -
mean_absolute_percentage_error: 138.7459
Epoch 100/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1377 -
mean_absolute_error: 0.2527 - mean_squared_error: 0.1377 - rmse: 0.3661 -
mean_absolute_percentage_error: 148.1390
100/100 [==============================] - 4s 1ms/step - loss: 0.1482 -
mean_absolute_error: 0.2654 - mean_squared_error: 0.1482 - rmse: 0.3800 -
mean_absolute_percentage_error: 144.2685
200/200 [==============================] - 4s 884us/step
No Regularizer chosen
------------------------------------------------------------------------
Training for fold 8 ...
Epoch 1/100
210/210 [==============================] - 4s 1ms/step - loss: 0.3347 -
mean_absolute_error: 0.4325 - mean_squared_error: 0.3347 - rmse: 0.5677 -
mean_absolute_percentage_error: 204.2973
Epoch 2/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2312 -
mean_absolute_error: 0.3407 - mean_squared_error: 0.2312 - rmse: 0.4771 -
```

```
mean_absolute_percentage_error: 195.6602
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2150 -
mean_absolute_error: 0.3261 - mean_squared_error: 0.2150 - rmse: 0.4602 -
mean_absolute_percentage_error: 194.0539
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2053 -
mean_absolute_error: 0.3170 - mean_squared_error: 0.2053 - rmse: 0.4493 -
mean_absolute_percentage_error: 195.4936
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1983 -
mean_absolute_error: 0.3108 - mean_squared_error: 0.1983 - rmse: 0.4419 -
mean_absolute_percentage_error: 190.8946
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1924 -
mean_absolute_error: 0.3057 - mean_squared_error: 0.1924 - rmse: 0.4354 -
mean_absolute_percentage_error: 184.2489
Epoch 7/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1889 -
mean_absolute_error: 0.3022 - mean_squared_error: 0.1889 - rmse: 0.4312 -
mean_absolute_percentage_error: 183.8295
Epoch 8/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1845 -
mean_absolute_error: 0.2979 - mean_squared_error: 0.1845 - rmse: 0.4252 -
mean_absolute_percentage_error: 179.9636
Epoch 9/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1826 -
mean_absolute_error: 0.2973 - mean_squared_error: 0.1826 - rmse: 0.4230 -
mean_absolute_percentage_error: 177.4653
Epoch 10/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1812 -
mean_absolute_error: 0.2943 - mean_squared_error: 0.1812 - rmse: 0.4222 -
mean_absolute_percentage_error: 177.2398
Epoch 11/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1773 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1773 - rmse: 0.4183 -
mean_absolute_percentage_error: 174.7270
Epoch 12/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1751 -
mean_absolute_error: 0.2883 - mean_squared_error: 0.1751 - rmse: 0.4153 -
mean_absolute_percentage_error: 173.0781
Epoch 13/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1721 -
mean_absolute_error: 0.2847 - mean_squared_error: 0.1721 - rmse: 0.4099 -
mean_absolute_percentage_error: 167.1897
Epoch 14/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1722 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1722 - rmse: 0.4104 -
```

```
mean_absolute_percentage_error: 170.1516
Epoch 15/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1708 -
mean_absolute_error: 0.2843 - mean_squared_error: 0.1708 - rmse: 0.4091 -
mean_absolute_percentage_error: 165.7874
Epoch 16/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1695 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1695 - rmse: 0.4075 -
mean_absolute_percentage_error: 166.6888
Epoch 17/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1706 -
mean_absolute_error: 0.2837 - mean_squared_error: 0.1706 - rmse: 0.4089 -
mean_absolute_percentage_error: 160.6780
Epoch 18/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1658 -
mean_absolute_error: 0.2779 - mean_squared_error: 0.1658 - rmse: 0.4028 -
mean_absolute_percentage_error: 164.8369
Epoch 19/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1651 -
mean_absolute_error: 0.2785 - mean_squared_error: 0.1651 - rmse: 0.4018 -
mean_absolute_percentage_error: 158.8259
Epoch 20/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1682 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1682 - rmse: 0.4065 -
mean_absolute_percentage_error: 155.8376
Epoch 21/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1634 -
mean_absolute_error: 0.2760 - mean_squared_error: 0.1634 - rmse: 0.3993 -
mean_absolute_percentage_error: 160.5161
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1621 -
mean_absolute_error: 0.2753 - mean_squared_error: 0.1621 - rmse: 0.3994 -
mean_absolute_percentage_error: 160.9921
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1619 -
mean_absolute_error: 0.2746 - mean_squared_error: 0.1619 - rmse: 0.3973 -
mean_absolute_percentage_error: 159.2410
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1614 -
mean_absolute_error: 0.2751 - mean_squared_error: 0.1614 - rmse: 0.3976 -
mean_absolute_percentage_error: 156.0599
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1597 -
mean_absolute_error: 0.2726 - mean_squared_error: 0.1597 - rmse: 0.3957 -
mean_absolute_percentage_error: 160.0842
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1626 -
mean_absolute_error: 0.2764 - mean_squared_error: 0.1626 - rmse: 0.3986 -
```

```
mean_absolute_percentage_error: 158.8158
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1617 -
mean_absolute_error: 0.2749 - mean_squared_error: 0.1617 - rmse: 0.3982 -
mean_absolute_percentage_error: 158.0806
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1596 -
mean_absolute_error: 0.2721 - mean_squared_error: 0.1596 - rmse: 0.3950 -
mean_absolute_percentage_error: 160.2419
Epoch 29/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1569 -
mean_absolute_error: 0.2698 - mean_squared_error: 0.1569 - rmse: 0.3916 -
mean_absolute_percentage_error: 156.8920
Epoch 30/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1568 -
mean_absolute_error: 0.2697 - mean_squared_error: 0.1568 - rmse: 0.3922 -
mean_absolute_percentage_error: 156.3204
Epoch 31/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1585 -
mean_absolute_error: 0.2715 - mean_squared_error: 0.1585 - rmse: 0.3941 -
mean_absolute_percentage_error: 154.9758
Epoch 32/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1564 -
mean_absolute_error: 0.2697 - mean_squared_error: 0.1564 - rmse: 0.3912 -
mean_absolute_percentage_error: 157.0665
Epoch 33/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1565 -
mean_absolute_error: 0.2699 - mean_squared_error: 0.1565 - rmse: 0.3907 -
mean_absolute_percentage_error: 153.7940
Epoch 34/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1542 -
mean_absolute_error: 0.2669 - mean_squared_error: 0.1542 - rmse: 0.3890 -
mean_absolute_percentage_error: 156.1935
Epoch 35/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1535 -
mean_absolute_error: 0.2663 - mean_squared_error: 0.1535 - rmse: 0.3883 -
mean_absolute_percentage_error: 155.6927
Epoch 36/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1546 -
mean_absolute_error: 0.2678 - mean_squared_error: 0.1546 - rmse: 0.3885 -
mean_absolute_percentage_error: 151.8164
Epoch 37/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1531 -
mean_absolute_error: 0.2660 - mean_squared_error: 0.1531 - rmse: 0.3872 -
mean_absolute_percentage_error: 152.8384
Epoch 38/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1555 -
mean_absolute_error: 0.2693 - mean_squared_error: 0.1555 - rmse: 0.3899 -
```

```
mean_absolute_percentage_error: 153.7139
Epoch 39/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1524 -
mean_absolute_error: 0.2653 - mean_squared_error: 0.1524 - rmse: 0.3868 -
mean_absolute_percentage_error: 147.9750
Epoch 40/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1532 -
mean_absolute_error: 0.2666 - mean_squared_error: 0.1532 - rmse: 0.3876 -
mean_absolute_percentage_error: 155.7012
Epoch 41/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1520 -
mean_absolute_error: 0.2652 - mean_squared_error: 0.1520 - rmse: 0.3853 -
mean_absolute_percentage_error: 157.0475
Epoch 42/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1514 -
mean_absolute_error: 0.2641 - mean_squared_error: 0.1514 - rmse: 0.3853 -
mean_absolute_percentage_error: 149.4557
Epoch 43/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1536 -
mean_absolute_error: 0.2653 - mean_squared_error: 0.1536 - rmse: 0.3875 -
mean_absolute_percentage_error: 159.3902
Epoch 44/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1495 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1495 - rmse: 0.3825 -
mean_absolute_percentage_error: 150.5976
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1491 -
mean_absolute_error: 0.2626 - mean_squared_error: 0.1491 - rmse: 0.3819 -
mean_absolute_percentage_error: 148.6004
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1515 -
mean_absolute_error: 0.2642 - mean_squared_error: 0.1515 - rmse: 0.3857 -
mean_absolute_percentage_error: 154.3445
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1501 -
mean_absolute_error: 0.2627 - mean_squared_error: 0.1501 - rmse: 0.3833 -
mean_absolute_percentage_error: 155.3073
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1481 -
mean_absolute_error: 0.2623 - mean_squared_error: 0.1481 - rmse: 0.3809 -
mean_absolute_percentage_error: 148.3573
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1479 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1479 - rmse: 0.3802 -
mean_absolute_percentage_error: 151.2680
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1493 -
mean_absolute_error: 0.2617 - mean_squared_error: 0.1493 - rmse: 0.3825 -
```

```
mean_absolute_percentage_error: 154.5809
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1486 -
mean_absolute_error: 0.2620 - mean_squared_error: 0.1486 - rmse: 0.3809 -
mean_absolute_percentage_error: 148.5118
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1477 -
mean_absolute_error: 0.2608 - mean_squared_error: 0.1477 - rmse: 0.3789 -
mean_absolute_percentage_error: 151.9129
Epoch 53/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1466 -
mean_absolute_error: 0.2597 - mean_squared_error: 0.1466 - rmse: 0.3782 -
mean_absolute_percentage_error: 146.4118
Epoch 54/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1468 -
mean_absolute_error: 0.2603 - mean_squared_error: 0.1468 - rmse: 0.3784 -
mean_absolute_percentage_error: 149.7557
Epoch 55/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1475 -
mean_absolute_error: 0.2604 - mean_squared_error: 0.1475 - rmse: 0.3794 -
mean_absolute_percentage_error: 149.6932
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1473 -
mean_absolute_error: 0.2598 - mean_squared_error: 0.1473 - rmse: 0.3801 -
mean_absolute_percentage_error: 147.0922
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1461 -
mean_absolute_error: 0.2596 - mean_squared_error: 0.1461 - rmse: 0.3788 -
mean_absolute_percentage_error: 146.7129
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1463 -
mean_absolute_error: 0.2599 - mean_squared_error: 0.1463 - rmse: 0.3781 -
mean_absolute_percentage_error: 145.0925
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1442 -
mean_absolute_error: 0.2579 - mean_squared_error: 0.1442 - rmse: 0.3755 -
mean_absolute_percentage_error: 149.5822
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1454 -
mean_absolute_error: 0.2587 - mean_squared_error: 0.1454 - rmse: 0.3766 -
mean_absolute_percentage_error: 147.6727
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1461 -
mean_absolute_error: 0.2589 - mean_squared_error: 0.1461 - rmse: 0.3781 -
mean_absolute_percentage_error: 147.7593
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1447 -
mean_absolute_error: 0.2580 - mean_squared_error: 0.1447 - rmse: 0.3764 -
```

```
mean_absolute_percentage_error: 146.7249
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1459 -
mean_absolute_error: 0.2587 - mean_squared_error: 0.1459 - rmse: 0.3770 -
mean_absolute_percentage_error: 146.5440
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1453 -
mean_absolute_error: 0.2595 - mean_squared_error: 0.1453 - rmse: 0.3767 -
mean_absolute_percentage_error: 147.5717
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1443 -
mean_absolute_error: 0.2576 - mean_squared_error: 0.1443 - rmse: 0.3755 -
mean_absolute_percentage_error: 148.6430
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1443 -
mean_absolute_error: 0.2572 - mean_squared_error: 0.1443 - rmse: 0.3756 -
mean_absolute_percentage_error: 142.9017
Epoch 67/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1444 -
mean_absolute_error: 0.2582 - mean_squared_error: 0.1444 - rmse: 0.3755 -
mean_absolute_percentage_error: 150.4604
Epoch 68/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1446 -
mean_absolute_error: 0.2583 - mean_squared_error: 0.1446 - rmse: 0.3763 -
mean_absolute_percentage_error: 144.7222
Epoch 69/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1422 -
mean_absolute_error: 0.2561 - mean_squared_error: 0.1422 - rmse: 0.3734 -
mean_absolute_percentage_error: 144.2758
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1426 -
mean_absolute_error: 0.2557 - mean_squared_error: 0.1426 - rmse: 0.3732 -
mean_absolute_percentage_error: 148.5273
Epoch 71/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1430 -
mean_absolute_error: 0.2568 - mean_squared_error: 0.1430 - rmse: 0.3745 -
mean_absolute_percentage_error: 146.4878
Epoch 72/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1417 -
mean_absolute_error: 0.2549 - mean_squared_error: 0.1417 - rmse: 0.3723 -
mean_absolute_percentage_error: 146.3911
Epoch 73/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1421 -
mean_absolute_error: 0.2555 - mean_squared_error: 0.1421 - rmse: 0.3722 -
mean_absolute_percentage_error: 152.8101
Epoch 74/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1423 -
mean_absolute_error: 0.2553 - mean_squared_error: 0.1423 - rmse: 0.3713 -
```

```
mean_absolute_percentage_error: 145.8097
Epoch 75/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1396 -
mean_absolute_error: 0.2525 - mean_squared_error: 0.1396 - rmse: 0.3693 -
mean_absolute_percentage_error: 149.2691
Epoch 76/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1415 -
mean_absolute_error: 0.2549 - mean_squared_error: 0.1415 - rmse: 0.3726 -
mean_absolute_percentage_error: 144.4743
Epoch 77/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1396 -
mean_absolute_error: 0.2526 - mean_squared_error: 0.1396 - rmse: 0.3695 -
mean_absolute_percentage_error: 149.9173
Epoch 78/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1423 -
mean_absolute_error: 0.2563 - mean_squared_error: 0.1423 - rmse: 0.3729 -
mean_absolute_percentage_error: 146.5427
Epoch 79/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1404 -
mean_absolute_error: 0.2530 - mean_squared_error: 0.1404 - rmse: 0.3700 -
mean_absolute_percentage_error: 146.7976
Epoch 80/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1418 -
mean_absolute_error: 0.2553 - mean_squared_error: 0.1418 - rmse: 0.3725 -
mean_absolute_percentage_error: 149.7230
Epoch 81/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1402 -
mean_absolute_error: 0.2545 - mean_squared_error: 0.1402 - rmse: 0.3704 -
mean_absolute_percentage_error: 142.4838
Epoch 82/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1400 -
mean_absolute_error: 0.2539 - mean_squared_error: 0.1400 - rmse: 0.3704 -
mean_absolute_percentage_error: 145.4891
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1395 -
mean_absolute_error: 0.2532 - mean_squared_error: 0.1395 - rmse: 0.3698 -
mean_absolute_percentage_error: 145.1017
Epoch 84/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1405 -
mean_absolute_error: 0.2542 - mean_squared_error: 0.1405 - rmse: 0.3709 -
mean_absolute_percentage_error: 143.1940
Epoch 85/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1375 -
mean_absolute_error: 0.2510 - mean_squared_error: 0.1375 - rmse: 0.3653 -
mean_absolute_percentage_error: 143.7837
Epoch 86/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1401 -
mean_absolute_error: 0.2537 - mean_squared_error: 0.1401 - rmse: 0.3700 -
```

```
mean_absolute_percentage_error: 146.7952
Epoch 87/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1378 -
mean_absolute_error: 0.2520 - mean_squared_error: 0.1378 - rmse: 0.3664 -
mean_absolute_percentage_error: 146.9207
Epoch 88/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1387 -
mean_absolute_error: 0.2526 - mean_squared_error: 0.1387 - rmse: 0.3677 -
mean_absolute_percentage_error: 141.8262
Epoch 89/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1383 -
mean_absolute_error: 0.2521 - mean_squared_error: 0.1383 - rmse: 0.3666 -
mean_absolute_percentage_error: 146.5054
Epoch 90/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1373 -
mean_absolute_error: 0.2505 - mean_squared_error: 0.1373 - rmse: 0.3664 -
mean_absolute_percentage_error: 145.1319
Epoch 91/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1359 -
mean_absolute_error: 0.2501 - mean_squared_error: 0.1359 - rmse: 0.3636 -
mean_absolute_percentage_error: 141.0463
Epoch 92/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1387 -
mean_absolute_error: 0.2523 - mean_squared_error: 0.1387 - rmse: 0.3677 -
mean_absolute_percentage_error: 140.4143
Epoch 93/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1368 -
mean_absolute_error: 0.2504 - mean_squared_error: 0.1368 - rmse: 0.3651 -
mean_absolute_percentage_error: 143.7058
Epoch 94/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1386 -
mean_absolute_error: 0.2525 - mean_squared_error: 0.1386 - rmse: 0.3675 -
mean_absolute_percentage_error: 140.9053
Epoch 95/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1397 -
mean_absolute_error: 0.2525 - mean_squared_error: 0.1397 - rmse: 0.3694 -
mean_absolute_percentage_error: 142.4788
Epoch 96/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1389 -
mean_absolute_error: 0.2535 - mean_squared_error: 0.1389 - rmse: 0.3682 -
mean_absolute_percentage_error: 139.2401
Epoch 97/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1356 -
mean_absolute_error: 0.2493 - mean_squared_error: 0.1356 - rmse: 0.3646 -
mean_absolute_percentage_error: 146.6712
Epoch 98/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1373 -
mean_absolute_error: 0.2513 - mean_squared_error: 0.1373 - rmse: 0.3668 -
```

```
mean_absolute_percentage_error: 143.0993
Epoch 99/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1364 -
mean_absolute_error: 0.2504 - mean_squared_error: 0.1364 - rmse: 0.3657 -
mean_absolute_percentage_error: 142.2045
Epoch 100/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1358 -
mean_absolute_error: 0.2494 - mean_squared_error: 0.1358 - rmse: 0.3642 -
mean_absolute_percentage_error: 144.5691
100/100 [==============================] - 4s 1ms/step - loss: 0.1478 -
mean_absolute_error: 0.2524 - mean_squared_error: 0.1478 - rmse: 0.3777 -
mean_absolute_percentage_error: 140.9209
200/200 [==============================] - 4s 1ms/step
No Regularizer chosen
--------------------------------------------------------------------------------
Training for fold 9 ...
Epoch 1/100
210/210 [==============================] - 5s 2ms/step - loss: 0.3354 -
mean_absolute_error: 0.4335 - mean_squared_error: 0.3354 - rmse: 0.5687 -
mean_absolute_percentage_error: 201.6494
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2331 -
mean_absolute_error: 0.3443 - mean_squared_error: 0.2331 - rmse: 0.4787 -
mean_absolute_percentage_error: 195.6796
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2159 -
mean_absolute_error: 0.3280 - mean_squared_error: 0.2159 - rmse: 0.4612 -
mean_absolute_percentage_error: 195.2400
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2077 -
mean_absolute_error: 0.3201 - mean_squared_error: 0.2077 - rmse: 0.4520 -
mean_absolute_percentage_error: 193.9327
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1998 -
mean_absolute_error: 0.3130 - mean_squared_error: 0.1998 - rmse: 0.4427 -
mean_absolute_percentage_error: 192.8934
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1943 -
mean_absolute_error: 0.3092 - mean_squared_error: 0.1943 - rmse: 0.4367 -
mean_absolute_percentage_error: 182.9797
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1903 -
mean_absolute_error: 0.3054 - mean_squared_error: 0.1903 - rmse: 0.4322 -
mean_absolute_percentage_error: 181.8608
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1877 -
mean_absolute_error: 0.3030 - mean_squared_error: 0.1877 - rmse: 0.4285 -
mean_absolute_percentage_error: 178.2386
```

```
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1830 -
mean_absolute_error: 0.2983 - mean_squared_error: 0.1830 - rmse: 0.4243 -
mean_absolute_percentage_error: 179.4143
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1813 -
mean_absolute_error: 0.2970 - mean_squared_error: 0.1813 - rmse: 0.4216 -
mean_absolute_percentage_error: 173.0069
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1791 -
mean_absolute_error: 0.2941 - mean_squared_error: 0.1791 - rmse: 0.4184 -
mean_absolute_percentage_error: 171.9644
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1761 -
mean_absolute_error: 0.2920 - mean_squared_error: 0.1761 - rmse: 0.4152 -
mean_absolute_percentage_error: 171.9234
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1741 -
mean_absolute_error: 0.2891 - mean_squared_error: 0.1741 - rmse: 0.4141 -
mean_absolute_percentage_error: 167.0815
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1729 -
mean_absolute_error: 0.2885 - mean_squared_error: 0.1729 - rmse: 0.4117 -
mean_absolute_percentage_error: 164.0967
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1719 -
mean_absolute_error: 0.2883 - mean_squared_error: 0.1719 - rmse: 0.4105 -
mean_absolute_percentage_error: 166.7133
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1688 -
mean_absolute_error: 0.2844 - mean_squared_error: 0.1688 - rmse: 0.4072 -
mean_absolute_percentage_error: 166.0267
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1675 -
mean_absolute_error: 0.2823 - mean_squared_error: 0.1675 - rmse: 0.4052 -
mean_absolute_percentage_error: 162.9152
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1663 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1663 - rmse: 0.4027 -
mean_absolute_percentage_error: 161.2270
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1661 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1661 - rmse: 0.4029 -
mean_absolute_percentage_error: 165.2335
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1644 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1644 - rmse: 0.4019 -
mean_absolute_percentage_error: 162.9980
```

```
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1645 -
mean_absolute_error: 0.2798 - mean_squared_error: 0.1645 - rmse: 0.4013 -
mean_absolute_percentage_error: 163.8517
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1624 -
mean_absolute_error: 0.2774 - mean_squared_error: 0.1624 - rmse: 0.3993 -
mean_absolute_percentage_error: 158.5244
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1615 -
mean_absolute_error: 0.2763 - mean_squared_error: 0.1615 - rmse: 0.3982 -
mean_absolute_percentage_error: 160.7800
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1616 -
mean_absolute_error: 0.2770 - mean_squared_error: 0.1616 - rmse: 0.3977 -
mean_absolute_percentage_error: 158.5023
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1611 -
mean_absolute_error: 0.2768 - mean_squared_error: 0.1611 - rmse: 0.3975 -
mean_absolute_percentage_error: 158.4009
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1605 -
mean_absolute_error: 0.2762 - mean_squared_error: 0.1605 - rmse: 0.3962 -
mean_absolute_percentage_error: 158.3193
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1586 -
mean_absolute_error: 0.2733 - mean_squared_error: 0.1586 - rmse: 0.3946 -
mean_absolute_percentage_error: 158.1292
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1584 -
mean_absolute_error: 0.2733 - mean_squared_error: 0.1584 - rmse: 0.3934 -
mean_absolute_percentage_error: 162.6924
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1582 -
mean_absolute_error: 0.2738 - mean_squared_error: 0.1582 - rmse: 0.3934 -
mean_absolute_percentage_error: 154.7280
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1572 -
mean_absolute_error: 0.2740 - mean_squared_error: 0.1572 - rmse: 0.3918 -
mean_absolute_percentage_error: 162.0612
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1592 -
mean_absolute_error: 0.2729 - mean_squared_error: 0.1592 - rmse: 0.3950 -
mean_absolute_percentage_error: 158.6973
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1571 -
mean_absolute_error: 0.2733 - mean_squared_error: 0.1571 - rmse: 0.3915 -
mean_absolute_percentage_error: 157.7663
```

```
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1559 -
mean_absolute_error: 0.2709 - mean_squared_error: 0.1559 - rmse: 0.3910 -
mean_absolute_percentage_error: 153.9297
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1545 -
mean_absolute_error: 0.2702 - mean_squared_error: 0.1545 - rmse: 0.3889 -
mean_absolute_percentage_error: 157.7973
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1560 -
mean_absolute_error: 0.2707 - mean_squared_error: 0.1560 - rmse: 0.3911 -
mean_absolute_percentage_error: 156.0068
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1537 -
mean_absolute_error: 0.2692 - mean_squared_error: 0.1537 - rmse: 0.3879 -
mean_absolute_percentage_error: 157.6227
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1527 -
mean_absolute_error: 0.2685 - mean_squared_error: 0.1527 - rmse: 0.3866 -
mean_absolute_percentage_error: 152.7708
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1545 -
mean_absolute_error: 0.2698 - mean_squared_error: 0.1545 - rmse: 0.3884 -
mean_absolute_percentage_error: 153.5330
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1537 -
mean_absolute_error: 0.2688 - mean_squared_error: 0.1537 - rmse: 0.3867 -
mean_absolute_percentage_error: 154.4151
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1547 -
mean_absolute_error: 0.2688 - mean_squared_error: 0.1547 - rmse: 0.3894 -
mean_absolute_percentage_error: 151.8820
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1536 -
mean_absolute_error: 0.2687 - mean_squared_error: 0.1536 - rmse: 0.3872 -
mean_absolute_percentage_error: 152.0494
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1502 -
mean_absolute_error: 0.2644 - mean_squared_error: 0.1502 - rmse: 0.3836 -
mean_absolute_percentage_error: 153.5695
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1510 -
mean_absolute_error: 0.2652 - mean_squared_error: 0.1510 - rmse: 0.3841 -
mean_absolute_percentage_error: 151.5406
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1508 -
mean_absolute_error: 0.2657 - mean_squared_error: 0.1508 - rmse: 0.3842 -
mean_absolute_percentage_error: 153.4555
```

```
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1494 -
mean_absolute_error: 0.2644 - mean_squared_error: 0.1494 - rmse: 0.3822 -
mean_absolute_percentage_error: 150.6677
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1502 -
mean_absolute_error: 0.2656 - mean_squared_error: 0.1502 - rmse: 0.3832 -
mean_absolute_percentage_error: 149.6883
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1499 -
mean_absolute_error: 0.2639 - mean_squared_error: 0.1499 - rmse: 0.3841 -
mean_absolute_percentage_error: 150.8288
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1508 -
mean_absolute_error: 0.2654 - mean_squared_error: 0.1508 - rmse: 0.3841 -
mean_absolute_percentage_error: 149.1413
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1492 -
mean_absolute_error: 0.2643 - mean_squared_error: 0.1492 - rmse: 0.3817 -
mean_absolute_percentage_error: 148.9031
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1480 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1480 - rmse: 0.3801 -
mean_absolute_percentage_error: 151.9529
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1484 -
mean_absolute_error: 0.2629 - mean_squared_error: 0.1484 - rmse: 0.3813 -
mean_absolute_percentage_error: 150.4398
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1472 -
mean_absolute_error: 0.2619 - mean_squared_error: 0.1472 - rmse: 0.3794 -
mean_absolute_percentage_error: 149.0490
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1469 -
mean_absolute_error: 0.2623 - mean_squared_error: 0.1469 - rmse: 0.3794 -
mean_absolute_percentage_error: 149.6767
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1516 -
mean_absolute_error: 0.2661 - mean_squared_error: 0.1516 - rmse: 0.3854 -
mean_absolute_percentage_error: 151.3466
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1473 -
mean_absolute_error: 0.2615 - mean_squared_error: 0.1473 - rmse: 0.3782 -
mean_absolute_percentage_error: 151.2421
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1469 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1469 - rmse: 0.3788 -
mean_absolute_percentage_error: 149.4099
```

```
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1480 -
mean_absolute_error: 0.2627 - mean_squared_error: 0.1480 - rmse: 0.3815 -
mean_absolute_percentage_error: 153.2579
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1448 -
mean_absolute_error: 0.2597 - mean_squared_error: 0.1448 - rmse: 0.3758 -
mean_absolute_percentage_error: 152.1030
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1457 -
mean_absolute_error: 0.2612 - mean_squared_error: 0.1457 - rmse: 0.3775 -
mean_absolute_percentage_error: 151.9333
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1446 -
mean_absolute_error: 0.2592 - mean_squared_error: 0.1446 - rmse: 0.3758 -
mean_absolute_percentage_error: 146.2392
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1450 -
mean_absolute_error: 0.2594 - mean_squared_error: 0.1450 - rmse: 0.3767 -
mean_absolute_percentage_error: 146.1755
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1458 -
mean_absolute_error: 0.2609 - mean_squared_error: 0.1458 - rmse: 0.3776 -
mean_absolute_percentage_error: 146.6614
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1463 -
mean_absolute_error: 0.2608 - mean_squared_error: 0.1463 - rmse: 0.3788 -
mean_absolute_percentage_error: 147.3549
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1448 -
mean_absolute_error: 0.2600 - mean_squared_error: 0.1448 - rmse: 0.3769 -
mean_absolute_percentage_error: 144.8340
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1430 -
mean_absolute_error: 0.2573 - mean_squared_error: 0.1430 - rmse: 0.3736 -
mean_absolute_percentage_error: 149.4855
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1437 -
mean_absolute_error: 0.2581 - mean_squared_error: 0.1437 - rmse: 0.3754 -
mean_absolute_percentage_error: 150.0436
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1425 -
mean_absolute_error: 0.2569 - mean_squared_error: 0.1425 - rmse: 0.3724 -
mean_absolute_percentage_error: 148.1022
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1444 -
mean_absolute_error: 0.2588 - mean_squared_error: 0.1444 - rmse: 0.3750 -
mean_absolute_percentage_error: 150.4748
```

```
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1430 -
mean_absolute_error: 0.2573 - mean_squared_error: 0.1430 - rmse: 0.3745 -
mean_absolute_percentage_error: 146.3486
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1426 -
mean_absolute_error: 0.2579 - mean_squared_error: 0.1426 - rmse: 0.3731 -
mean_absolute_percentage_error: 149.7085
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1419 -
mean_absolute_error: 0.2564 - mean_squared_error: 0.1419 - rmse: 0.3728 -
mean_absolute_percentage_error: 146.1456
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1444 -
mean_absolute_error: 0.2580 - mean_squared_error: 0.1444 - rmse: 0.3764 -
mean_absolute_percentage_error: 149.8297
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1446 -
mean_absolute_error: 0.2592 - mean_squared_error: 0.1446 - rmse: 0.3762 -
mean_absolute_percentage_error: 145.8341
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1428 -
mean_absolute_error: 0.2570 - mean_squared_error: 0.1428 - rmse: 0.3736 -
mean_absolute_percentage_error: 144.3728
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1431 -
mean_absolute_error: 0.2574 - mean_squared_error: 0.1431 - rmse: 0.3737 -
mean_absolute_percentage_error: 148.5270
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1417 -
mean_absolute_error: 0.2550 - mean_squared_error: 0.1417 - rmse: 0.3725 -
mean_absolute_percentage_error: 148.0144
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1418 -
mean_absolute_error: 0.2564 - mean_squared_error: 0.1418 - rmse: 0.3727 -
mean_absolute_percentage_error: 146.6368
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1423 -
mean_absolute_error: 0.2573 - mean_squared_error: 0.1423 - rmse: 0.3739 -
mean_absolute_percentage_error: 147.8502
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1410 -
mean_absolute_error: 0.2549 - mean_squared_error: 0.1410 - rmse: 0.3716 -
mean_absolute_percentage_error: 141.0946
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1405 -
mean_absolute_error: 0.2555 - mean_squared_error: 0.1405 - rmse: 0.3699 -
mean_absolute_percentage_error: 145.6927
```

```
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1417 -
mean_absolute_error: 0.2557 - mean_squared_error: 0.1417 - rmse: 0.3717 -
mean_absolute_percentage_error: 147.1301
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1396 -
mean_absolute_error: 0.2532 - mean_squared_error: 0.1396 - rmse: 0.3689 -
mean_absolute_percentage_error: 142.7997
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1404 -
mean_absolute_error: 0.2551 - mean_squared_error: 0.1404 - rmse: 0.3698 -
mean_absolute_percentage_error: 147.2738
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1417 -
mean_absolute_error: 0.2561 - mean_squared_error: 0.1417 - rmse: 0.3724 -
mean_absolute_percentage_error: 146.0665
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1384 -
mean_absolute_error: 0.2525 - mean_squared_error: 0.1384 - rmse: 0.3681 -
mean_absolute_percentage_error: 146.1413
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1407 -
mean_absolute_error: 0.2553 - mean_squared_error: 0.1407 - rmse: 0.3709 -
mean_absolute_percentage_error: 144.9818
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1411 -
mean_absolute_error: 0.2559 - mean_squared_error: 0.1411 - rmse: 0.3715 -
mean_absolute_percentage_error: 145.2392
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1392 -
mean_absolute_error: 0.2529 - mean_squared_error: 0.1392 - rmse: 0.3690 -
mean_absolute_percentage_error: 149.7316
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1386 -
mean_absolute_error: 0.2531 - mean_squared_error: 0.1386 - rmse: 0.3679 -
mean_absolute_percentage_error: 146.9300
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1385 -
mean_absolute_error: 0.2534 - mean_squared_error: 0.1385 - rmse: 0.3679 -
mean_absolute_percentage_error: 144.7591
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1414 -
mean_absolute_error: 0.2554 - mean_squared_error: 0.1414 - rmse: 0.3714 -
mean_absolute_percentage_error: 144.9256
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1388 -
mean_absolute_error: 0.2518 - mean_squared_error: 0.1388 - rmse: 0.3688 -
mean_absolute_percentage_error: 141.8674
```

```
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1389 -
mean_absolute_error: 0.2528 - mean_squared_error: 0.1389 - rmse: 0.3688 -
mean_absolute_percentage_error: 145.7522
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1395 -
mean_absolute_error: 0.2535 - mean_squared_error: 0.1395 - rmse: 0.3701 -
mean_absolute_percentage_error: 146.7401
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1385 -
mean_absolute_error: 0.2523 - mean_squared_error: 0.1385 - rmse: 0.3672 -
mean_absolute_percentage_error: 145.4874
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1393 -
mean_absolute_error: 0.2535 - mean_squared_error: 0.1393 - rmse: 0.3703 -
mean_absolute_percentage_error: 140.3421
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1365 -
mean_absolute_error: 0.2501 - mean_squared_error: 0.1365 - rmse: 0.3649 -
mean_absolute_percentage_error: 146.7739
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1376 -
mean_absolute_error: 0.2516 - mean_squared_error: 0.1376 - rmse: 0.3666 -
mean_absolute_percentage_error: 140.1562
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1391 -
mean_absolute_error: 0.2538 - mean_squared_error: 0.1391 - rmse: 0.3686 -
mean_absolute_percentage_error: 149.7861
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1361 -
mean_absolute_error: 0.2505 - mean_squared_error: 0.1361 - rmse: 0.3645 -
mean_absolute_percentage_error: 142.1097
100/100 [==============================] - 4s 1ms/step - loss: 0.1507 -
mean_absolute_error: 0.2621 - mean_squared_error: 0.1507 - rmse: 0.3829 -
mean_absolute_percentage_error: 144.4601
200/200 [==============================] - 4s 1ms/step
No Regularizer chosen
------------------------------------------------------------------------
Training for fold 10 ...
Epoch 1/100
210/210 [==============================] - 5s 2ms/step - loss: 0.3463 -
mean_absolute_error: 0.4482 - mean_squared_error: 0.3463 - rmse: 0.5783 -
mean_absolute_percentage_error: 200.6029
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2314 -
mean_absolute_error: 0.3438 - mean_squared_error: 0.2314 - rmse: 0.4774 -
mean_absolute_percentage_error: 186.1513
Epoch 3/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.2168 -
mean_absolute_error: 0.3272 - mean_squared_error: 0.2168 - rmse: 0.4615 -
mean_absolute_percentage_error: 191.3712
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2045 -
mean_absolute_error: 0.3163 - mean_squared_error: 0.2045 - rmse: 0.4484 -
mean_absolute_percentage_error: 181.0894
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1981 -
mean_absolute_error: 0.3105 - mean_squared_error: 0.1981 - rmse: 0.4412 -
mean_absolute_percentage_error: 183.6436
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1946 -
mean_absolute_error: 0.3067 - mean_squared_error: 0.1946 - rmse: 0.4369 -
mean_absolute_percentage_error: 179.9146
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1891 -
mean_absolute_error: 0.3020 - mean_squared_error: 0.1891 - rmse: 0.4306 -
mean_absolute_percentage_error: 174.0544
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1855 -
mean_absolute_error: 0.2988 - mean_squared_error: 0.1855 - rmse: 0.4268 -
mean_absolute_percentage_error: 170.0976
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1838 -
mean_absolute_error: 0.2973 - mean_squared_error: 0.1838 - rmse: 0.4244 -
mean_absolute_percentage_error: 171.4833
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1817 -
mean_absolute_error: 0.2955 - mean_squared_error: 0.1817 - rmse: 0.4220 -
mean_absolute_percentage_error: 169.6475
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1771 -
mean_absolute_error: 0.2909 - mean_squared_error: 0.1771 - rmse: 0.4164 -
mean_absolute_percentage_error: 168.9010
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1764 -
mean_absolute_error: 0.2899 - mean_squared_error: 0.1764 - rmse: 0.4156 -
mean_absolute_percentage_error: 166.6702
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1724 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1724 - rmse: 0.4114 -
mean_absolute_percentage_error: 161.9701
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1721 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1721 - rmse: 0.4106 -
mean_absolute_percentage_error: 167.0764
Epoch 15/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1726 -
mean_absolute_error: 0.2871 - mean_squared_error: 0.1726 - rmse: 0.4116 -
mean_absolute_percentage_error: 170.1461
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1685 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1685 - rmse: 0.4062 -
mean_absolute_percentage_error: 163.0252
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1683 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1683 - rmse: 0.4054 -
mean_absolute_percentage_error: 160.9817
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1667 -
mean_absolute_error: 0.2815 - mean_squared_error: 0.1667 - rmse: 0.4041 -
mean_absolute_percentage_error: 160.8592
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1665 -
mean_absolute_error: 0.2826 - mean_squared_error: 0.1665 - rmse: 0.4045 -
mean_absolute_percentage_error: 159.0169
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1637 -
mean_absolute_error: 0.2782 - mean_squared_error: 0.1637 - rmse: 0.4004 -
mean_absolute_percentage_error: 159.9039
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1629 -
mean_absolute_error: 0.2784 - mean_squared_error: 0.1629 - rmse: 0.3991 -
mean_absolute_percentage_error: 160.9201
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1627 -
mean_absolute_error: 0.2780 - mean_squared_error: 0.1627 - rmse: 0.3983 -
mean_absolute_percentage_error: 158.8826
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1600 -
mean_absolute_error: 0.2752 - mean_squared_error: 0.1600 - rmse: 0.3953 -
mean_absolute_percentage_error: 155.1004
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1615 -
mean_absolute_error: 0.2764 - mean_squared_error: 0.1615 - rmse: 0.3969 -
mean_absolute_percentage_error: 157.1785
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1583 -
mean_absolute_error: 0.2733 - mean_squared_error: 0.1583 - rmse: 0.3938 -
mean_absolute_percentage_error: 154.7609
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1593 -
mean_absolute_error: 0.2746 - mean_squared_error: 0.1593 - rmse: 0.3946 -
mean_absolute_percentage_error: 154.0390
Epoch 27/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1566 -
mean_absolute_error: 0.2717 - mean_squared_error: 0.1566 - rmse: 0.3913 -
mean_absolute_percentage_error: 154.7419
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1575 -
mean_absolute_error: 0.2714 - mean_squared_error: 0.1575 - rmse: 0.3929 -
mean_absolute_percentage_error: 150.7404
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1563 -
mean_absolute_error: 0.2712 - mean_squared_error: 0.1563 - rmse: 0.3903 -
mean_absolute_percentage_error: 148.9572
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1559 -
mean_absolute_error: 0.2703 - mean_squared_error: 0.1559 - rmse: 0.3912 -
mean_absolute_percentage_error: 155.4833
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1568 -
mean_absolute_error: 0.2714 - mean_squared_error: 0.1568 - rmse: 0.3915 -
mean_absolute_percentage_error: 150.0285
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1541 -
mean_absolute_error: 0.2695 - mean_squared_error: 0.1541 - rmse: 0.3876 -
mean_absolute_percentage_error: 150.4943
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1546 -
mean_absolute_error: 0.2688 - mean_squared_error: 0.1546 - rmse: 0.3887 -
mean_absolute_percentage_error: 150.9202
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1539 -
mean_absolute_error: 0.2682 - mean_squared_error: 0.1539 - rmse: 0.3883 -
mean_absolute_percentage_error: 144.8241
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1541 -
mean_absolute_error: 0.2704 - mean_squared_error: 0.1541 - rmse: 0.3885 -
mean_absolute_percentage_error: 145.7829
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1550 -
mean_absolute_error: 0.2702 - mean_squared_error: 0.1550 - rmse: 0.3895 -
mean_absolute_percentage_error: 144.6856
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1515 -
mean_absolute_error: 0.2665 - mean_squared_error: 0.1515 - rmse: 0.3848 -
mean_absolute_percentage_error: 151.9029
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1540 -
mean_absolute_error: 0.2687 - mean_squared_error: 0.1540 - rmse: 0.3889 -
mean_absolute_percentage_error: 149.4342
Epoch 39/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1516 -
mean_absolute_error: 0.2659 - mean_squared_error: 0.1516 - rmse: 0.3847 -
mean_absolute_percentage_error: 147.2798
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1518 -
mean_absolute_error: 0.2666 - mean_squared_error: 0.1518 - rmse: 0.3859 -
mean_absolute_percentage_error: 148.3868
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1523 -
mean_absolute_error: 0.2669 - mean_squared_error: 0.1523 - rmse: 0.3861 -
mean_absolute_percentage_error: 146.1647
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1492 -
mean_absolute_error: 0.2636 - mean_squared_error: 0.1492 - rmse: 0.3821 -
mean_absolute_percentage_error: 148.6969
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1495 -
mean_absolute_error: 0.2649 - mean_squared_error: 0.1495 - rmse: 0.3824 -
mean_absolute_percentage_error: 146.6922
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1491 -
mean_absolute_error: 0.2637 - mean_squared_error: 0.1491 - rmse: 0.3821 -
mean_absolute_percentage_error: 146.2633
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1500 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1500 - rmse: 0.3833 -
mean_absolute_percentage_error: 148.3232
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1496 -
mean_absolute_error: 0.2653 - mean_squared_error: 0.1496 - rmse: 0.3826 -
mean_absolute_percentage_error: 148.2889
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1486 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1486 - rmse: 0.3816 -
mean_absolute_percentage_error: 146.4602
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1493 -
mean_absolute_error: 0.2638 - mean_squared_error: 0.1493 - rmse: 0.3818 -
mean_absolute_percentage_error: 142.4467
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1484 -
mean_absolute_error: 0.2628 - mean_squared_error: 0.1484 - rmse: 0.3810 -
mean_absolute_percentage_error: 144.0905
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1461 -
mean_absolute_error: 0.2615 - mean_squared_error: 0.1461 - rmse: 0.3781 -
mean_absolute_percentage_error: 143.3021
Epoch 51/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1463 -
mean_absolute_error: 0.2602 - mean_squared_error: 0.1463 - rmse: 0.3781 -
mean_absolute_percentage_error: 150.5130
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1458 -
mean_absolute_error: 0.2596 - mean_squared_error: 0.1458 - rmse: 0.3777 -
mean_absolute_percentage_error: 142.7238
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1454 -
mean_absolute_error: 0.2606 - mean_squared_error: 0.1454 - rmse: 0.3779 -
mean_absolute_percentage_error: 146.4516
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1441 -
mean_absolute_error: 0.2585 - mean_squared_error: 0.1441 - rmse: 0.3762 -
mean_absolute_percentage_error: 140.8820
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1456 -
mean_absolute_error: 0.2599 - mean_squared_error: 0.1456 - rmse: 0.3768 -
mean_absolute_percentage_error: 141.6109
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1445 -
mean_absolute_error: 0.2598 - mean_squared_error: 0.1445 - rmse: 0.3756 -
mean_absolute_percentage_error: 143.6823
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1451 -
mean_absolute_error: 0.2596 - mean_squared_error: 0.1451 - rmse: 0.3760 -
mean_absolute_percentage_error: 144.1674
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1442 -
mean_absolute_error: 0.2598 - mean_squared_error: 0.1442 - rmse: 0.3750 -
mean_absolute_percentage_error: 145.5400
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1431 -
mean_absolute_error: 0.2577 - mean_squared_error: 0.1431 - rmse: 0.3743 -
mean_absolute_percentage_error: 144.2436
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1434 -
mean_absolute_error: 0.2576 - mean_squared_error: 0.1434 - rmse: 0.3756 -
mean_absolute_percentage_error: 142.4798
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1424 -
mean_absolute_error: 0.2569 - mean_squared_error: 0.1424 - rmse: 0.3741 -
mean_absolute_percentage_error: 140.9881
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1428 -
mean_absolute_error: 0.2582 - mean_squared_error: 0.1428 - rmse: 0.3726 -
mean_absolute_percentage_error: 143.7842
Epoch 63/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1438 -
mean_absolute_error: 0.2599 - mean_squared_error: 0.1438 - rmse: 0.3755 -
mean_absolute_percentage_error: 142.2419
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1426 -
mean_absolute_error: 0.2580 - mean_squared_error: 0.1426 - rmse: 0.3742 -
mean_absolute_percentage_error: 141.3981
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1429 -
mean_absolute_error: 0.2584 - mean_squared_error: 0.1429 - rmse: 0.3740 -
mean_absolute_percentage_error: 144.2562
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1445 -
mean_absolute_error: 0.2580 - mean_squared_error: 0.1445 - rmse: 0.3759 -
mean_absolute_percentage_error: 142.0919
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1419 -
mean_absolute_error: 0.2565 - mean_squared_error: 0.1419 - rmse: 0.3726 -
mean_absolute_percentage_error: 140.0147
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1424 -
mean_absolute_error: 0.2571 - mean_squared_error: 0.1424 - rmse: 0.3726 -
mean_absolute_percentage_error: 149.6205
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1418 -
mean_absolute_error: 0.2560 - mean_squared_error: 0.1418 - rmse: 0.3729 -
mean_absolute_percentage_error: 138.4710
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1433 -
mean_absolute_error: 0.2587 - mean_squared_error: 0.1433 - rmse: 0.3744 -
mean_absolute_percentage_error: 145.0878
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1400 -
mean_absolute_error: 0.2555 - mean_squared_error: 0.1400 - rmse: 0.3699 -
mean_absolute_percentage_error: 144.4516
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1403 -
mean_absolute_error: 0.2548 - mean_squared_error: 0.1403 - rmse: 0.3697 -
mean_absolute_percentage_error: 143.5036
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1397 -
mean_absolute_error: 0.2544 - mean_squared_error: 0.1397 - rmse: 0.3697 -
mean_absolute_percentage_error: 144.4570
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1395 -
mean_absolute_error: 0.2551 - mean_squared_error: 0.1395 - rmse: 0.3695 -
mean_absolute_percentage_error: 139.8847
Epoch 75/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1397 -
mean_absolute_error: 0.2538 - mean_squared_error: 0.1397 - rmse: 0.3703 -
mean_absolute_percentage_error: 141.9098
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1397 -
mean_absolute_error: 0.2549 - mean_squared_error: 0.1397 - rmse: 0.3702 -
mean_absolute_percentage_error: 140.1959
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1405 -
mean_absolute_error: 0.2545 - mean_squared_error: 0.1405 - rmse: 0.3700 -
mean_absolute_percentage_error: 140.3780
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1387 -
mean_absolute_error: 0.2532 - mean_squared_error: 0.1387 - rmse: 0.3681 -
mean_absolute_percentage_error: 141.3490
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1390 -
mean_absolute_error: 0.2542 - mean_squared_error: 0.1390 - rmse: 0.3678 -
mean_absolute_percentage_error: 142.6768
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1405 -
mean_absolute_error: 0.2544 - mean_squared_error: 0.1405 - rmse: 0.3708 -
mean_absolute_percentage_error: 142.6770
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1383 -
mean_absolute_error: 0.2526 - mean_squared_error: 0.1383 - rmse: 0.3672 -
mean_absolute_percentage_error: 138.0282
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1400 -
mean_absolute_error: 0.2549 - mean_squared_error: 0.1400 - rmse: 0.3697 -
mean_absolute_percentage_error: 143.5426
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1377 -
mean_absolute_error: 0.2522 - mean_squared_error: 0.1377 - rmse: 0.3667 -
mean_absolute_percentage_error: 140.3717
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1379 -
mean_absolute_error: 0.2524 - mean_squared_error: 0.1379 - rmse: 0.3673 -
mean_absolute_percentage_error: 140.2420
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1395 -
mean_absolute_error: 0.2544 - mean_squared_error: 0.1395 - rmse: 0.3696 -
mean_absolute_percentage_error: 139.6058
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1374 -
mean_absolute_error: 0.2520 - mean_squared_error: 0.1374 - rmse: 0.3657 -
mean_absolute_percentage_error: 140.6796
Epoch 87/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1378 -
mean_absolute_error: 0.2514 - mean_squared_error: 0.1378 - rmse: 0.3673 -
mean_absolute_percentage_error: 138.1840
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1365 -
mean_absolute_error: 0.2509 - mean_squared_error: 0.1365 - rmse: 0.3655 -
mean_absolute_percentage_error: 144.1714
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1382 -
mean_absolute_error: 0.2535 - mean_squared_error: 0.1382 - rmse: 0.3669 -
mean_absolute_percentage_error: 136.4585
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1358 -
mean_absolute_error: 0.2493 - mean_squared_error: 0.1358 - rmse: 0.3642 -
mean_absolute_percentage_error: 135.6096
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1379 -
mean_absolute_error: 0.2528 - mean_squared_error: 0.1379 - rmse: 0.3667 -
mean_absolute_percentage_error: 139.1126
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1353 -
mean_absolute_error: 0.2498 - mean_squared_error: 0.1353 - rmse: 0.3643 -
mean_absolute_percentage_error: 139.2050
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1387 -
mean_absolute_error: 0.2528 - mean_squared_error: 0.1387 - rmse: 0.3679 -
mean_absolute_percentage_error: 142.8558
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1351 -
mean_absolute_error: 0.2488 - mean_squared_error: 0.1351 - rmse: 0.3631 -
mean_absolute_percentage_error: 138.9002
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1355 -
mean_absolute_error: 0.2499 - mean_squared_error: 0.1355 - rmse: 0.3636 -
mean_absolute_percentage_error: 140.6656
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1357 -
mean_absolute_error: 0.2501 - mean_squared_error: 0.1357 - rmse: 0.3646 -
mean_absolute_percentage_error: 142.9761
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1350 -
mean_absolute_error: 0.2493 - mean_squared_error: 0.1350 - rmse: 0.3629 -
mean_absolute_percentage_error: 138.8804
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1356 -
mean_absolute_error: 0.2498 - mean_squared_error: 0.1356 - rmse: 0.3634 -
mean_absolute_percentage_error: 136.3702
Epoch 99/100
```
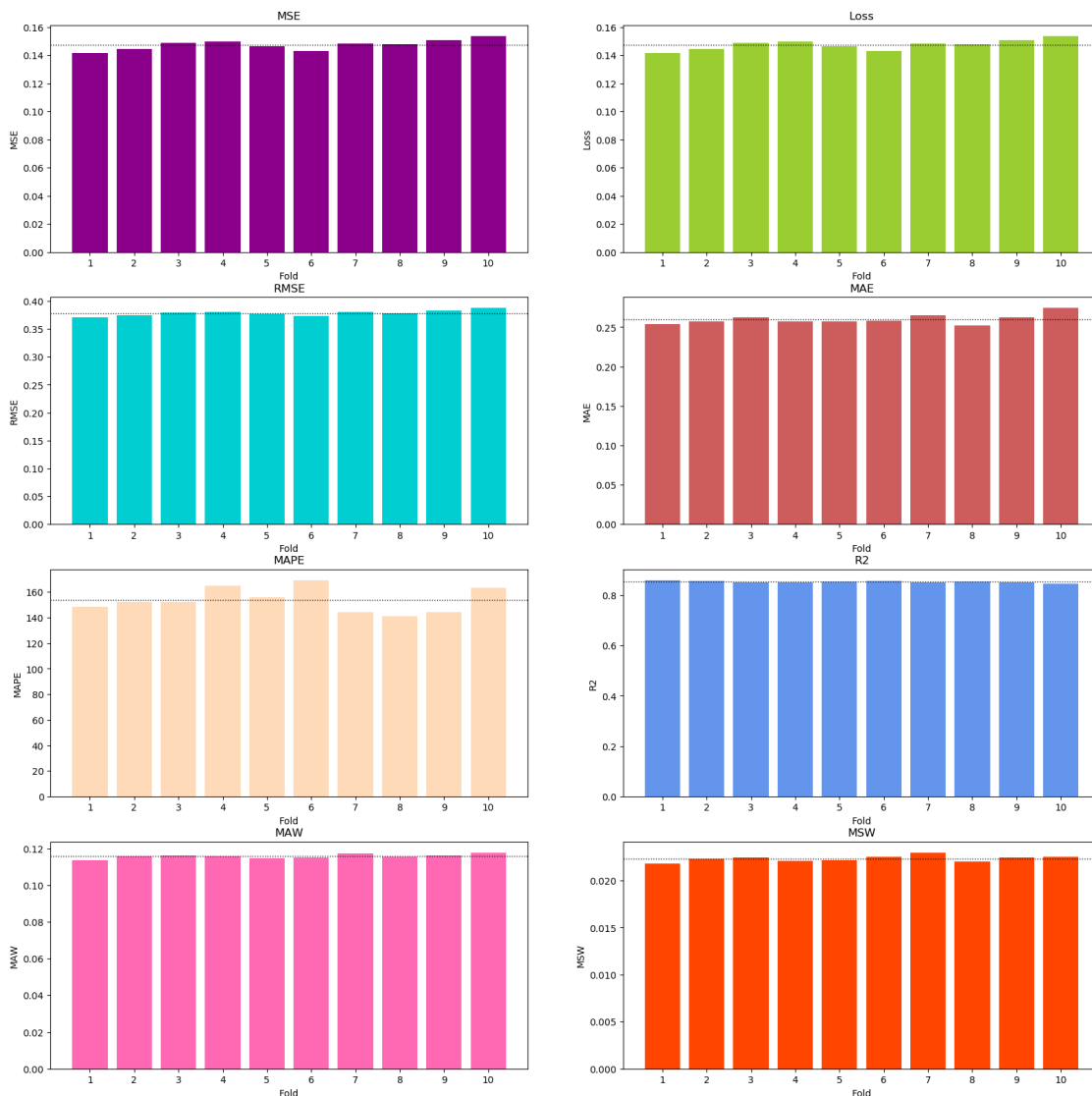
```
210/210 [==============================] - 0s 2ms/step - loss: 0.1365 -
mean_absolute_error: 0.2509 - mean_squared_error: 0.1365 - rmse: 0.3654 -
mean_absolute_percentage_error: 140.0440
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1357 -
mean_absolute_error: 0.2501 - mean_squared_error: 0.1357 - rmse: 0.3650 -
mean_absolute_percentage_error: 136.4083
100/100 [==============================] - 4s 1ms/step - loss: 0.1537 -
mean_absolute_error: 0.2741 - mean_squared_error: 0.1537 - rmse: 0.3873 -
mean_absolute_percentage_error: 163.3049
200/200 [==============================] - 4s 1ms/step
```
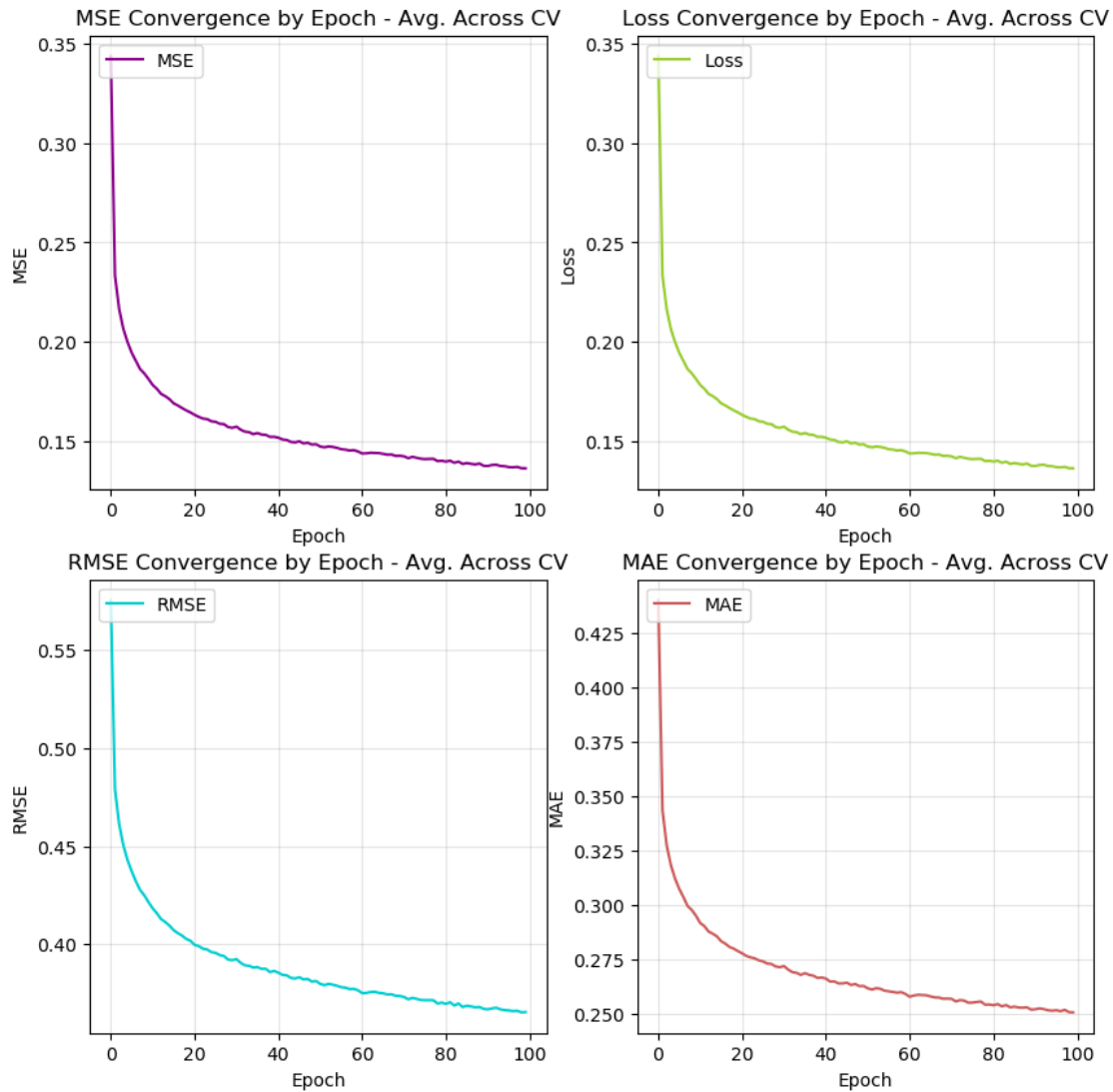
[14]:
```python
#Graph for Measures
figure_v = graph_metric_by_fold(compendium_v)
plt.show()
```

```
[15]:  #Graph for Convergence
       figure_v = graph_epoch_convergence(compendium_v)
       plt.show()
```


5   L1 Regularization

```
[16]:  #Creating the MLP
       compendium_l1 = folds_and_model(x_tr, y_tr, x_ts, y_ts,
                                neurons = 41, regularizer = 'L1', input_no = 81,
                                batch = 64, epochs_no = 100)
```

```
Regularizer chosen is L1
--------------------------------------------------------------------------------
Training for fold 1 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4602 -
mean_absolute_error: 0.4470 - mean_squared_error: 0.3542 - rmse: 0.5837 -
mean_absolute_percentage_error: 197.6100
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3122 -
mean_absolute_error: 0.3544 - mean_squared_error: 0.2436 - rmse: 0.4898 -
mean_absolute_percentage_error: 188.5188
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2835 -
mean_absolute_error: 0.3423 - mean_squared_error: 0.2299 - rmse: 0.4760 -
mean_absolute_percentage_error: 192.7406
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2665 -
mean_absolute_error: 0.3341 - mean_squared_error: 0.2204 - rmse: 0.4655 -
mean_absolute_percentage_error: 191.9365
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2613 -
mean_absolute_error: 0.3324 - mean_squared_error: 0.2191 - rmse: 0.4640 -
mean_absolute_percentage_error: 189.4829
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2532 -
mean_absolute_error: 0.3278 - mean_squared_error: 0.2134 - rmse: 0.4579 -
mean_absolute_percentage_error: 188.9747
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2480 -
mean_absolute_error: 0.3241 - mean_squared_error: 0.2106 - rmse: 0.4548 -
mean_absolute_percentage_error: 189.1131
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2454 -
mean_absolute_error: 0.3227 - mean_squared_error: 0.2090 - rmse: 0.4529 -
mean_absolute_percentage_error: 188.4196
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2423 -
mean_absolute_error: 0.3207 - mean_squared_error: 0.2071 - rmse: 0.4505 -
mean_absolute_percentage_error: 182.9579
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2401 -
mean_absolute_error: 0.3197 - mean_squared_error: 0.2058 - rmse: 0.4499 -
mean_absolute_percentage_error: 186.6843
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2386 -
mean_absolute_error: 0.3192 - mean_squared_error: 0.2049 - rmse: 0.4489 -
mean_absolute_percentage_error: 188.6990
Epoch 12/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.2349 -
mean_absolute_error: 0.3148 - mean_squared_error: 0.2017 - rmse: 0.4456 -
mean_absolute_percentage_error: 182.5311
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2331 -
mean_absolute_error: 0.3149 - mean_squared_error: 0.2003 - rmse: 0.4434 -
mean_absolute_percentage_error: 181.0501
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2318 -
mean_absolute_error: 0.3136 - mean_squared_error: 0.1992 - rmse: 0.4427 -
mean_absolute_percentage_error: 178.5838
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2306 -
mean_absolute_error: 0.3122 - mean_squared_error: 0.1982 - rmse: 0.4421 -
mean_absolute_percentage_error: 180.0142
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2276 -
mean_absolute_error: 0.3101 - mean_squared_error: 0.1958 - rmse: 0.4388 -
mean_absolute_percentage_error: 177.4412
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2293 -
mean_absolute_error: 0.3117 - mean_squared_error: 0.1976 - rmse: 0.4406 -
mean_absolute_percentage_error: 176.6900
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2255 -
mean_absolute_error: 0.3075 - mean_squared_error: 0.1940 - rmse: 0.4366 -
mean_absolute_percentage_error: 178.5478
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2246 -
mean_absolute_error: 0.3077 - mean_squared_error: 0.1936 - rmse: 0.4364 -
mean_absolute_percentage_error: 182.3975
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2227 -
mean_absolute_error: 0.3078 - mean_squared_error: 0.1921 - rmse: 0.4345 -
mean_absolute_percentage_error: 179.2879
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2210 -
mean_absolute_error: 0.3063 - mean_squared_error: 0.1907 - rmse: 0.4332 -
mean_absolute_percentage_error: 178.9669
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2199 -
mean_absolute_error: 0.3044 - mean_squared_error: 0.1899 - rmse: 0.4319 -
mean_absolute_percentage_error: 176.7108
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2188 -
mean_absolute_error: 0.3032 - mean_squared_error: 0.1889 - rmse: 0.4315 -
mean_absolute_percentage_error: 178.6305
Epoch 24/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.2168 -
mean_absolute_error: 0.3031 - mean_squared_error: 0.1870 - rmse: 0.4286 -
mean_absolute_percentage_error: 172.8589
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2177 -
mean_absolute_error: 0.3034 - mean_squared_error: 0.1883 - rmse: 0.4308 -
mean_absolute_percentage_error: 180.7110
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2161 -
mean_absolute_error: 0.3028 - mean_squared_error: 0.1869 - rmse: 0.4284 -
mean_absolute_percentage_error: 174.5762
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2158 -
mean_absolute_error: 0.3006 - mean_squared_error: 0.1867 - rmse: 0.4284 -
mean_absolute_percentage_error: 173.6806
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2170 -
mean_absolute_error: 0.3035 - mean_squared_error: 0.1879 - rmse: 0.4295 -
mean_absolute_percentage_error: 176.1332
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2166 -
mean_absolute_error: 0.3026 - mean_squared_error: 0.1877 - rmse: 0.4286 -
mean_absolute_percentage_error: 170.4759
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2138 -
mean_absolute_error: 0.2997 - mean_squared_error: 0.1851 - rmse: 0.4256 -
mean_absolute_percentage_error: 172.4615
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2125 -
mean_absolute_error: 0.3002 - mean_squared_error: 0.1841 - rmse: 0.4241 -
mean_absolute_percentage_error: 172.4572
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2141 -
mean_absolute_error: 0.3007 - mean_squared_error: 0.1858 - rmse: 0.4266 -
mean_absolute_percentage_error: 174.3455
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2120 -
mean_absolute_error: 0.2994 - mean_squared_error: 0.1837 - rmse: 0.4253 -
mean_absolute_percentage_error: 175.9164
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2101 -
mean_absolute_error: 0.2983 - mean_squared_error: 0.1820 - rmse: 0.4224 -
mean_absolute_percentage_error: 172.6108
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2096 -
mean_absolute_error: 0.2971 - mean_squared_error: 0.1818 - rmse: 0.4227 -
mean_absolute_percentage_error: 172.8626
Epoch 36/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.2095 -
mean_absolute_error: 0.2968 - mean_squared_error: 0.1818 - rmse: 0.4220 -
mean_absolute_percentage_error: 170.4946
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2088 -
mean_absolute_error: 0.2970 - mean_squared_error: 0.1813 - rmse: 0.4218 -
mean_absolute_percentage_error: 167.3039
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2062 -
mean_absolute_error: 0.2951 - mean_squared_error: 0.1785 - rmse: 0.4189 -
mean_absolute_percentage_error: 167.4417
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2065 -
mean_absolute_error: 0.2952 - mean_squared_error: 0.1788 - rmse: 0.4195 -
mean_absolute_percentage_error: 172.4310
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2057 -
mean_absolute_error: 0.2934 - mean_squared_error: 0.1781 - rmse: 0.4185 -
mean_absolute_percentage_error: 172.1345
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2072 -
mean_absolute_error: 0.2955 - mean_squared_error: 0.1795 - rmse: 0.4192 -
mean_absolute_percentage_error: 170.1602
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2033 -
mean_absolute_error: 0.2921 - mean_squared_error: 0.1758 - rmse: 0.4162 -
mean_absolute_percentage_error: 172.0969
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2082 -
mean_absolute_error: 0.2967 - mean_squared_error: 0.1806 - rmse: 0.4211 -
mean_absolute_percentage_error: 173.5931
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2058 -
mean_absolute_error: 0.2948 - mean_squared_error: 0.1783 - rmse: 0.4188 -
mean_absolute_percentage_error: 171.2311
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2049 -
mean_absolute_error: 0.2932 - mean_squared_error: 0.1772 - rmse: 0.4169 -
mean_absolute_percentage_error: 164.4129
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2014 -
mean_absolute_error: 0.2900 - mean_squared_error: 0.1740 - rmse: 0.4133 -
mean_absolute_percentage_error: 166.5709
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2031 -
mean_absolute_error: 0.2912 - mean_squared_error: 0.1756 - rmse: 0.4151 -
mean_absolute_percentage_error: 165.0441
Epoch 48/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.2015 -
mean_absolute_error: 0.2910 - mean_squared_error: 0.1742 - rmse: 0.4138 -
mean_absolute_percentage_error: 170.4647
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2017 -
mean_absolute_error: 0.2913 - mean_squared_error: 0.1744 - rmse: 0.4136 -
mean_absolute_percentage_error: 159.9991
Epoch 50/100
210/210 [==============================] - 1s 3ms/step - loss: 0.2020 -
mean_absolute_error: 0.2898 - mean_squared_error: 0.1747 - rmse: 0.4140 -
mean_absolute_percentage_error: 169.2219
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2009 -
mean_absolute_error: 0.2897 - mean_squared_error: 0.1736 - rmse: 0.4138 -
mean_absolute_percentage_error: 167.9264
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2010 -
mean_absolute_error: 0.2906 - mean_squared_error: 0.1738 - rmse: 0.4121 -
mean_absolute_percentage_error: 164.3680
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1987 -
mean_absolute_error: 0.2880 - mean_squared_error: 0.1715 - rmse: 0.4101 -
mean_absolute_percentage_error: 162.3763
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1995 -
mean_absolute_error: 0.2889 - mean_squared_error: 0.1723 - rmse: 0.4121 -
mean_absolute_percentage_error: 171.3231
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1990 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1720 - rmse: 0.4116 -
mean_absolute_percentage_error: 169.3744
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2002 -
mean_absolute_error: 0.2900 - mean_squared_error: 0.1732 - rmse: 0.4132 -
mean_absolute_percentage_error: 167.3577
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2002 -
mean_absolute_error: 0.2887 - mean_squared_error: 0.1733 - rmse: 0.4127 -
mean_absolute_percentage_error: 167.3374
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2007 -
mean_absolute_error: 0.2898 - mean_squared_error: 0.1738 - rmse: 0.4135 -
mean_absolute_percentage_error: 170.0641
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2030 -
mean_absolute_error: 0.2914 - mean_squared_error: 0.1762 - rmse: 0.4158 -
mean_absolute_percentage_error: 176.5081
Epoch 60/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1969 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1701 - rmse: 0.4082 -
mean_absolute_percentage_error: 167.5912
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1975 -
mean_absolute_error: 0.2871 - mean_squared_error: 0.1708 - rmse: 0.4091 -
mean_absolute_percentage_error: 162.7393
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1967 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1700 - rmse: 0.4097 -
mean_absolute_percentage_error: 165.2680
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1987 -
mean_absolute_error: 0.2871 - mean_squared_error: 0.1721 - rmse: 0.4109 -
mean_absolute_percentage_error: 156.1378
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1962 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1694 - rmse: 0.4074 -
mean_absolute_percentage_error: 161.4940
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1978 -
mean_absolute_error: 0.2867 - mean_squared_error: 0.1713 - rmse: 0.4093 -
mean_absolute_percentage_error: 162.9104
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1967 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1702 - rmse: 0.4079 -
mean_absolute_percentage_error: 161.9429
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1965 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1701 - rmse: 0.4087 -
mean_absolute_percentage_error: 167.4925
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1966 -
mean_absolute_error: 0.2859 - mean_squared_error: 0.1702 - rmse: 0.4086 -
mean_absolute_percentage_error: 165.5479
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1974 -
mean_absolute_error: 0.2874 - mean_squared_error: 0.1710 - rmse: 0.4095 -
mean_absolute_percentage_error: 160.8940
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1958 -
mean_absolute_error: 0.2851 - mean_squared_error: 0.1696 - rmse: 0.4079 -
mean_absolute_percentage_error: 164.7282
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1939 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1677 - rmse: 0.4060 -
mean_absolute_percentage_error: 165.8091
Epoch 72/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1956 -
mean_absolute_error: 0.2849 - mean_squared_error: 0.1695 - rmse: 0.4074 -
mean_absolute_percentage_error: 164.3329
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1959 -
mean_absolute_error: 0.2857 - mean_squared_error: 0.1698 - rmse: 0.4078 -
mean_absolute_percentage_error: 158.6787
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1983 -
mean_absolute_error: 0.2874 - mean_squared_error: 0.1723 - rmse: 0.4109 -
mean_absolute_percentage_error: 162.5794
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1952 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1693 - rmse: 0.4072 -
mean_absolute_percentage_error: 159.3282
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1952 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1694 - rmse: 0.4075 -
mean_absolute_percentage_error: 162.4811
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2834 - mean_squared_error: 0.1671 - rmse: 0.4044 -
mean_absolute_percentage_error: 162.6192
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1958 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1701 - rmse: 0.4076 -
mean_absolute_percentage_error: 167.5213
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1963 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1708 - rmse: 0.4102 -
mean_absolute_percentage_error: 166.2516
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1696 - rmse: 0.4080 -
mean_absolute_percentage_error: 161.0489
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1664 - rmse: 0.4037 -
mean_absolute_percentage_error: 160.4209
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1915 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1660 - rmse: 0.4039 -
mean_absolute_percentage_error: 165.5410
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1665 - rmse: 0.4039 -
mean_absolute_percentage_error: 160.3093
Epoch 84/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2847 - mean_squared_error: 0.1690 - rmse: 0.4073 -
mean_absolute_percentage_error: 161.0497
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1915 -
mean_absolute_error: 0.2816 - mean_squared_error: 0.1664 - rmse: 0.4031 -
mean_absolute_percentage_error: 166.1836
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1949 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1698 - rmse: 0.4090 -
mean_absolute_percentage_error: 165.3294
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1945 -
mean_absolute_error: 0.2843 - mean_squared_error: 0.1694 - rmse: 0.4075 -
mean_absolute_percentage_error: 163.7261
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1902 -
mean_absolute_error: 0.2812 - mean_squared_error: 0.1654 - rmse: 0.4028 -
mean_absolute_percentage_error: 162.9318
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1922 -
mean_absolute_error: 0.2839 - mean_squared_error: 0.1675 - rmse: 0.4054 -
mean_absolute_percentage_error: 167.8148
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1945 -
mean_absolute_error: 0.2853 - mean_squared_error: 0.1699 - rmse: 0.4085 -
mean_absolute_percentage_error: 168.7707
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1906 -
mean_absolute_error: 0.2816 - mean_squared_error: 0.1662 - rmse: 0.4034 -
mean_absolute_percentage_error: 160.5385
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1905 -
mean_absolute_error: 0.2817 - mean_squared_error: 0.1660 - rmse: 0.4043 -
mean_absolute_percentage_error: 162.9536
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1877 -
mean_absolute_error: 0.2791 - mean_squared_error: 0.1633 - rmse: 0.3999 -
mean_absolute_percentage_error: 161.8465
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1906 -
mean_absolute_error: 0.2821 - mean_squared_error: 0.1661 - rmse: 0.4041 -
mean_absolute_percentage_error: 155.6195
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1906 -
mean_absolute_error: 0.2815 - mean_squared_error: 0.1661 - rmse: 0.4039 -
mean_absolute_percentage_error: 159.3089
Epoch 96/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1911 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1666 - rmse: 0.4032 -
mean_absolute_percentage_error: 164.3910
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1906 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1661 - rmse: 0.4031 -
mean_absolute_percentage_error: 161.4041
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1923 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1678 - rmse: 0.4058 -
mean_absolute_percentage_error: 155.3871
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1890 -
mean_absolute_error: 0.2797 - mean_squared_error: 0.1645 - rmse: 0.4008 -
mean_absolute_percentage_error: 164.5925
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1892 -
mean_absolute_error: 0.2797 - mean_squared_error: 0.1646 - rmse: 0.4013 -
mean_absolute_percentage_error: 158.6184
100/100 [==============================] - 0s 1ms/step - loss: 0.1968 -
mean_absolute_error: 0.2908 - mean_squared_error: 0.1724 - rmse: 0.4105 -
mean_absolute_percentage_error: 170.2525
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1
-------------------------------------------------------------------------
Training for fold 2 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4663 -
mean_absolute_error: 0.4523 - mean_squared_error: 0.3561 - rmse: 0.5866 -
mean_absolute_percentage_error: 200.4112
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3176 -
mean_absolute_error: 0.3549 - mean_squared_error: 0.2473 - rmse: 0.4932 -
mean_absolute_percentage_error: 190.2353
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2834 -
mean_absolute_error: 0.3395 - mean_squared_error: 0.2298 - rmse: 0.4759 -
mean_absolute_percentage_error: 190.9572
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2688 -
mean_absolute_error: 0.3323 - mean_squared_error: 0.2226 - rmse: 0.4681 -
mean_absolute_percentage_error: 187.3850
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2593 -
mean_absolute_error: 0.3291 - mean_squared_error: 0.2171 - rmse: 0.4619 -
mean_absolute_percentage_error: 185.6740
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2520 -
```

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mean_absolute_error: 0.3227 - mean_squared_error: 0.2123 - rmse: 0.4572 -
mean_absolute_percentage_error: 190.6656
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2498 -
mean_absolute_error: 0.3235 - mean_squared_error: 0.2119 - rmse: 0.4566 -
mean_absolute_percentage_error: 191.3741
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2450 -
mean_absolute_error: 0.3189 - mean_squared_error: 0.2083 - rmse: 0.4530 -
mean_absolute_percentage_error: 185.5754
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2408 -
mean_absolute_error: 0.3172 - mean_squared_error: 0.2053 - rmse: 0.4489 -
mean_absolute_percentage_error: 183.0670
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2418 -
mean_absolute_error: 0.3183 - mean_squared_error: 0.2065 - rmse: 0.4497 -
mean_absolute_percentage_error: 180.3628
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2351 -
mean_absolute_error: 0.3123 - mean_squared_error: 0.2003 - rmse: 0.4439 -
mean_absolute_percentage_error: 172.9772
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2336 -
mean_absolute_error: 0.3113 - mean_squared_error: 0.1995 - rmse: 0.4429 -
mean_absolute_percentage_error: 180.1212
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2333 -
mean_absolute_error: 0.3123 - mean_squared_error: 0.1999 - rmse: 0.4431 -
mean_absolute_percentage_error: 177.6263
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2324 -
mean_absolute_error: 0.3106 - mean_squared_error: 0.1992 - rmse: 0.4425 -
mean_absolute_percentage_error: 181.3898
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2275 -
mean_absolute_error: 0.3063 - mean_squared_error: 0.1947 - rmse: 0.4366 -
mean_absolute_percentage_error: 174.7571
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2251 -
mean_absolute_error: 0.3046 - mean_squared_error: 0.1928 - rmse: 0.4348 -
mean_absolute_percentage_error: 174.8599
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2240 -
mean_absolute_error: 0.3029 - mean_squared_error: 0.1919 - rmse: 0.4340 -
mean_absolute_percentage_error: 175.6192
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2234 -
```

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mean_absolute_error: 0.3041 - mean_squared_error: 0.1913 - rmse: 0.4329 -
mean_absolute_percentage_error: 174.3364
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2233 -
mean_absolute_error: 0.3036 - mean_squared_error: 0.1915 - rmse: 0.4323 -
mean_absolute_percentage_error: 175.6480
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2210 -
mean_absolute_error: 0.3021 - mean_squared_error: 0.1894 - rmse: 0.4323 -
mean_absolute_percentage_error: 172.8676
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2223 -
mean_absolute_error: 0.3026 - mean_squared_error: 0.1909 - rmse: 0.4318 -
mean_absolute_percentage_error: 169.9296
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2183 -
mean_absolute_error: 0.2997 - mean_squared_error: 0.1873 - rmse: 0.4283 -
mean_absolute_percentage_error: 172.5559
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2186 -
mean_absolute_error: 0.3002 - mean_squared_error: 0.1876 - rmse: 0.4294 -
mean_absolute_percentage_error: 171.1588
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2183 -
mean_absolute_error: 0.2985 - mean_squared_error: 0.1876 - rmse: 0.4284 -
mean_absolute_percentage_error: 171.3633
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2158 -
mean_absolute_error: 0.2979 - mean_squared_error: 0.1854 - rmse: 0.4269 -
mean_absolute_percentage_error: 167.0812
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2148 -
mean_absolute_error: 0.2966 - mean_squared_error: 0.1843 - rmse: 0.4249 -
mean_absolute_percentage_error: 167.0059
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2139 -
mean_absolute_error: 0.2963 - mean_squared_error: 0.1839 - rmse: 0.4245 -
mean_absolute_percentage_error: 170.4597
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2137 -
mean_absolute_error: 0.2961 - mean_squared_error: 0.1839 - rmse: 0.4242 -
mean_absolute_percentage_error: 169.2989
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2141 -
mean_absolute_error: 0.2967 - mean_squared_error: 0.1846 - rmse: 0.4259 -
mean_absolute_percentage_error: 173.2081
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2144 -
```

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mean_absolute_error: 0.2967 - mean_squared_error: 0.1848 - rmse: 0.4250 -
mean_absolute_percentage_error: 166.5127
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2087 -
mean_absolute_error: 0.2927 - mean_squared_error: 0.1796 - rmse: 0.4188 -
mean_absolute_percentage_error: 167.9250
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2111 -
mean_absolute_error: 0.2941 - mean_squared_error: 0.1820 - rmse: 0.4228 -
mean_absolute_percentage_error: 166.4502
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2164 -
mean_absolute_error: 0.2988 - mean_squared_error: 0.1874 - rmse: 0.4280 -
mean_absolute_percentage_error: 171.8600
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2074 -
mean_absolute_error: 0.2906 - mean_squared_error: 0.1787 - rmse: 0.4190 -
mean_absolute_percentage_error: 159.6297
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2067 -
mean_absolute_error: 0.2915 - mean_squared_error: 0.1779 - rmse: 0.4170 -
mean_absolute_percentage_error: 165.8446
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2080 -
mean_absolute_error: 0.2919 - mean_squared_error: 0.1792 - rmse: 0.4183 -
mean_absolute_percentage_error: 162.9046
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2064 -
mean_absolute_error: 0.2888 - mean_squared_error: 0.1777 - rmse: 0.4175 -
mean_absolute_percentage_error: 168.1204
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2083 -
mean_absolute_error: 0.2916 - mean_squared_error: 0.1798 - rmse: 0.4184 -
mean_absolute_percentage_error: 167.6996
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2053 -
mean_absolute_error: 0.2890 - mean_squared_error: 0.1769 - rmse: 0.4169 -
mean_absolute_percentage_error: 165.8935
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2074 -
mean_absolute_error: 0.2923 - mean_squared_error: 0.1790 - rmse: 0.4184 -
mean_absolute_percentage_error: 164.6650
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2068 -
mean_absolute_error: 0.2920 - mean_squared_error: 0.1786 - rmse: 0.4185 -
mean_absolute_percentage_error: 166.9806
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2042 -
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mean_absolute_error: 0.2885 - mean_squared_error: 0.1762 - rmse: 0.4155 -
mean_absolute_percentage_error: 164.7553
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2036 -
mean_absolute_error: 0.2886 - mean_squared_error: 0.1757 - rmse: 0.4154 -
mean_absolute_percentage_error: 165.9875
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2048 -
mean_absolute_error: 0.2896 - mean_squared_error: 0.1769 - rmse: 0.4164 -
mean_absolute_percentage_error: 163.1170
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2047 -
mean_absolute_error: 0.2900 - mean_squared_error: 0.1769 - rmse: 0.4166 -
mean_absolute_percentage_error: 164.3604
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2027 -
mean_absolute_error: 0.2880 - mean_squared_error: 0.1753 - rmse: 0.4146 -
mean_absolute_percentage_error: 165.5116
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2051 -
mean_absolute_error: 0.2905 - mean_squared_error: 0.1778 - rmse: 0.4172 -
mean_absolute_percentage_error: 164.4311
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2046 -
mean_absolute_error: 0.2892 - mean_squared_error: 0.1774 - rmse: 0.4162 -
mean_absolute_percentage_error: 170.4309
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2048 -
mean_absolute_error: 0.2899 - mean_squared_error: 0.1779 - rmse: 0.4170 -
mean_absolute_percentage_error: 165.4332
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2018 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1749 - rmse: 0.4140 -
mean_absolute_percentage_error: 163.3696
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2016 -
mean_absolute_error: 0.2881 - mean_squared_error: 0.1748 - rmse: 0.4135 -
mean_absolute_percentage_error: 166.2906
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1990 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1724 - rmse: 0.4115 -
mean_absolute_percentage_error: 166.2222
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2009 -
mean_absolute_error: 0.2873 - mean_squared_error: 0.1745 - rmse: 0.4129 -
mean_absolute_percentage_error: 166.3495
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1990 -
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mean_absolute_error: 0.2844 - mean_squared_error: 0.1726 - rmse: 0.4117 -
mean_absolute_percentage_error: 161.5947
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2002 -
mean_absolute_error: 0.2878 - mean_squared_error: 0.1738 - rmse: 0.4127 -
mean_absolute_percentage_error: 164.5688
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1992 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1729 - rmse: 0.4108 -
mean_absolute_percentage_error: 156.9509
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1972 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1710 - rmse: 0.4091 -
mean_absolute_percentage_error: 166.3340
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1975 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1714 - rmse: 0.4097 -
mean_absolute_percentage_error: 164.7776
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1963 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1705 - rmse: 0.4091 -
mean_absolute_percentage_error: 164.6268
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1963 -
mean_absolute_error: 0.2842 - mean_squared_error: 0.1705 - rmse: 0.4081 -
mean_absolute_percentage_error: 163.9692
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1964 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1706 - rmse: 0.4094 -
mean_absolute_percentage_error: 159.5278
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1937 -
mean_absolute_error: 0.2811 - mean_squared_error: 0.1681 - rmse: 0.4052 -
mean_absolute_percentage_error: 161.1348
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1959 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1704 - rmse: 0.4097 -
mean_absolute_percentage_error: 161.8040
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1960 -
mean_absolute_error: 0.2829 - mean_squared_error: 0.1706 - rmse: 0.4088 -
mean_absolute_percentage_error: 160.4861
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1949 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1695 - rmse: 0.4074 -
mean_absolute_percentage_error: 158.1346
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1945 -
```

```
mean_absolute_error: 0.2824 - mean_squared_error: 0.1691 - rmse: 0.4072 -
mean_absolute_percentage_error: 162.6785
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1946 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1694 - rmse: 0.4072 -
mean_absolute_percentage_error: 160.7441
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1954 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1704 - rmse: 0.4093 -
mean_absolute_percentage_error: 159.6551
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1926 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1677 - rmse: 0.4054 -
mean_absolute_percentage_error: 165.7444
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1934 -
mean_absolute_error: 0.2811 - mean_squared_error: 0.1684 - rmse: 0.4051 -
mean_absolute_percentage_error: 160.4229
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1925 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1677 - rmse: 0.4052 -
mean_absolute_percentage_error: 162.3794
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1936 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1690 - rmse: 0.4072 -
mean_absolute_percentage_error: 164.1031
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1925 -
mean_absolute_error: 0.2816 - mean_squared_error: 0.1679 - rmse: 0.4057 -
mean_absolute_percentage_error: 156.0495
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1929 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1683 - rmse: 0.4051 -
mean_absolute_percentage_error: 164.7401
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1672 - rmse: 0.4042 -
mean_absolute_percentage_error: 156.9333
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1922 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1676 - rmse: 0.4057 -
mean_absolute_percentage_error: 161.5556
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1952 -
mean_absolute_error: 0.2840 - mean_squared_error: 0.1706 - rmse: 0.4088 -
mean_absolute_percentage_error: 163.3649
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1912 -
```

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mean_absolute_error: 0.2805 - mean_squared_error: 0.1668 - rmse: 0.4044 -
mean_absolute_percentage_error: 165.1877
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1904 -
mean_absolute_error: 0.2797 - mean_squared_error: 0.1658 - rmse: 0.4029 -
mean_absolute_percentage_error: 153.0716
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1908 -
mean_absolute_error: 0.2793 - mean_squared_error: 0.1663 - rmse: 0.4036 -
mean_absolute_percentage_error: 159.2292
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1911 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1666 - rmse: 0.4026 -
mean_absolute_percentage_error: 155.4541
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1906 -
mean_absolute_error: 0.2790 - mean_squared_error: 0.1662 - rmse: 0.4028 -
mean_absolute_percentage_error: 159.0291
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1891 -
mean_absolute_error: 0.2788 - mean_squared_error: 0.1647 - rmse: 0.4008 -
mean_absolute_percentage_error: 156.9002
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1891 -
mean_absolute_error: 0.2788 - mean_squared_error: 0.1647 - rmse: 0.4018 -
mean_absolute_percentage_error: 155.4450
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1930 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1686 - rmse: 0.4054 -
mean_absolute_percentage_error: 163.2942
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1929 -
mean_absolute_error: 0.2801 - mean_squared_error: 0.1685 - rmse: 0.4060 -
mean_absolute_percentage_error: 160.6310
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1906 -
mean_absolute_error: 0.2797 - mean_squared_error: 0.1660 - rmse: 0.4025 -
mean_absolute_percentage_error: 157.1185
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1902 -
mean_absolute_error: 0.2785 - mean_squared_error: 0.1657 - rmse: 0.4024 -
mean_absolute_percentage_error: 155.7991
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2798 - mean_squared_error: 0.1675 - rmse: 0.4048 -
mean_absolute_percentage_error: 161.0568
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1896 -
```

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mean_absolute_error: 0.2790 - mean_squared_error: 0.1652 - rmse: 0.4035 -
mean_absolute_percentage_error: 157.3212
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1930 -
mean_absolute_error: 0.2806 - mean_squared_error: 0.1687 - rmse: 0.4062 -
mean_absolute_percentage_error: 154.5881
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1887 -
mean_absolute_error: 0.2777 - mean_squared_error: 0.1644 - rmse: 0.4010 -
mean_absolute_percentage_error: 156.5638
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1881 -
mean_absolute_error: 0.2776 - mean_squared_error: 0.1638 - rmse: 0.4005 -
mean_absolute_percentage_error: 162.0049
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1870 -
mean_absolute_error: 0.2765 - mean_squared_error: 0.1628 - rmse: 0.3988 -
mean_absolute_percentage_error: 154.9063
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1894 -
mean_absolute_error: 0.2784 - mean_squared_error: 0.1651 - rmse: 0.4018 -
mean_absolute_percentage_error: 155.2228
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1877 -
mean_absolute_error: 0.2767 - mean_squared_error: 0.1636 - rmse: 0.4010 -
mean_absolute_percentage_error: 155.7888
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1878 -
mean_absolute_error: 0.2771 - mean_squared_error: 0.1637 - rmse: 0.3999 -
mean_absolute_percentage_error: 150.2391
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1890 -
mean_absolute_error: 0.2783 - mean_squared_error: 0.1648 - rmse: 0.4006 -
mean_absolute_percentage_error: 158.2287
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1900 -
mean_absolute_error: 0.2783 - mean_squared_error: 0.1659 - rmse: 0.4033 -
mean_absolute_percentage_error: 155.5064
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1874 -
mean_absolute_error: 0.2758 - mean_squared_error: 0.1633 - rmse: 0.3995 -
mean_absolute_percentage_error: 155.3695
100/100 [==============================] - 0s 1ms/step - loss: 0.1876 -
mean_absolute_error: 0.2788 - mean_squared_error: 0.1637 - rmse: 0.3989 -
mean_absolute_percentage_error: 162.1886
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1
--------------------------------------------------------------------------
```

```
Training for fold 3 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4509 -
mean_absolute_error: 0.4412 - mean_squared_error: 0.3424 - rmse: 0.5733 -
mean_absolute_percentage_error: 210.6451
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3138 -
mean_absolute_error: 0.3515 - mean_squared_error: 0.2414 - rmse: 0.4871 -
mean_absolute_percentage_error: 201.9079
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2810 -
mean_absolute_error: 0.3362 - mean_squared_error: 0.2255 - rmse: 0.4719 -
mean_absolute_percentage_error: 201.6537
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2690 -
mean_absolute_error: 0.3320 - mean_squared_error: 0.2210 - rmse: 0.4653 -
mean_absolute_percentage_error: 198.8177
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2603 -
mean_absolute_error: 0.3273 - mean_squared_error: 0.2166 - rmse: 0.4616 -
mean_absolute_percentage_error: 194.3455
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2547 -
mean_absolute_error: 0.3251 - mean_squared_error: 0.2140 - rmse: 0.4585 -
mean_absolute_percentage_error: 194.9032
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2480 -
mean_absolute_error: 0.3214 - mean_squared_error: 0.2093 - rmse: 0.4545 -
mean_absolute_percentage_error: 192.1132
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2440 -
mean_absolute_error: 0.3200 - mean_squared_error: 0.2068 - rmse: 0.4503 -
mean_absolute_percentage_error: 190.4186
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2415 -
mean_absolute_error: 0.3171 - mean_squared_error: 0.2050 - rmse: 0.4483 -
mean_absolute_percentage_error: 191.2258
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2377 -
mean_absolute_error: 0.3174 - mean_squared_error: 0.2020 - rmse: 0.4453 -
mean_absolute_percentage_error: 193.8766
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2340 -
mean_absolute_error: 0.3127 - mean_squared_error: 0.1994 - rmse: 0.4432 -
mean_absolute_percentage_error: 194.7264
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2340 -
mean_absolute_error: 0.3134 - mean_squared_error: 0.2000 - rmse: 0.4428 -
```

```
mean_absolute_percentage_error: 187.1839
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2324 -
mean_absolute_error: 0.3120 - mean_squared_error: 0.1989 - rmse: 0.4429 -
mean_absolute_percentage_error: 187.6624
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2295 -
mean_absolute_error: 0.3098 - mean_squared_error: 0.1965 - rmse: 0.4388 -
mean_absolute_percentage_error: 188.1377
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2247 -
mean_absolute_error: 0.3053 - mean_squared_error: 0.1924 - rmse: 0.4345 -
mean_absolute_percentage_error: 186.6778
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2278 -
mean_absolute_error: 0.3086 - mean_squared_error: 0.1958 - rmse: 0.4385 -
mean_absolute_percentage_error: 184.6454
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2238 -
mean_absolute_error: 0.3059 - mean_squared_error: 0.1921 - rmse: 0.4343 -
mean_absolute_percentage_error: 180.9800
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2244 -
mean_absolute_error: 0.3058 - mean_squared_error: 0.1930 - rmse: 0.4355 -
mean_absolute_percentage_error: 184.5929
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2214 -
mean_absolute_error: 0.3043 - mean_squared_error: 0.1903 - rmse: 0.4316 -
mean_absolute_percentage_error: 185.6557
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2218 -
mean_absolute_error: 0.3042 - mean_squared_error: 0.1907 - rmse: 0.4336 -
mean_absolute_percentage_error: 187.7867
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2219 -
mean_absolute_error: 0.3034 - mean_squared_error: 0.1912 - rmse: 0.4340 -
mean_absolute_percentage_error: 177.9764
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2183 -
mean_absolute_error: 0.3009 - mean_squared_error: 0.1877 - rmse: 0.4286 -
mean_absolute_percentage_error: 182.2198
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2191 -
mean_absolute_error: 0.3022 - mean_squared_error: 0.1888 - rmse: 0.4306 -
mean_absolute_percentage_error: 178.9279
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2153 -
mean_absolute_error: 0.2979 - mean_squared_error: 0.1849 - rmse: 0.4262 -
```

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mean_absolute_percentage_error: 180.4364
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2158 -
mean_absolute_error: 0.2985 - mean_squared_error: 0.1857 - rmse: 0.4264 -
mean_absolute_percentage_error: 181.6299
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2143 -
mean_absolute_error: 0.2970 - mean_squared_error: 0.1844 - rmse: 0.4259 -
mean_absolute_percentage_error: 184.9407
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2170 -
mean_absolute_error: 0.3008 - mean_squared_error: 0.1871 - rmse: 0.4283 -
mean_absolute_percentage_error: 180.8176
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2175 -
mean_absolute_error: 0.3003 - mean_squared_error: 0.1878 - rmse: 0.4297 -
mean_absolute_percentage_error: 181.7052
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2132 -
mean_absolute_error: 0.2961 - mean_squared_error: 0.1835 - rmse: 0.4244 -
mean_absolute_percentage_error: 179.8578
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2138 -
mean_absolute_error: 0.2975 - mean_squared_error: 0.1842 - rmse: 0.4250 -
mean_absolute_percentage_error: 181.5186
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2086 -
mean_absolute_error: 0.2927 - mean_squared_error: 0.1795 - rmse: 0.4200 -
mean_absolute_percentage_error: 175.2349
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2133 -
mean_absolute_error: 0.2965 - mean_squared_error: 0.1842 - rmse: 0.4243 -
mean_absolute_percentage_error: 175.7809
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2086 -
mean_absolute_error: 0.2937 - mean_squared_error: 0.1796 - rmse: 0.4200 -
mean_absolute_percentage_error: 175.2212
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2079 -
mean_absolute_error: 0.2930 - mean_squared_error: 0.1792 - rmse: 0.4189 -
mean_absolute_percentage_error: 176.5308
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2087 -
mean_absolute_error: 0.2939 - mean_squared_error: 0.1801 - rmse: 0.4208 -
mean_absolute_percentage_error: 176.7798
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2067 -
mean_absolute_error: 0.2919 - mean_squared_error: 0.1784 - rmse: 0.4178 -
```

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mean_absolute_percentage_error: 180.4951
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2073 -
mean_absolute_error: 0.2925 - mean_squared_error: 0.1794 - rmse: 0.4195 -
mean_absolute_percentage_error: 178.9130
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2061 -
mean_absolute_error: 0.2917 - mean_squared_error: 0.1782 - rmse: 0.4182 -
mean_absolute_percentage_error: 178.5985
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2075 -
mean_absolute_error: 0.2933 - mean_squared_error: 0.1799 - rmse: 0.4198 -
mean_absolute_percentage_error: 173.8666
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2065 -
mean_absolute_error: 0.2934 - mean_squared_error: 0.1790 - rmse: 0.4180 -
mean_absolute_percentage_error: 177.1192
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2035 -
mean_absolute_error: 0.2909 - mean_squared_error: 0.1761 - rmse: 0.4153 -
mean_absolute_percentage_error: 174.3926
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2054 -
mean_absolute_error: 0.2932 - mean_squared_error: 0.1783 - rmse: 0.4171 -
mean_absolute_percentage_error: 177.3593
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2034 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1762 - rmse: 0.4159 -
mean_absolute_percentage_error: 177.9437
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2051 -
mean_absolute_error: 0.2930 - mean_squared_error: 0.1782 - rmse: 0.4173 -
mean_absolute_percentage_error: 178.1940
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2031 -
mean_absolute_error: 0.2905 - mean_squared_error: 0.1762 - rmse: 0.4153 -
mean_absolute_percentage_error: 172.7933
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1989 -
mean_absolute_error: 0.2863 - mean_squared_error: 0.1721 - rmse: 0.4117 -
mean_absolute_percentage_error: 174.1143
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2068 -
mean_absolute_error: 0.2935 - mean_squared_error: 0.1798 - rmse: 0.4194 -
mean_absolute_percentage_error: 171.6312
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2020 -
mean_absolute_error: 0.2900 - mean_squared_error: 0.1753 - rmse: 0.4148 -
```

```
mean_absolute_percentage_error: 176.5836
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2019 -
mean_absolute_error: 0.2894 - mean_squared_error: 0.1753 - rmse: 0.4144 -
mean_absolute_percentage_error: 168.8677
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2000 -
mean_absolute_error: 0.2878 - mean_squared_error: 0.1735 - rmse: 0.4119 -
mean_absolute_percentage_error: 173.7458
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2016 -
mean_absolute_error: 0.2907 - mean_squared_error: 0.1752 - rmse: 0.4145 -
mean_absolute_percentage_error: 175.9722
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1982 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1720 - rmse: 0.4113 -
mean_absolute_percentage_error: 176.7675
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1988 -
mean_absolute_error: 0.2874 - mean_squared_error: 0.1726 - rmse: 0.4113 -
mean_absolute_percentage_error: 178.2417
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1997 -
mean_absolute_error: 0.2888 - mean_squared_error: 0.1735 - rmse: 0.4121 -
mean_absolute_percentage_error: 169.7307
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2006 -
mean_absolute_error: 0.2888 - mean_squared_error: 0.1746 - rmse: 0.4129 -
mean_absolute_percentage_error: 176.7122
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2013 -
mean_absolute_error: 0.2895 - mean_squared_error: 0.1754 - rmse: 0.4143 -
mean_absolute_percentage_error: 175.7139
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1996 -
mean_absolute_error: 0.2880 - mean_squared_error: 0.1736 - rmse: 0.4120 -
mean_absolute_percentage_error: 176.0910
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1957 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1698 - rmse: 0.4075 -
mean_absolute_percentage_error: 173.1438
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1988 -
mean_absolute_error: 0.2870 - mean_squared_error: 0.1730 - rmse: 0.4112 -
mean_absolute_percentage_error: 172.0035
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1967 -
mean_absolute_error: 0.2851 - mean_squared_error: 0.1709 - rmse: 0.4103 -
```

```
mean_absolute_percentage_error: 172.6086
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2001 -
mean_absolute_error: 0.2885 - mean_squared_error: 0.1744 - rmse: 0.4142 -
mean_absolute_percentage_error: 175.6393
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1971 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1714 - rmse: 0.4099 -
mean_absolute_percentage_error: 174.7154
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1978 -
mean_absolute_error: 0.2876 - mean_squared_error: 0.1721 - rmse: 0.4106 -
mean_absolute_percentage_error: 168.3376
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1971 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1713 - rmse: 0.4098 -
mean_absolute_percentage_error: 176.0016
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1969 -
mean_absolute_error: 0.2861 - mean_squared_error: 0.1711 - rmse: 0.4106 -
mean_absolute_percentage_error: 170.8478
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1971 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1714 - rmse: 0.4101 -
mean_absolute_percentage_error: 169.4130
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1931 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1675 - rmse: 0.4049 -
mean_absolute_percentage_error: 175.4409
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1954 -
mean_absolute_error: 0.2843 - mean_squared_error: 0.1698 - rmse: 0.4087 -
mean_absolute_percentage_error: 172.8417
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1966 -
mean_absolute_error: 0.2856 - mean_squared_error: 0.1711 - rmse: 0.4094 -
mean_absolute_percentage_error: 175.0481
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1972 -
mean_absolute_error: 0.2856 - mean_squared_error: 0.1717 - rmse: 0.4100 -
mean_absolute_percentage_error: 175.6895
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1923 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1669 - rmse: 0.4047 -
mean_absolute_percentage_error: 169.0359
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1948 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1696 - rmse: 0.4071 -
```

```
mean_absolute_percentage_error: 171.7923
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1929 -
mean_absolute_error: 0.2836 - mean_squared_error: 0.1677 - rmse: 0.4050 -
mean_absolute_percentage_error: 170.5032
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1961 -
mean_absolute_error: 0.2849 - mean_squared_error: 0.1709 - rmse: 0.4089 -
mean_absolute_percentage_error: 175.0971
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1931 -
mean_absolute_error: 0.2824 - mean_squared_error: 0.1679 - rmse: 0.4054 -
mean_absolute_percentage_error: 172.4588
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1912 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1659 - rmse: 0.4029 -
mean_absolute_percentage_error: 170.5907
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1908 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1656 - rmse: 0.4028 -
mean_absolute_percentage_error: 172.8671
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1921 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1670 - rmse: 0.4042 -
mean_absolute_percentage_error: 168.6790
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1668 - rmse: 0.4032 -
mean_absolute_percentage_error: 175.9253
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1923 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1673 - rmse: 0.4044 -
mean_absolute_percentage_error: 165.9015
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1922 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1671 - rmse: 0.4049 -
mean_absolute_percentage_error: 168.5945
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1925 -
mean_absolute_error: 0.2829 - mean_squared_error: 0.1674 - rmse: 0.4049 -
mean_absolute_percentage_error: 174.0520
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1925 -
mean_absolute_error: 0.2821 - mean_squared_error: 0.1675 - rmse: 0.4054 -
mean_absolute_percentage_error: 169.2662
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1906 -
mean_absolute_error: 0.2806 - mean_squared_error: 0.1658 - rmse: 0.4026 -
```

```
mean_absolute_percentage_error: 173.1811
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1907 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1659 - rmse: 0.4024 -
mean_absolute_percentage_error: 170.8713
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1941 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1692 - rmse: 0.4066 -
mean_absolute_percentage_error: 172.4542
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1915 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1666 - rmse: 0.4032 -
mean_absolute_percentage_error: 162.1957
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1923 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1673 - rmse: 0.4040 -
mean_absolute_percentage_error: 172.9409
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1897 -
mean_absolute_error: 0.2792 - mean_squared_error: 0.1648 - rmse: 0.4018 -
mean_absolute_percentage_error: 168.0602
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1895 -
mean_absolute_error: 0.2786 - mean_squared_error: 0.1647 - rmse: 0.4019 -
mean_absolute_percentage_error: 173.9114
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1893 -
mean_absolute_error: 0.2795 - mean_squared_error: 0.1644 - rmse: 0.4011 -
mean_absolute_percentage_error: 176.6982
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1897 -
mean_absolute_error: 0.2797 - mean_squared_error: 0.1649 - rmse: 0.4020 -
mean_absolute_percentage_error: 174.9802
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1909 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1661 - rmse: 0.4039 -
mean_absolute_percentage_error: 173.3783
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1894 -
mean_absolute_error: 0.2784 - mean_squared_error: 0.1646 - rmse: 0.4011 -
mean_absolute_percentage_error: 173.1684
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1902 -
mean_absolute_error: 0.2789 - mean_squared_error: 0.1654 - rmse: 0.4024 -
mean_absolute_percentage_error: 167.5861
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1910 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1662 - rmse: 0.4025 -
```

```
mean_absolute_percentage_error: 162.0394
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1905 -
mean_absolute_error: 0.2794 - mean_squared_error: 0.1657 - rmse: 0.4017 -
mean_absolute_percentage_error: 168.6799
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1876 -
mean_absolute_error: 0.2767 - mean_squared_error: 0.1628 - rmse: 0.3989 -
mean_absolute_percentage_error: 166.9600
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1911 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1663 - rmse: 0.4034 -
mean_absolute_percentage_error: 170.2619
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1895 -
mean_absolute_error: 0.2791 - mean_squared_error: 0.1646 - rmse: 0.4017 -
mean_absolute_percentage_error: 175.0758
100/100 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2824 - mean_squared_error: 0.1674 - rmse: 0.4036 -
mean_absolute_percentage_error: 161.8000
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1
------------------------------------------------------------------------
Training for fold 4 ...
Epoch 1/100
210/210 [==============================] - 2s 2ms/step - loss: 0.4519 -
mean_absolute_error: 0.4442 - mean_squared_error: 0.3460 - rmse: 0.5779 -
mean_absolute_percentage_error: 209.2121
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3072 -
mean_absolute_error: 0.3520 - mean_squared_error: 0.2417 - rmse: 0.4881 -
mean_absolute_percentage_error: 187.2416
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2791 -
mean_absolute_error: 0.3405 - mean_squared_error: 0.2287 - rmse: 0.4740 -
mean_absolute_percentage_error: 193.7646
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2645 -
mean_absolute_error: 0.3337 - mean_squared_error: 0.2217 - rmse: 0.4669 -
mean_absolute_percentage_error: 190.3514
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2546 -
mean_absolute_error: 0.3285 - mean_squared_error: 0.2159 - rmse: 0.4607 -
mean_absolute_percentage_error: 193.0035
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2516 -
mean_absolute_error: 0.3281 - mean_squared_error: 0.2152 - rmse: 0.4601 -
mean_absolute_percentage_error: 191.6000
```

```
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2450 -
mean_absolute_error: 0.3234 - mean_squared_error: 0.2105 - rmse: 0.4557 -
mean_absolute_percentage_error: 185.3627
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2435 -
mean_absolute_error: 0.3238 - mean_squared_error: 0.2100 - rmse: 0.4548 -
mean_absolute_percentage_error: 188.5663
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2378 -
mean_absolute_error: 0.3198 - mean_squared_error: 0.2054 - rmse: 0.4494 -
mean_absolute_percentage_error: 190.0367
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2346 -
mean_absolute_error: 0.3175 - mean_squared_error: 0.2030 - rmse: 0.4467 -
mean_absolute_percentage_error: 187.1731
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2343 -
mean_absolute_error: 0.3179 - mean_squared_error: 0.2030 - rmse: 0.4469 -
mean_absolute_percentage_error: 186.7010
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2318 -
mean_absolute_error: 0.3152 - mean_squared_error: 0.2009 - rmse: 0.4441 -
mean_absolute_percentage_error: 186.3049
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2299 -
mean_absolute_error: 0.3143 - mean_squared_error: 0.1994 - rmse: 0.4424 -
mean_absolute_percentage_error: 184.4793
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2273 -
mean_absolute_error: 0.3124 - mean_squared_error: 0.1970 - rmse: 0.4396 -
mean_absolute_percentage_error: 180.5761
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2272 -
mean_absolute_error: 0.3134 - mean_squared_error: 0.1970 - rmse: 0.4393 -
mean_absolute_percentage_error: 183.7581
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2263 -
mean_absolute_error: 0.3123 - mean_squared_error: 0.1966 - rmse: 0.4386 -
mean_absolute_percentage_error: 184.2996
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2218 -
mean_absolute_error: 0.3081 - mean_squared_error: 0.1922 - rmse: 0.4338 -
mean_absolute_percentage_error: 184.4082
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2220 -
mean_absolute_error: 0.3084 - mean_squared_error: 0.1927 - rmse: 0.4360 -
mean_absolute_percentage_error: 175.3297
```

```
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2192 -
mean_absolute_error: 0.3052 - mean_squared_error: 0.1901 - rmse: 0.4317 -
mean_absolute_percentage_error: 177.8265
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2191 -
mean_absolute_error: 0.3064 - mean_squared_error: 0.1901 - rmse: 0.4315 -
mean_absolute_percentage_error: 178.7901
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2218 -
mean_absolute_error: 0.3087 - mean_squared_error: 0.1929 - rmse: 0.4352 -
mean_absolute_percentage_error: 183.0685
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2160 -
mean_absolute_error: 0.3035 - mean_squared_error: 0.1875 - rmse: 0.4292 -
mean_absolute_percentage_error: 176.7140
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2161 -
mean_absolute_error: 0.3020 - mean_squared_error: 0.1876 - rmse: 0.4285 -
mean_absolute_percentage_error: 176.1197
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2140 -
mean_absolute_error: 0.3017 - mean_squared_error: 0.1858 - rmse: 0.4266 -
mean_absolute_percentage_error: 174.8053
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2176 -
mean_absolute_error: 0.3045 - mean_squared_error: 0.1890 - rmse: 0.4314 -
mean_absolute_percentage_error: 178.0419
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2146 -
mean_absolute_error: 0.3029 - mean_squared_error: 0.1863 - rmse: 0.4276 -
mean_absolute_percentage_error: 175.9824
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2116 -
mean_absolute_error: 0.2988 - mean_squared_error: 0.1836 - rmse: 0.4239 -
mean_absolute_percentage_error: 173.0965
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2128 -
mean_absolute_error: 0.2996 - mean_squared_error: 0.1846 - rmse: 0.4251 -
mean_absolute_percentage_error: 175.1485
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2128 -
mean_absolute_error: 0.3006 - mean_squared_error: 0.1847 - rmse: 0.4256 -
mean_absolute_percentage_error: 178.3903
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2118 -
mean_absolute_error: 0.2989 - mean_squared_error: 0.1841 - rmse: 0.4250 -
mean_absolute_percentage_error: 177.4532
```

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Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2101 -
mean_absolute_error: 0.2973 - mean_squared_error: 0.1824 - rmse: 0.4223 -
mean_absolute_percentage_error: 173.2086
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2086 -
mean_absolute_error: 0.2957 - mean_squared_error: 0.1810 - rmse: 0.4214 -
mean_absolute_percentage_error: 171.3884
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2078 -
mean_absolute_error: 0.2950 - mean_squared_error: 0.1803 - rmse: 0.4213 -
mean_absolute_percentage_error: 173.1154
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2085 -
mean_absolute_error: 0.2965 - mean_squared_error: 0.1810 - rmse: 0.4212 -
mean_absolute_percentage_error: 172.8522
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2051 -
mean_absolute_error: 0.2927 - mean_squared_error: 0.1777 - rmse: 0.4179 -
mean_absolute_percentage_error: 171.4987
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2060 -
mean_absolute_error: 0.2939 - mean_squared_error: 0.1787 - rmse: 0.4182 -
mean_absolute_percentage_error: 176.5431
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2084 -
mean_absolute_error: 0.2967 - mean_squared_error: 0.1811 - rmse: 0.4217 -
mean_absolute_percentage_error: 177.5306
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2052 -
mean_absolute_error: 0.2937 - mean_squared_error: 0.1780 - rmse: 0.4178 -
mean_absolute_percentage_error: 167.2537
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2049 -
mean_absolute_error: 0.2921 - mean_squared_error: 0.1780 - rmse: 0.4175 -
mean_absolute_percentage_error: 173.9869
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2021 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1751 - rmse: 0.4142 -
mean_absolute_percentage_error: 165.6373
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2031 -
mean_absolute_error: 0.2909 - mean_squared_error: 0.1762 - rmse: 0.4160 -
mean_absolute_percentage_error: 168.1980
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2015 -
mean_absolute_error: 0.2898 - mean_squared_error: 0.1746 - rmse: 0.4139 -
mean_absolute_percentage_error: 167.6475
```

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Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2011 -
mean_absolute_error: 0.2892 - mean_squared_error: 0.1744 - rmse: 0.4137 -
mean_absolute_percentage_error: 160.3014
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1981 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1716 - rmse: 0.4095 -
mean_absolute_percentage_error: 164.8745
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2022 -
mean_absolute_error: 0.2899 - mean_squared_error: 0.1757 - rmse: 0.4150 -
mean_absolute_percentage_error: 165.4900
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2009 -
mean_absolute_error: 0.2888 - mean_squared_error: 0.1745 - rmse: 0.4138 -
mean_absolute_percentage_error: 165.0960
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1982 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1720 - rmse: 0.4118 -
mean_absolute_percentage_error: 168.7633
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1987 -
mean_absolute_error: 0.2879 - mean_squared_error: 0.1725 - rmse: 0.4114 -
mean_absolute_percentage_error: 167.9534
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1961 -
mean_absolute_error: 0.2863 - mean_squared_error: 0.1701 - rmse: 0.4076 -
mean_absolute_percentage_error: 163.6566
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1986 -
mean_absolute_error: 0.2877 - mean_squared_error: 0.1727 - rmse: 0.4120 -
mean_absolute_percentage_error: 171.0412
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1959 -
mean_absolute_error: 0.2849 - mean_squared_error: 0.1702 - rmse: 0.4071 -
mean_absolute_percentage_error: 163.0995
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1972 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1715 - rmse: 0.4101 -
mean_absolute_percentage_error: 161.7554
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1939 -
mean_absolute_error: 0.2843 - mean_squared_error: 0.1686 - rmse: 0.4065 -
mean_absolute_percentage_error: 164.2946
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1952 -
mean_absolute_error: 0.2843 - mean_squared_error: 0.1697 - rmse: 0.4085 -
mean_absolute_percentage_error: 166.7696
```

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Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1945 -
mean_absolute_error: 0.2837 - mean_squared_error: 0.1690 - rmse: 0.4067 -
mean_absolute_percentage_error: 168.7870
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1924 -
mean_absolute_error: 0.2829 - mean_squared_error: 0.1672 - rmse: 0.4043 -
mean_absolute_percentage_error: 164.2033
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1947 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1696 - rmse: 0.4071 -
mean_absolute_percentage_error: 165.6360
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1956 -
mean_absolute_error: 0.2842 - mean_squared_error: 0.1704 - rmse: 0.4083 -
mean_absolute_percentage_error: 171.0993
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1926 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1676 - rmse: 0.4047 -
mean_absolute_percentage_error: 163.1547
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1949 -
mean_absolute_error: 0.2836 - mean_squared_error: 0.1697 - rmse: 0.4077 -
mean_absolute_percentage_error: 160.1563
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1926 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1676 - rmse: 0.4046 -
mean_absolute_percentage_error: 166.9691
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1943 -
mean_absolute_error: 0.2837 - mean_squared_error: 0.1694 - rmse: 0.4075 -
mean_absolute_percentage_error: 166.2285
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1920 -
mean_absolute_error: 0.2816 - mean_squared_error: 0.1673 - rmse: 0.4045 -
mean_absolute_percentage_error: 166.4407
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1914 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1667 - rmse: 0.4039 -
mean_absolute_percentage_error: 166.1079
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1925 -
mean_absolute_error: 0.2823 - mean_squared_error: 0.1677 - rmse: 0.4051 -
mean_absolute_percentage_error: 160.2206
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1915 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1669 - rmse: 0.4045 -
mean_absolute_percentage_error: 161.7950
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Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1897 -
mean_absolute_error: 0.2806 - mean_squared_error: 0.1650 - rmse: 0.4019 -
mean_absolute_percentage_error: 159.0506
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1892 -
mean_absolute_error: 0.2781 - mean_squared_error: 0.1647 - rmse: 0.4006 -
mean_absolute_percentage_error: 162.3587
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1913 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1666 - rmse: 0.4051 -
mean_absolute_percentage_error: 166.1031
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1674 - rmse: 0.4053 -
mean_absolute_percentage_error: 159.8987
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1897 -
mean_absolute_error: 0.2795 - mean_squared_error: 0.1652 - rmse: 0.4022 -
mean_absolute_percentage_error: 164.1216
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1897 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1651 - rmse: 0.4021 -
mean_absolute_percentage_error: 159.7859
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1898 -
mean_absolute_error: 0.2805 - mean_squared_error: 0.1653 - rmse: 0.4025 -
mean_absolute_percentage_error: 157.2497
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1905 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1660 - rmse: 0.4024 -
mean_absolute_percentage_error: 163.8767
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1891 -
mean_absolute_error: 0.2794 - mean_squared_error: 0.1648 - rmse: 0.4015 -
mean_absolute_percentage_error: 162.8839
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1900 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1656 - rmse: 0.4023 -
mean_absolute_percentage_error: 161.3531
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1905 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1663 - rmse: 0.4030 -
mean_absolute_percentage_error: 164.5685
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1894 -
mean_absolute_error: 0.2786 - mean_squared_error: 0.1652 - rmse: 0.4027 -
mean_absolute_percentage_error: 159.5076
```

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Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1914 -
mean_absolute_error: 0.2816 - mean_squared_error: 0.1671 - rmse: 0.4041 -
mean_absolute_percentage_error: 161.0216
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1884 -
mean_absolute_error: 0.2795 - mean_squared_error: 0.1642 - rmse: 0.4003 -
mean_absolute_percentage_error: 163.4467
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1880 -
mean_absolute_error: 0.2787 - mean_squared_error: 0.1639 - rmse: 0.3999 -
mean_absolute_percentage_error: 165.7504
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1890 -
mean_absolute_error: 0.2794 - mean_squared_error: 0.1649 - rmse: 0.4016 -
mean_absolute_percentage_error: 162.1961
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1902 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1662 - rmse: 0.4029 -
mean_absolute_percentage_error: 153.4976
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1876 -
mean_absolute_error: 0.2783 - mean_squared_error: 0.1636 - rmse: 0.3998 -
mean_absolute_percentage_error: 160.9414
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1912 -
mean_absolute_error: 0.2821 - mean_squared_error: 0.1673 - rmse: 0.4035 -
mean_absolute_percentage_error: 157.6019
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1857 -
mean_absolute_error: 0.2754 - mean_squared_error: 0.1619 - rmse: 0.3974 -
mean_absolute_percentage_error: 161.3121
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1850 -
mean_absolute_error: 0.2767 - mean_squared_error: 0.1613 - rmse: 0.3966 -
mean_absolute_percentage_error: 162.9254
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1865 -
mean_absolute_error: 0.2772 - mean_squared_error: 0.1627 - rmse: 0.3994 -
mean_absolute_percentage_error: 161.1539
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1866 -
mean_absolute_error: 0.2778 - mean_squared_error: 0.1628 - rmse: 0.3995 -
mean_absolute_percentage_error: 156.5869
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1851 -
mean_absolute_error: 0.2757 - mean_squared_error: 0.1614 - rmse: 0.3976 -
mean_absolute_percentage_error: 158.2914
```

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Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1877 -
mean_absolute_error: 0.2789 - mean_squared_error: 0.1640 - rmse: 0.4004 -
mean_absolute_percentage_error: 162.9384
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1865 -
mean_absolute_error: 0.2769 - mean_squared_error: 0.1627 - rmse: 0.4001 -
mean_absolute_percentage_error: 162.4213
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1893 -
mean_absolute_error: 0.2806 - mean_squared_error: 0.1656 - rmse: 0.4025 -
mean_absolute_percentage_error: 160.1466
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1846 -
mean_absolute_error: 0.2753 - mean_squared_error: 0.1610 - rmse: 0.3966 -
mean_absolute_percentage_error: 160.7645
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1884 -
mean_absolute_error: 0.2791 - mean_squared_error: 0.1647 - rmse: 0.4017 -
mean_absolute_percentage_error: 159.2262
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1846 -
mean_absolute_error: 0.2757 - mean_squared_error: 0.1610 - rmse: 0.3962 -
mean_absolute_percentage_error: 160.8458
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1857 -
mean_absolute_error: 0.2765 - mean_squared_error: 0.1620 - rmse: 0.3978 -
mean_absolute_percentage_error: 160.9659
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1882 -
mean_absolute_error: 0.2791 - mean_squared_error: 0.1645 - rmse: 0.4010 -
mean_absolute_percentage_error: 159.4953
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1851 -
mean_absolute_error: 0.2770 - mean_squared_error: 0.1614 - rmse: 0.3968 -
mean_absolute_percentage_error: 161.8493
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1870 -
mean_absolute_error: 0.2780 - mean_squared_error: 0.1635 - rmse: 0.4000 -
mean_absolute_percentage_error: 156.6229
100/100 [==============================] - 0s 1ms/step - loss: 0.1897 -
mean_absolute_error: 0.2820 - mean_squared_error: 0.1662 - rmse: 0.4023 -
mean_absolute_percentage_error: 162.9948
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1
--------------------------------------------------------------------------------
Training for fold 5 ...
Epoch 1/100
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210/210 [==============================] - 1s 2ms/step - loss: 0.4614 -
mean_absolute_error: 0.4515 - mean_squared_error: 0.3529 - rmse: 0.5824 -
mean_absolute_percentage_error: 191.9099
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3117 -
mean_absolute_error: 0.3531 - mean_squared_error: 0.2412 - rmse: 0.4882 -
mean_absolute_percentage_error: 191.0261
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2818 -
mean_absolute_error: 0.3409 - mean_squared_error: 0.2279 - rmse: 0.4745 -
mean_absolute_percentage_error: 191.0454
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2671 -
mean_absolute_error: 0.3348 - mean_squared_error: 0.2211 - rmse: 0.4659 -
mean_absolute_percentage_error: 192.1752
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2602 -
mean_absolute_error: 0.3333 - mean_squared_error: 0.2184 - rmse: 0.4644 -
mean_absolute_percentage_error: 184.0381
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2547 -
mean_absolute_error: 0.3290 - mean_squared_error: 0.2157 - rmse: 0.4605 -
mean_absolute_percentage_error: 188.3742
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2482 -
mean_absolute_error: 0.3263 - mean_squared_error: 0.2109 - rmse: 0.4551 -
mean_absolute_percentage_error: 190.1467
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2441 -
mean_absolute_error: 0.3230 - mean_squared_error: 0.2083 - rmse: 0.4518 -
mean_absolute_percentage_error: 185.3032
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2407 -
mean_absolute_error: 0.3212 - mean_squared_error: 0.2059 - rmse: 0.4499 -
mean_absolute_percentage_error: 187.9104
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2366 -
mean_absolute_error: 0.3188 - mean_squared_error: 0.2028 - rmse: 0.4465 -
mean_absolute_percentage_error: 179.6094
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2346 -
mean_absolute_error: 0.3170 - mean_squared_error: 0.2017 - rmse: 0.4444 -
mean_absolute_percentage_error: 185.8782
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2327 -
mean_absolute_error: 0.3158 - mean_squared_error: 0.2001 - rmse: 0.4431 -
mean_absolute_percentage_error: 185.3016
Epoch 13/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.2293 -
mean_absolute_error: 0.3134 - mean_squared_error: 0.1976 - rmse: 0.4404 -
mean_absolute_percentage_error: 184.9440
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2293 -
mean_absolute_error: 0.3126 - mean_squared_error: 0.1977 - rmse: 0.4399 -
mean_absolute_percentage_error: 183.6602
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2279 -
mean_absolute_error: 0.3120 - mean_squared_error: 0.1967 - rmse: 0.4394 -
mean_absolute_percentage_error: 179.5243
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2261 -
mean_absolute_error: 0.3113 - mean_squared_error: 0.1954 - rmse: 0.4383 -
mean_absolute_percentage_error: 178.8999
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2243 -
mean_absolute_error: 0.3083 - mean_squared_error: 0.1938 - rmse: 0.4364 -
mean_absolute_percentage_error: 177.4484
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2228 -
mean_absolute_error: 0.3074 - mean_squared_error: 0.1925 - rmse: 0.4346 -
mean_absolute_percentage_error: 176.2689
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2205 -
mean_absolute_error: 0.3037 - mean_squared_error: 0.1905 - rmse: 0.4322 -
mean_absolute_percentage_error: 175.5840
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2210 -
mean_absolute_error: 0.3050 - mean_squared_error: 0.1914 - rmse: 0.4330 -
mean_absolute_percentage_error: 174.9477
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2171 -
mean_absolute_error: 0.3022 - mean_squared_error: 0.1876 - rmse: 0.4296 -
mean_absolute_percentage_error: 171.7255
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2178 -
mean_absolute_error: 0.3031 - mean_squared_error: 0.1883 - rmse: 0.4309 -
mean_absolute_percentage_error: 175.6789
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2158 -
mean_absolute_error: 0.3007 - mean_squared_error: 0.1865 - rmse: 0.4285 -
mean_absolute_percentage_error: 173.5760
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2166 -
mean_absolute_error: 0.3013 - mean_squared_error: 0.1874 - rmse: 0.4278 -
mean_absolute_percentage_error: 176.6013
Epoch 25/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.2148 -
mean_absolute_error: 0.2995 - mean_squared_error: 0.1852 - rmse: 0.4262 -
mean_absolute_percentage_error: 170.9957
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2145 -
mean_absolute_error: 0.2993 - mean_squared_error: 0.1852 - rmse: 0.4264 -
mean_absolute_percentage_error: 176.5994
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2132 -
mean_absolute_error: 0.2982 - mean_squared_error: 0.1843 - rmse: 0.4251 -
mean_absolute_percentage_error: 176.3928
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2125 -
mean_absolute_error: 0.2969 - mean_squared_error: 0.1836 - rmse: 0.4244 -
mean_absolute_percentage_error: 171.9461
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2120 -
mean_absolute_error: 0.2968 - mean_squared_error: 0.1834 - rmse: 0.4239 -
mean_absolute_percentage_error: 169.4134
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2098 -
mean_absolute_error: 0.2949 - mean_squared_error: 0.1813 - rmse: 0.4221 -
mean_absolute_percentage_error: 171.1437
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2095 -
mean_absolute_error: 0.2952 - mean_squared_error: 0.1812 - rmse: 0.4221 -
mean_absolute_percentage_error: 172.0547
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2129 -
mean_absolute_error: 0.2977 - mean_squared_error: 0.1843 - rmse: 0.4254 -
mean_absolute_percentage_error: 172.3641
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2120 -
mean_absolute_error: 0.2964 - mean_squared_error: 0.1837 - rmse: 0.4246 -
mean_absolute_percentage_error: 168.5007
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2082 -
mean_absolute_error: 0.2937 - mean_squared_error: 0.1801 - rmse: 0.4204 -
mean_absolute_percentage_error: 171.1852
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2095 -
mean_absolute_error: 0.2950 - mean_squared_error: 0.1814 - rmse: 0.4221 -
mean_absolute_percentage_error: 175.2216
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2074 -
mean_absolute_error: 0.2925 - mean_squared_error: 0.1793 - rmse: 0.4193 -
mean_absolute_percentage_error: 168.6078
Epoch 37/100
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210/210 [==============================] - 0s 2ms/step - loss: 0.2069 -
mean_absolute_error: 0.2933 - mean_squared_error: 0.1789 - rmse: 0.4192 -
mean_absolute_percentage_error: 167.6501
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2082 -
mean_absolute_error: 0.2943 - mean_squared_error: 0.1802 - rmse: 0.4204 -
mean_absolute_percentage_error: 176.0078
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2050 -
mean_absolute_error: 0.2909 - mean_squared_error: 0.1772 - rmse: 0.4168 -
mean_absolute_percentage_error: 175.5959
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2054 -
mean_absolute_error: 0.2908 - mean_squared_error: 0.1777 - rmse: 0.4176 -
mean_absolute_percentage_error: 170.9124
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2048 -
mean_absolute_error: 0.2902 - mean_squared_error: 0.1773 - rmse: 0.4169 -
mean_absolute_percentage_error: 171.6289
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2060 -
mean_absolute_error: 0.2914 - mean_squared_error: 0.1785 - rmse: 0.4180 -
mean_absolute_percentage_error: 165.5771
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2079 -
mean_absolute_error: 0.2944 - mean_squared_error: 0.1805 - rmse: 0.4208 -
mean_absolute_percentage_error: 164.9481
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2059 -
mean_absolute_error: 0.2930 - mean_squared_error: 0.1785 - rmse: 0.4173 -
mean_absolute_percentage_error: 170.5602
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2047 -
mean_absolute_error: 0.2913 - mean_squared_error: 0.1777 - rmse: 0.4171 -
mean_absolute_percentage_error: 164.3190
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2081 -
mean_absolute_error: 0.2951 - mean_squared_error: 0.1810 - rmse: 0.4209 -
mean_absolute_percentage_error: 174.5328
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2055 -
mean_absolute_error: 0.2915 - mean_squared_error: 0.1785 - rmse: 0.4188 -
mean_absolute_percentage_error: 166.1080
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2022 -
mean_absolute_error: 0.2895 - mean_squared_error: 0.1754 - rmse: 0.4151 -
mean_absolute_percentage_error: 175.2286
Epoch 49/100
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210/210 [==============================] - 0s 2ms/step - loss: 0.2042 -
mean_absolute_error: 0.2909 - mean_squared_error: 0.1775 - rmse: 0.4178 -
mean_absolute_percentage_error: 160.9657
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2025 -
mean_absolute_error: 0.2888 - mean_squared_error: 0.1758 - rmse: 0.4149 -
mean_absolute_percentage_error: 165.9846
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2022 -
mean_absolute_error: 0.2889 - mean_squared_error: 0.1756 - rmse: 0.4148 -
mean_absolute_percentage_error: 170.9747
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2031 -
mean_absolute_error: 0.2901 - mean_squared_error: 0.1767 - rmse: 0.4161 -
mean_absolute_percentage_error: 165.9496
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2039 -
mean_absolute_error: 0.2910 - mean_squared_error: 0.1776 - rmse: 0.4161 -
mean_absolute_percentage_error: 171.7158
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2004 -
mean_absolute_error: 0.2880 - mean_squared_error: 0.1744 - rmse: 0.4138 -
mean_absolute_percentage_error: 165.3341
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1993 -
mean_absolute_error: 0.2873 - mean_squared_error: 0.1736 - rmse: 0.4130 -
mean_absolute_percentage_error: 166.5134
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1997 -
mean_absolute_error: 0.2877 - mean_squared_error: 0.1740 - rmse: 0.4129 -
mean_absolute_percentage_error: 165.2690
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1994 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1736 - rmse: 0.4130 -
mean_absolute_percentage_error: 163.2523
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2025 -
mean_absolute_error: 0.2901 - mean_squared_error: 0.1769 - rmse: 0.4155 -
mean_absolute_percentage_error: 169.0120
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1997 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1741 - rmse: 0.4124 -
mean_absolute_percentage_error: 166.3931
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1985 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1729 - rmse: 0.4105 -
mean_absolute_percentage_error: 163.3593
Epoch 61/100
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210/210 [==============================] - 0s 2ms/step - loss: 0.1983 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1729 - rmse: 0.4116 -
mean_absolute_percentage_error: 160.1410
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1982 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1729 - rmse: 0.4115 -
mean_absolute_percentage_error: 165.9889
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1975 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1723 - rmse: 0.4111 -
mean_absolute_percentage_error: 162.5076
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1962 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1711 - rmse: 0.4094 -
mean_absolute_percentage_error: 161.6232
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1975 -
mean_absolute_error: 0.2875 - mean_squared_error: 0.1724 - rmse: 0.4104 -
mean_absolute_percentage_error: 160.2717
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2012 -
mean_absolute_error: 0.2899 - mean_squared_error: 0.1760 - rmse: 0.4138 -
mean_absolute_percentage_error: 167.9752
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1999 -
mean_absolute_error: 0.2888 - mean_squared_error: 0.1747 - rmse: 0.4137 -
mean_absolute_percentage_error: 162.8528
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1968 -
mean_absolute_error: 0.2856 - mean_squared_error: 0.1717 - rmse: 0.4099 -
mean_absolute_percentage_error: 162.9310
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1961 -
mean_absolute_error: 0.2857 - mean_squared_error: 0.1710 - rmse: 0.4091 -
mean_absolute_percentage_error: 165.1062
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1950 -
mean_absolute_error: 0.2844 - mean_squared_error: 0.1700 - rmse: 0.4087 -
mean_absolute_percentage_error: 164.8458
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1978 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1730 - rmse: 0.4119 -
mean_absolute_percentage_error: 165.4522
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1947 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1700 - rmse: 0.4078 -
mean_absolute_percentage_error: 167.6380
Epoch 73/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2853 - mean_squared_error: 0.1705 - rmse: 0.4079 -
mean_absolute_percentage_error: 167.9107
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1957 -
mean_absolute_error: 0.2863 - mean_squared_error: 0.1711 - rmse: 0.4095 -
mean_absolute_percentage_error: 164.1642
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1947 -
mean_absolute_error: 0.2841 - mean_squared_error: 0.1702 - rmse: 0.4083 -
mean_absolute_percentage_error: 163.7502
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2843 - mean_squared_error: 0.1699 - rmse: 0.4085 -
mean_absolute_percentage_error: 163.9346
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1946 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1700 - rmse: 0.4076 -
mean_absolute_percentage_error: 162.4326
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1932 -
mean_absolute_error: 0.2845 - mean_squared_error: 0.1689 - rmse: 0.4070 -
mean_absolute_percentage_error: 159.3863
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1684 - rmse: 0.4063 -
mean_absolute_percentage_error: 161.1442
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1924 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1682 - rmse: 0.4055 -
mean_absolute_percentage_error: 159.9832
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1922 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1681 - rmse: 0.4057 -
mean_absolute_percentage_error: 166.8212
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1923 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1684 - rmse: 0.4067 -
mean_absolute_percentage_error: 158.8549
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1914 -
mean_absolute_error: 0.2817 - mean_squared_error: 0.1673 - rmse: 0.4056 -
mean_absolute_percentage_error: 159.6155
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1903 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1663 - rmse: 0.4035 -
mean_absolute_percentage_error: 161.8345
Epoch 85/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1918 -
mean_absolute_error: 0.2824 - mean_squared_error: 0.1679 - rmse: 0.4061 -
mean_absolute_percentage_error: 159.4652
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1921 -
mean_absolute_error: 0.2826 - mean_squared_error: 0.1682 - rmse: 0.4049 -
mean_absolute_percentage_error: 161.9424
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1930 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1690 - rmse: 0.4072 -
mean_absolute_percentage_error: 167.0903
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1929 -
mean_absolute_error: 0.2840 - mean_squared_error: 0.1690 - rmse: 0.4070 -
mean_absolute_percentage_error: 158.6069
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1920 -
mean_absolute_error: 0.2822 - mean_squared_error: 0.1681 - rmse: 0.4061 -
mean_absolute_percentage_error: 160.9646
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1924 -
mean_absolute_error: 0.2830 - mean_squared_error: 0.1684 - rmse: 0.4066 -
mean_absolute_percentage_error: 163.1230
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1912 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1674 - rmse: 0.4050 -
mean_absolute_percentage_error: 160.6415
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1932 -
mean_absolute_error: 0.2842 - mean_squared_error: 0.1693 - rmse: 0.4073 -
mean_absolute_percentage_error: 161.5956
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1910 -
mean_absolute_error: 0.2815 - mean_squared_error: 0.1671 - rmse: 0.4055 -
mean_absolute_percentage_error: 155.5371
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1914 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1675 - rmse: 0.4046 -
mean_absolute_percentage_error: 155.9842
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1900 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1663 - rmse: 0.4031 -
mean_absolute_percentage_error: 165.5214
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1898 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1661 - rmse: 0.4036 -
mean_absolute_percentage_error: 158.0300
Epoch 97/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1920 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1683 - rmse: 0.4065 -
mean_absolute_percentage_error: 157.7976
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1915 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1678 - rmse: 0.4048 -
mean_absolute_percentage_error: 160.2417
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1885 -
mean_absolute_error: 0.2790 - mean_squared_error: 0.1649 - rmse: 0.4016 -
mean_absolute_percentage_error: 161.5711
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1891 -
mean_absolute_error: 0.2793 - mean_squared_error: 0.1653 - rmse: 0.4018 -
mean_absolute_percentage_error: 165.7260
100/100 [==============================] - 0s 1ms/step - loss: 0.1917 -
mean_absolute_error: 0.2824 - mean_squared_error: 0.1681 - rmse: 0.4049 -
mean_absolute_percentage_error: 151.7543
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1
-------------------------------------------------------------------------
Training for fold 6 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4498 -
mean_absolute_error: 0.4421 - mean_squared_error: 0.3395 - rmse: 0.5723 -
mean_absolute_percentage_error: 212.5928
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3109 -
mean_absolute_error: 0.3511 - mean_squared_error: 0.2402 - rmse: 0.4861 -
mean_absolute_percentage_error: 196.0294
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2780 -
mean_absolute_error: 0.3352 - mean_squared_error: 0.2238 - rmse: 0.4691 -
mean_absolute_percentage_error: 191.2924
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2657 -
mean_absolute_error: 0.3309 - mean_squared_error: 0.2191 - rmse: 0.4635 -
mean_absolute_percentage_error: 190.8891
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2561 -
mean_absolute_error: 0.3256 - mean_squared_error: 0.2137 - rmse: 0.4589 -
mean_absolute_percentage_error: 186.8802
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2490 -
mean_absolute_error: 0.3214 - mean_squared_error: 0.2098 - rmse: 0.4533 -
mean_absolute_percentage_error: 187.3362
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2455 -
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mean_absolute_error: 0.3211 - mean_squared_error: 0.2082 - rmse: 0.4523 -
mean_absolute_percentage_error: 185.7687
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2401 -
mean_absolute_error: 0.3169 - mean_squared_error: 0.2042 - rmse: 0.4490 -
mean_absolute_percentage_error: 185.4205
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2421 -
mean_absolute_error: 0.3182 - mean_squared_error: 0.2067 - rmse: 0.4512 -
mean_absolute_percentage_error: 182.7247
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2346 -
mean_absolute_error: 0.3140 - mean_squared_error: 0.2007 - rmse: 0.4434 -
mean_absolute_percentage_error: 179.0492
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2325 -
mean_absolute_error: 0.3111 - mean_squared_error: 0.1989 - rmse: 0.4417 -
mean_absolute_percentage_error: 183.6802
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2317 -
mean_absolute_error: 0.3125 - mean_squared_error: 0.1986 - rmse: 0.4423 -
mean_absolute_percentage_error: 181.9911
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2312 -
mean_absolute_error: 0.3114 - mean_squared_error: 0.1986 - rmse: 0.4426 -
mean_absolute_percentage_error: 182.2833
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2290 -
mean_absolute_error: 0.3107 - mean_squared_error: 0.1967 - rmse: 0.4399 -
mean_absolute_percentage_error: 178.3703
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2251 -
mean_absolute_error: 0.3073 - mean_squared_error: 0.1933 - rmse: 0.4361 -
mean_absolute_percentage_error: 178.5430
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2249 -
mean_absolute_error: 0.3067 - mean_squared_error: 0.1932 - rmse: 0.4354 -
mean_absolute_percentage_error: 176.4086
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2263 -
mean_absolute_error: 0.3088 - mean_squared_error: 0.1949 - rmse: 0.4362 -
mean_absolute_percentage_error: 173.0323
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2227 -
mean_absolute_error: 0.3054 - mean_squared_error: 0.1917 - rmse: 0.4331 -
mean_absolute_percentage_error: 176.5266
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2236 -
```

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mean_absolute_error: 0.3064 - mean_squared_error: 0.1927 - rmse: 0.4356 -
mean_absolute_percentage_error: 174.0331
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2191 -
mean_absolute_error: 0.3018 - mean_squared_error: 0.1883 - rmse: 0.4301 -
mean_absolute_percentage_error: 171.9405
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2184 -
mean_absolute_error: 0.3011 - mean_squared_error: 0.1880 - rmse: 0.4291 -
mean_absolute_percentage_error: 170.1848
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2185 -
mean_absolute_error: 0.3014 - mean_squared_error: 0.1882 - rmse: 0.4300 -
mean_absolute_percentage_error: 171.8986
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2169 -
mean_absolute_error: 0.3016 - mean_squared_error: 0.1866 - rmse: 0.4287 -
mean_absolute_percentage_error: 170.4277
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2151 -
mean_absolute_error: 0.2987 - mean_squared_error: 0.1850 - rmse: 0.4251 -
mean_absolute_percentage_error: 170.2906
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2139 -
mean_absolute_error: 0.2989 - mean_squared_error: 0.1838 - rmse: 0.4245 -
mean_absolute_percentage_error: 172.6100
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2163 -
mean_absolute_error: 0.3003 - mean_squared_error: 0.1864 - rmse: 0.4267 -
mean_absolute_percentage_error: 166.3597
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2176 -
mean_absolute_error: 0.3023 - mean_squared_error: 0.1876 - rmse: 0.4287 -
mean_absolute_percentage_error: 173.2689
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2155 -
mean_absolute_error: 0.2997 - mean_squared_error: 0.1857 - rmse: 0.4269 -
mean_absolute_percentage_error: 167.3975
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2131 -
mean_absolute_error: 0.2976 - mean_squared_error: 0.1833 - rmse: 0.4242 -
mean_absolute_percentage_error: 168.5724
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2120 -
mean_absolute_error: 0.2962 - mean_squared_error: 0.1824 - rmse: 0.4235 -
mean_absolute_percentage_error: 169.5927
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2109 -
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mean_absolute_error: 0.2962 - mean_squared_error: 0.1814 - rmse: 0.4216 -
mean_absolute_percentage_error: 168.7254
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2128 -
mean_absolute_error: 0.2986 - mean_squared_error: 0.1834 - rmse: 0.4238 -
mean_absolute_percentage_error: 168.6276
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2113 -
mean_absolute_error: 0.2968 - mean_squared_error: 0.1820 - rmse: 0.4224 -
mean_absolute_percentage_error: 168.3259
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2081 -
mean_absolute_error: 0.2944 - mean_squared_error: 0.1789 - rmse: 0.4181 -
mean_absolute_percentage_error: 166.4453
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2079 -
mean_absolute_error: 0.2938 - mean_squared_error: 0.1789 - rmse: 0.4184 -
mean_absolute_percentage_error: 164.8044
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2090 -
mean_absolute_error: 0.2946 - mean_squared_error: 0.1802 - rmse: 0.4201 -
mean_absolute_percentage_error: 161.5132
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2068 -
mean_absolute_error: 0.2939 - mean_squared_error: 0.1779 - rmse: 0.4174 -
mean_absolute_percentage_error: 158.5536
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2075 -
mean_absolute_error: 0.2933 - mean_squared_error: 0.1789 - rmse: 0.4184 -
mean_absolute_percentage_error: 167.1356
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2061 -
mean_absolute_error: 0.2927 - mean_squared_error: 0.1776 - rmse: 0.4169 -
mean_absolute_percentage_error: 159.1288
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2058 -
mean_absolute_error: 0.2913 - mean_squared_error: 0.1774 - rmse: 0.4157 -
mean_absolute_percentage_error: 166.0627
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2091 -
mean_absolute_error: 0.2942 - mean_squared_error: 0.1806 - rmse: 0.4214 -
mean_absolute_percentage_error: 162.6299
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2055 -
mean_absolute_error: 0.2912 - mean_squared_error: 0.1771 - rmse: 0.4161 -
mean_absolute_percentage_error: 169.0468
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2055 -
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mean_absolute_error: 0.2913 - mean_squared_error: 0.1772 - rmse: 0.4169 -
mean_absolute_percentage_error: 165.6790
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2038 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1754 - rmse: 0.4144 -
mean_absolute_percentage_error: 162.6992
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2046 -
mean_absolute_error: 0.2907 - mean_squared_error: 0.1763 - rmse: 0.4160 -
mean_absolute_percentage_error: 159.9333
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2011 -
mean_absolute_error: 0.2885 - mean_squared_error: 0.1730 - rmse: 0.4115 -
mean_absolute_percentage_error: 164.1488
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2030 -
mean_absolute_error: 0.2899 - mean_squared_error: 0.1750 - rmse: 0.4144 -
mean_absolute_percentage_error: 156.7313
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2030 -
mean_absolute_error: 0.2897 - mean_squared_error: 0.1751 - rmse: 0.4143 -
mean_absolute_percentage_error: 159.6192
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2029 -
mean_absolute_error: 0.2898 - mean_squared_error: 0.1750 - rmse: 0.4134 -
mean_absolute_percentage_error: 165.2183
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2031 -
mean_absolute_error: 0.2900 - mean_squared_error: 0.1751 - rmse: 0.4146 -
mean_absolute_percentage_error: 162.0083
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1981 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1703 - rmse: 0.4089 -
mean_absolute_percentage_error: 165.6466
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2038 -
mean_absolute_error: 0.2915 - mean_squared_error: 0.1760 - rmse: 0.4155 -
mean_absolute_percentage_error: 165.2494
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1988 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1712 - rmse: 0.4097 -
mean_absolute_percentage_error: 158.2830
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2031 -
mean_absolute_error: 0.2900 - mean_squared_error: 0.1755 - rmse: 0.4149 -
mean_absolute_percentage_error: 162.3380
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2009 -
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mean_absolute_error: 0.2877 - mean_squared_error: 0.1733 - rmse: 0.4111 -
mean_absolute_percentage_error: 164.0304
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2001 -
mean_absolute_error: 0.2878 - mean_squared_error: 0.1726 - rmse: 0.4125 -
mean_absolute_percentage_error: 161.1979
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1980 -
mean_absolute_error: 0.2858 - mean_squared_error: 0.1706 - rmse: 0.4090 -
mean_absolute_percentage_error: 160.4965
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2001 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1726 - rmse: 0.4111 -
mean_absolute_percentage_error: 163.1803
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1990 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1717 - rmse: 0.4101 -
mean_absolute_percentage_error: 161.9189
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1984 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1711 - rmse: 0.4083 -
mean_absolute_percentage_error: 156.1901
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1976 -
mean_absolute_error: 0.2854 - mean_squared_error: 0.1705 - rmse: 0.4087 -
mean_absolute_percentage_error: 153.9783
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2000 -
mean_absolute_error: 0.2879 - mean_squared_error: 0.1731 - rmse: 0.4118 -
mean_absolute_percentage_error: 162.8338
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1975 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1706 - rmse: 0.4082 -
mean_absolute_percentage_error: 160.6038
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1976 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1709 - rmse: 0.4101 -
mean_absolute_percentage_error: 160.9095
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1678 - rmse: 0.4047 -
mean_absolute_percentage_error: 153.7445
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2004 -
mean_absolute_error: 0.2878 - mean_squared_error: 0.1738 - rmse: 0.4124 -
mean_absolute_percentage_error: 162.5322
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1971 -
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mean_absolute_error: 0.2853 - mean_squared_error: 0.1706 - rmse: 0.4086 -
mean_absolute_percentage_error: 166.8210
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1970 -
mean_absolute_error: 0.2837 - mean_squared_error: 0.1706 - rmse: 0.4086 -
mean_absolute_percentage_error: 155.8121
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1954 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1690 - rmse: 0.4065 -
mean_absolute_percentage_error: 162.3996
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1937 -
mean_absolute_error: 0.2823 - mean_squared_error: 0.1673 - rmse: 0.4049 -
mean_absolute_percentage_error: 154.3817
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1947 -
mean_absolute_error: 0.2822 - mean_squared_error: 0.1682 - rmse: 0.4054 -
mean_absolute_percentage_error: 155.7506
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1942 -
mean_absolute_error: 0.2823 - mean_squared_error: 0.1679 - rmse: 0.4060 -
mean_absolute_percentage_error: 155.3890
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1962 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1699 - rmse: 0.4077 -
mean_absolute_percentage_error: 160.8575
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1924 -
mean_absolute_error: 0.2802 - mean_squared_error: 0.1662 - rmse: 0.4041 -
mean_absolute_percentage_error: 160.3767
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1986 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1724 - rmse: 0.4100 -
mean_absolute_percentage_error: 160.1502
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1941 -
mean_absolute_error: 0.2822 - mean_squared_error: 0.1679 - rmse: 0.4048 -
mean_absolute_percentage_error: 158.2244
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1940 -
mean_absolute_error: 0.2818 - mean_squared_error: 0.1679 - rmse: 0.4056 -
mean_absolute_percentage_error: 156.4801
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1930 -
mean_absolute_error: 0.2805 - mean_squared_error: 0.1670 - rmse: 0.4051 -
mean_absolute_percentage_error: 156.7536
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1943 -
```

```
mean_absolute_error: 0.2823 - mean_squared_error: 0.1681 - rmse: 0.4060 -
mean_absolute_percentage_error: 157.9545
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1934 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1674 - rmse: 0.4042 -
mean_absolute_percentage_error: 155.4671
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1936 -
mean_absolute_error: 0.2822 - mean_squared_error: 0.1677 - rmse: 0.4058 -
mean_absolute_percentage_error: 154.8932
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1905 -
mean_absolute_error: 0.2792 - mean_squared_error: 0.1648 - rmse: 0.4015 -
mean_absolute_percentage_error: 158.5704
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1911 -
mean_absolute_error: 0.2797 - mean_squared_error: 0.1654 - rmse: 0.4028 -
mean_absolute_percentage_error: 157.7538
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1907 -
mean_absolute_error: 0.2787 - mean_squared_error: 0.1651 - rmse: 0.4015 -
mean_absolute_percentage_error: 161.1726
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1932 -
mean_absolute_error: 0.2805 - mean_squared_error: 0.1677 - rmse: 0.4054 -
mean_absolute_percentage_error: 154.6684
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1926 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1671 - rmse: 0.4039 -
mean_absolute_percentage_error: 160.5918
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1931 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1676 - rmse: 0.4045 -
mean_absolute_percentage_error: 158.7472
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1915 -
mean_absolute_error: 0.2795 - mean_squared_error: 0.1661 - rmse: 0.4035 -
mean_absolute_percentage_error: 155.4638
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1921 -
mean_absolute_error: 0.2806 - mean_squared_error: 0.1667 - rmse: 0.4040 -
mean_absolute_percentage_error: 156.5497
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1923 -
mean_absolute_error: 0.2797 - mean_squared_error: 0.1670 - rmse: 0.4055 -
mean_absolute_percentage_error: 161.8003
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1912 -
```

```
mean_absolute_error: 0.2798 - mean_squared_error: 0.1661 - rmse: 0.4032 -
mean_absolute_percentage_error: 159.5034
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1899 -
mean_absolute_error: 0.2780 - mean_squared_error: 0.1649 - rmse: 0.4013 -
mean_absolute_percentage_error: 160.2586
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1896 -
mean_absolute_error: 0.2780 - mean_squared_error: 0.1646 - rmse: 0.4017 -
mean_absolute_percentage_error: 152.2190
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1903 -
mean_absolute_error: 0.2791 - mean_squared_error: 0.1654 - rmse: 0.4017 -
mean_absolute_percentage_error: 151.9649
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1902 -
mean_absolute_error: 0.2796 - mean_squared_error: 0.1654 - rmse: 0.4013 -
mean_absolute_percentage_error: 157.4753
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1903 -
mean_absolute_error: 0.2789 - mean_squared_error: 0.1655 - rmse: 0.4025 -
mean_absolute_percentage_error: 155.8816
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1890 -
mean_absolute_error: 0.2779 - mean_squared_error: 0.1643 - rmse: 0.4017 -
mean_absolute_percentage_error: 159.6806
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1890 -
mean_absolute_error: 0.2772 - mean_squared_error: 0.1642 - rmse: 0.4007 -
mean_absolute_percentage_error: 155.1389
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1895 -
mean_absolute_error: 0.2776 - mean_squared_error: 0.1646 - rmse: 0.4017 -
mean_absolute_percentage_error: 159.3140
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1897 -
mean_absolute_error: 0.2781 - mean_squared_error: 0.1650 - rmse: 0.4011 -
mean_absolute_percentage_error: 157.2514
100/100 [==============================] - 0s 1ms/step - loss: 0.1908 -
mean_absolute_error: 0.2757 - mean_squared_error: 0.1662 - rmse: 0.4019 -
mean_absolute_percentage_error: 159.1303
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1
------------------------------------------------------------------------------
Training for fold 7 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4633 -
mean_absolute_error: 0.4560 - mean_squared_error: 0.3573 - rmse: 0.5860 -
```

```
mean_absolute_percentage_error: 207.4954
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3153 -
mean_absolute_error: 0.3556 - mean_squared_error: 0.2461 - rmse: 0.4921 -
mean_absolute_percentage_error: 194.2867
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2858 -
mean_absolute_error: 0.3410 - mean_squared_error: 0.2322 - rmse: 0.4785 -
mean_absolute_percentage_error: 203.0999
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2692 -
mean_absolute_error: 0.3338 - mean_squared_error: 0.2239 - rmse: 0.4688 -
mean_absolute_percentage_error: 197.3246
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2610 -
mean_absolute_error: 0.3305 - mean_squared_error: 0.2198 - rmse: 0.4652 -
mean_absolute_percentage_error: 195.6668
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2550 -
mean_absolute_error: 0.3278 - mean_squared_error: 0.2163 - rmse: 0.4612 -
mean_absolute_percentage_error: 191.7708
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2483 -
mean_absolute_error: 0.3231 - mean_squared_error: 0.2110 - rmse: 0.4555 -
mean_absolute_percentage_error: 193.7210
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2463 -
mean_absolute_error: 0.3226 - mean_squared_error: 0.2102 - rmse: 0.4540 -
mean_absolute_percentage_error: 191.0291
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2406 -
mean_absolute_error: 0.3185 - mean_squared_error: 0.2055 - rmse: 0.4493 -
mean_absolute_percentage_error: 189.8068
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2384 -
mean_absolute_error: 0.3160 - mean_squared_error: 0.2041 - rmse: 0.4474 -
mean_absolute_percentage_error: 189.7230
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2399 -
mean_absolute_error: 0.3190 - mean_squared_error: 0.2059 - rmse: 0.4490 -
mean_absolute_percentage_error: 185.9181
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2327 -
mean_absolute_error: 0.3118 - mean_squared_error: 0.1993 - rmse: 0.4417 -
mean_absolute_percentage_error: 185.5439
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2354 -
mean_absolute_error: 0.3143 - mean_squared_error: 0.2025 - rmse: 0.4459 -
```

```
mean_absolute_percentage_error: 183.6457
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2289 -
mean_absolute_error: 0.3104 - mean_squared_error: 0.1963 - rmse: 0.4385 -
mean_absolute_percentage_error: 183.3535
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2278 -
mean_absolute_error: 0.3080 - mean_squared_error: 0.1950 - rmse: 0.4375 -
mean_absolute_percentage_error: 185.1095
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2278 -
mean_absolute_error: 0.3085 - mean_squared_error: 0.1956 - rmse: 0.4377 -
mean_absolute_percentage_error: 179.1044
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2247 -
mean_absolute_error: 0.3054 - mean_squared_error: 0.1929 - rmse: 0.4347 -
mean_absolute_percentage_error: 179.7715
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2272 -
mean_absolute_error: 0.3083 - mean_squared_error: 0.1955 - rmse: 0.4377 -
mean_absolute_percentage_error: 178.5022
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2232 -
mean_absolute_error: 0.3063 - mean_squared_error: 0.1920 - rmse: 0.4344 -
mean_absolute_percentage_error: 178.1862
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2233 -
mean_absolute_error: 0.3057 - mean_squared_error: 0.1923 - rmse: 0.4332 -
mean_absolute_percentage_error: 182.1953
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2180 -
mean_absolute_error: 0.3010 - mean_squared_error: 0.1871 - rmse: 0.4283 -
mean_absolute_percentage_error: 179.3278
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2207 -
mean_absolute_error: 0.3038 - mean_squared_error: 0.1900 - rmse: 0.4318 -
mean_absolute_percentage_error: 175.5130
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2186 -
mean_absolute_error: 0.3022 - mean_squared_error: 0.1878 - rmse: 0.4295 -
mean_absolute_percentage_error: 178.1141
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2159 -
mean_absolute_error: 0.2998 - mean_squared_error: 0.1855 - rmse: 0.4264 -
mean_absolute_percentage_error: 179.6572
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2175 -
mean_absolute_error: 0.3005 - mean_squared_error: 0.1872 - rmse: 0.4279 -
```

```
mean_absolute_percentage_error: 179.9857
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2149 -
mean_absolute_error: 0.2987 - mean_squared_error: 0.1848 - rmse: 0.4254 -
mean_absolute_percentage_error: 179.4449
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2150 -
mean_absolute_error: 0.2985 - mean_squared_error: 0.1848 - rmse: 0.4258 -
mean_absolute_percentage_error: 179.2485
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2155 -
mean_absolute_error: 0.2991 - mean_squared_error: 0.1855 - rmse: 0.4273 -
mean_absolute_percentage_error: 174.7833
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2152 -
mean_absolute_error: 0.2991 - mean_squared_error: 0.1852 - rmse: 0.4262 -
mean_absolute_percentage_error: 177.6667
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2127 -
mean_absolute_error: 0.2967 - mean_squared_error: 0.1827 - rmse: 0.4227 -
mean_absolute_percentage_error: 173.6392
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2136 -
mean_absolute_error: 0.2963 - mean_squared_error: 0.1836 - rmse: 0.4240 -
mean_absolute_percentage_error: 172.2292
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2134 -
mean_absolute_error: 0.2973 - mean_squared_error: 0.1835 - rmse: 0.4249 -
mean_absolute_percentage_error: 179.8978
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2117 -
mean_absolute_error: 0.2963 - mean_squared_error: 0.1819 - rmse: 0.4224 -
mean_absolute_percentage_error: 179.4493
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2112 -
mean_absolute_error: 0.2963 - mean_squared_error: 0.1814 - rmse: 0.4218 -
mean_absolute_percentage_error: 172.7127
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2107 -
mean_absolute_error: 0.2946 - mean_squared_error: 0.1810 - rmse: 0.4214 -
mean_absolute_percentage_error: 179.7918
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2085 -
mean_absolute_error: 0.2928 - mean_squared_error: 0.1789 - rmse: 0.4195 -
mean_absolute_percentage_error: 167.5656
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2087 -
mean_absolute_error: 0.2931 - mean_squared_error: 0.1792 - rmse: 0.4192 -
```

```
mean_absolute_percentage_error: 176.3775
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2075 -
mean_absolute_error: 0.2920 - mean_squared_error: 0.1783 - rmse: 0.4187 -
mean_absolute_percentage_error: 175.6622
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2083 -
mean_absolute_error: 0.2927 - mean_squared_error: 0.1791 - rmse: 0.4194 -
mean_absolute_percentage_error: 176.5264
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2100 -
mean_absolute_error: 0.2942 - mean_squared_error: 0.1807 - rmse: 0.4204 -
mean_absolute_percentage_error: 176.6576
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2072 -
mean_absolute_error: 0.2920 - mean_squared_error: 0.1781 - rmse: 0.4176 -
mean_absolute_percentage_error: 171.5611
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2071 -
mean_absolute_error: 0.2917 - mean_squared_error: 0.1780 - rmse: 0.4176 -
mean_absolute_percentage_error: 171.9852
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2045 -
mean_absolute_error: 0.2895 - mean_squared_error: 0.1755 - rmse: 0.4150 -
mean_absolute_percentage_error: 173.2878
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2081 -
mean_absolute_error: 0.2930 - mean_squared_error: 0.1793 - rmse: 0.4195 -
mean_absolute_percentage_error: 175.3145
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2085 -
mean_absolute_error: 0.2927 - mean_squared_error: 0.1797 - rmse: 0.4197 -
mean_absolute_percentage_error: 170.9731
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2041 -
mean_absolute_error: 0.2890 - mean_squared_error: 0.1755 - rmse: 0.4151 -
mean_absolute_percentage_error: 176.0613
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2041 -
mean_absolute_error: 0.2891 - mean_squared_error: 0.1755 - rmse: 0.4158 -
mean_absolute_percentage_error: 168.6168
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2018 -
mean_absolute_error: 0.2877 - mean_squared_error: 0.1734 - rmse: 0.4118 -
mean_absolute_percentage_error: 169.4214
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2031 -
mean_absolute_error: 0.2881 - mean_squared_error: 0.1746 - rmse: 0.4133 -
```

```
mean_absolute_percentage_error: 166.0432
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2039 -
mean_absolute_error: 0.2893 - mean_squared_error: 0.1757 - rmse: 0.4152 -
mean_absolute_percentage_error: 169.8092
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2022 -
mean_absolute_error: 0.2875 - mean_squared_error: 0.1741 - rmse: 0.4132 -
mean_absolute_percentage_error: 170.7991
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2041 -
mean_absolute_error: 0.2898 - mean_squared_error: 0.1760 - rmse: 0.4158 -
mean_absolute_percentage_error: 168.7378
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2041 -
mean_absolute_error: 0.2895 - mean_squared_error: 0.1761 - rmse: 0.4151 -
mean_absolute_percentage_error: 170.0725
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2034 -
mean_absolute_error: 0.2888 - mean_squared_error: 0.1755 - rmse: 0.4140 -
mean_absolute_percentage_error: 168.7364
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2032 -
mean_absolute_error: 0.2892 - mean_squared_error: 0.1754 - rmse: 0.4135 -
mean_absolute_percentage_error: 167.2084
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2021 -
mean_absolute_error: 0.2879 - mean_squared_error: 0.1743 - rmse: 0.4138 -
mean_absolute_percentage_error: 175.7669
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2036 -
mean_absolute_error: 0.2893 - mean_squared_error: 0.1757 - rmse: 0.4148 -
mean_absolute_percentage_error: 173.2792
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1998 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1720 - rmse: 0.4104 -
mean_absolute_percentage_error: 162.6581
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2045 -
mean_absolute_error: 0.2898 - mean_squared_error: 0.1766 - rmse: 0.4161 -
mean_absolute_percentage_error: 166.9581
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2014 -
mean_absolute_error: 0.2870 - mean_squared_error: 0.1738 - rmse: 0.4128 -
mean_absolute_percentage_error: 166.7255
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2012 -
mean_absolute_error: 0.2867 - mean_squared_error: 0.1736 - rmse: 0.4122 -
```

```
mean_absolute_percentage_error: 169.4556
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2010 -
mean_absolute_error: 0.2854 - mean_squared_error: 0.1734 - rmse: 0.4115 -
mean_absolute_percentage_error: 170.2450
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2029 -
mean_absolute_error: 0.2896 - mean_squared_error: 0.1753 - rmse: 0.4138 -
mean_absolute_percentage_error: 171.5049
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2005 -
mean_absolute_error: 0.2873 - mean_squared_error: 0.1729 - rmse: 0.4108 -
mean_absolute_percentage_error: 169.4729
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2015 -
mean_absolute_error: 0.2867 - mean_squared_error: 0.1741 - rmse: 0.4134 -
mean_absolute_percentage_error: 174.8872
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2014 -
mean_absolute_error: 0.2882 - mean_squared_error: 0.1739 - rmse: 0.4130 -
mean_absolute_percentage_error: 171.1484
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1972 -
mean_absolute_error: 0.2841 - mean_squared_error: 0.1699 - rmse: 0.4075 -
mean_absolute_percentage_error: 170.7154
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1993 -
mean_absolute_error: 0.2849 - mean_squared_error: 0.1720 - rmse: 0.4103 -
mean_absolute_percentage_error: 165.8402
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1995 -
mean_absolute_error: 0.2869 - mean_squared_error: 0.1723 - rmse: 0.4105 -
mean_absolute_percentage_error: 170.5560
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2006 -
mean_absolute_error: 0.2884 - mean_squared_error: 0.1734 - rmse: 0.4126 -
mean_absolute_percentage_error: 167.3054
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1986 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1714 - rmse: 0.4088 -
mean_absolute_percentage_error: 165.2786
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2012 -
mean_absolute_error: 0.2876 - mean_squared_error: 0.1742 - rmse: 0.4128 -
mean_absolute_percentage_error: 165.8233
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1989 -
mean_absolute_error: 0.2867 - mean_squared_error: 0.1717 - rmse: 0.4102 -
```

```
mean_absolute_percentage_error: 167.3594
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1970 -
mean_absolute_error: 0.2841 - mean_squared_error: 0.1700 - rmse: 0.4088 -
mean_absolute_percentage_error: 165.4567
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1981 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1713 - rmse: 0.4092 -
mean_absolute_percentage_error: 167.8931
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1962 -
mean_absolute_error: 0.2837 - mean_squared_error: 0.1695 - rmse: 0.4078 -
mean_absolute_percentage_error: 166.1129
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1996 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1728 - rmse: 0.4118 -
mean_absolute_percentage_error: 167.2975
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2012 -
mean_absolute_error: 0.2888 - mean_squared_error: 0.1743 - rmse: 0.4131 -
mean_absolute_percentage_error: 164.9671
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1982 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1716 - rmse: 0.4103 -
mean_absolute_percentage_error: 166.6996
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1966 -
mean_absolute_error: 0.2837 - mean_squared_error: 0.1700 - rmse: 0.4080 -
mean_absolute_percentage_error: 166.8119
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1965 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1700 - rmse: 0.4085 -
mean_absolute_percentage_error: 164.7941
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1978 -
mean_absolute_error: 0.2858 - mean_squared_error: 0.1713 - rmse: 0.4093 -
mean_absolute_percentage_error: 168.8142
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1992 -
mean_absolute_error: 0.2876 - mean_squared_error: 0.1727 - rmse: 0.4114 -
mean_absolute_percentage_error: 160.7812
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1943 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1681 - rmse: 0.4052 -
mean_absolute_percentage_error: 164.4247
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1971 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1709 - rmse: 0.4092 -
```

```
mean_absolute_percentage_error: 171.8750
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2834 - mean_squared_error: 0.1690 - rmse: 0.4066 -
mean_absolute_percentage_error: 165.3226
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1935 -
mean_absolute_error: 0.2812 - mean_squared_error: 0.1673 - rmse: 0.4053 -
mean_absolute_percentage_error: 167.0025
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1965 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1704 - rmse: 0.4087 -
mean_absolute_percentage_error: 166.8643
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1978 -
mean_absolute_error: 0.2849 - mean_squared_error: 0.1717 - rmse: 0.4098 -
mean_absolute_percentage_error: 166.9698
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1958 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1697 - rmse: 0.4075 -
mean_absolute_percentage_error: 166.1645
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1949 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1689 - rmse: 0.4069 -
mean_absolute_percentage_error: 164.0691
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1968 -
mean_absolute_error: 0.2847 - mean_squared_error: 0.1707 - rmse: 0.4086 -
mean_absolute_percentage_error: 167.4929
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1965 -
mean_absolute_error: 0.2831 - mean_squared_error: 0.1705 - rmse: 0.4093 -
mean_absolute_percentage_error: 166.8692
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1945 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1685 - rmse: 0.4064 -
mean_absolute_percentage_error: 165.4186
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1940 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1680 - rmse: 0.4063 -
mean_absolute_percentage_error: 168.9287
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1969 -
mean_absolute_error: 0.2837 - mean_squared_error: 0.1709 - rmse: 0.4096 -
mean_absolute_percentage_error: 169.2038
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1954 -
mean_absolute_error: 0.2844 - mean_squared_error: 0.1694 - rmse: 0.4074 -
```

```
mean_absolute_percentage_error: 167.6332
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1947 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1689 - rmse: 0.4062 -
mean_absolute_percentage_error: 172.2771
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1939 -
mean_absolute_error: 0.2821 - mean_squared_error: 0.1682 - rmse: 0.4054 -
mean_absolute_percentage_error: 164.9784
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1950 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1691 - rmse: 0.4073 -
mean_absolute_percentage_error: 166.8060
100/100 [==============================] - 0s 2ms/step - loss: 0.1958 -
mean_absolute_error: 0.2744 - mean_squared_error: 0.1697 - rmse: 0.4054 -
mean_absolute_percentage_error: 169.3756
200/200 [==============================] - 0s 2ms/step
Regularizer chosen is L1
------------------------------------------------------------------------
Training for fold 8 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4479 -
mean_absolute_error: 0.4417 - mean_squared_error: 0.3419 - rmse: 0.5745 -
mean_absolute_percentage_error: 182.2290
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3079 -
mean_absolute_error: 0.3507 - mean_squared_error: 0.2406 - rmse: 0.4870 -
mean_absolute_percentage_error: 185.6437
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2767 -
mean_absolute_error: 0.3365 - mean_squared_error: 0.2243 - rmse: 0.4690 -
mean_absolute_percentage_error: 189.7817
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2638 -
mean_absolute_error: 0.3311 - mean_squared_error: 0.2186 - rmse: 0.4636 -
mean_absolute_percentage_error: 184.0691
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2547 -
mean_absolute_error: 0.3257 - mean_squared_error: 0.2128 - rmse: 0.4570 -
mean_absolute_percentage_error: 186.5754
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2486 -
mean_absolute_error: 0.3229 - mean_squared_error: 0.2091 - rmse: 0.4534 -
mean_absolute_percentage_error: 184.1704
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2460 -
mean_absolute_error: 0.3227 - mean_squared_error: 0.2080 - rmse: 0.4524 -
mean_absolute_percentage_error: 182.2148
```

```
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2393 -
mean_absolute_error: 0.3181 - mean_squared_error: 0.2030 - rmse: 0.4466 -
mean_absolute_percentage_error: 174.5270
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2376 -
mean_absolute_error: 0.3164 - mean_squared_error: 0.2021 - rmse: 0.4452 -
mean_absolute_percentage_error: 183.0128
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2343 -
mean_absolute_error: 0.3143 - mean_squared_error: 0.1992 - rmse: 0.4422 -
mean_absolute_percentage_error: 179.7422
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2319 -
mean_absolute_error: 0.3114 - mean_squared_error: 0.1975 - rmse: 0.4398 -
mean_absolute_percentage_error: 178.1752
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2297 -
mean_absolute_error: 0.3098 - mean_squared_error: 0.1958 - rmse: 0.4390 -
mean_absolute_percentage_error: 183.0969
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2266 -
mean_absolute_error: 0.3066 - mean_squared_error: 0.1931 - rmse: 0.4356 -
mean_absolute_percentage_error: 173.0359
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2274 -
mean_absolute_error: 0.3076 - mean_squared_error: 0.1941 - rmse: 0.4359 -
mean_absolute_percentage_error: 176.0163
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2258 -
mean_absolute_error: 0.3069 - mean_squared_error: 0.1928 - rmse: 0.4341 -
mean_absolute_percentage_error: 181.3637
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2218 -
mean_absolute_error: 0.3036 - mean_squared_error: 0.1894 - rmse: 0.4317 -
mean_absolute_percentage_error: 172.3889
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2198 -
mean_absolute_error: 0.3021 - mean_squared_error: 0.1878 - rmse: 0.4292 -
mean_absolute_percentage_error: 175.5409
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2208 -
mean_absolute_error: 0.3032 - mean_squared_error: 0.1892 - rmse: 0.4310 -
mean_absolute_percentage_error: 168.6605
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2208 -
mean_absolute_error: 0.3028 - mean_squared_error: 0.1894 - rmse: 0.4312 -
mean_absolute_percentage_error: 170.2320
```

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Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2164 -
mean_absolute_error: 0.3002 - mean_squared_error: 0.1853 - rmse: 0.4257 -
mean_absolute_percentage_error: 164.1715
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2165 -
mean_absolute_error: 0.2998 - mean_squared_error: 0.1856 - rmse: 0.4276 -
mean_absolute_percentage_error: 172.4633
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2149 -
mean_absolute_error: 0.2983 - mean_squared_error: 0.1842 - rmse: 0.4260 -
mean_absolute_percentage_error: 172.1399
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2158 -
mean_absolute_error: 0.2995 - mean_squared_error: 0.1855 - rmse: 0.4260 -
mean_absolute_percentage_error: 165.9402
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2128 -
mean_absolute_error: 0.2971 - mean_squared_error: 0.1825 - rmse: 0.4230 -
mean_absolute_percentage_error: 167.1528
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2120 -
mean_absolute_error: 0.2949 - mean_squared_error: 0.1821 - rmse: 0.4235 -
mean_absolute_percentage_error: 165.9985
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2116 -
mean_absolute_error: 0.2966 - mean_squared_error: 0.1820 - rmse: 0.4215 -
mean_absolute_percentage_error: 169.0011
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2094 -
mean_absolute_error: 0.2944 - mean_squared_error: 0.1802 - rmse: 0.4207 -
mean_absolute_percentage_error: 169.6646
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2084 -
mean_absolute_error: 0.2934 - mean_squared_error: 0.1794 - rmse: 0.4190 -
mean_absolute_percentage_error: 164.8574
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2080 -
mean_absolute_error: 0.2936 - mean_squared_error: 0.1793 - rmse: 0.4187 -
mean_absolute_percentage_error: 165.7991
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2044 -
mean_absolute_error: 0.2901 - mean_squared_error: 0.1762 - rmse: 0.4163 -
mean_absolute_percentage_error: 165.6820
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2051 -
mean_absolute_error: 0.2918 - mean_squared_error: 0.1769 - rmse: 0.4172 -
mean_absolute_percentage_error: 167.4660
```

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Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2079 -
mean_absolute_error: 0.2945 - mean_squared_error: 0.1797 - rmse: 0.4191 -
mean_absolute_percentage_error: 163.3982
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2036 -
mean_absolute_error: 0.2900 - mean_squared_error: 0.1758 - rmse: 0.4147 -
mean_absolute_percentage_error: 162.5525
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2038 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1762 - rmse: 0.4161 -
mean_absolute_percentage_error: 165.4409
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2028 -
mean_absolute_error: 0.2892 - mean_squared_error: 0.1753 - rmse: 0.4151 -
mean_absolute_percentage_error: 168.4173
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2019 -
mean_absolute_error: 0.2887 - mean_squared_error: 0.1744 - rmse: 0.4136 -
mean_absolute_percentage_error: 160.1848
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2037 -
mean_absolute_error: 0.2914 - mean_squared_error: 0.1763 - rmse: 0.4155 -
mean_absolute_percentage_error: 166.2517
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2020 -
mean_absolute_error: 0.2884 - mean_squared_error: 0.1747 - rmse: 0.4135 -
mean_absolute_percentage_error: 163.8665
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2024 -
mean_absolute_error: 0.2902 - mean_squared_error: 0.1752 - rmse: 0.4150 -
mean_absolute_percentage_error: 162.4860
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1998 -
mean_absolute_error: 0.2891 - mean_squared_error: 0.1728 - rmse: 0.4114 -
mean_absolute_percentage_error: 163.8798
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2003 -
mean_absolute_error: 0.2882 - mean_squared_error: 0.1733 - rmse: 0.4118 -
mean_absolute_percentage_error: 166.9296
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2004 -
mean_absolute_error: 0.2885 - mean_squared_error: 0.1734 - rmse: 0.4127 -
mean_absolute_percentage_error: 160.1761
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2027 -
mean_absolute_error: 0.2911 - mean_squared_error: 0.1758 - rmse: 0.4150 -
mean_absolute_percentage_error: 166.1484
```

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Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1987 -
mean_absolute_error: 0.2872 - mean_squared_error: 0.1719 - rmse: 0.4102 -
mean_absolute_percentage_error: 157.9980
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1965 -
mean_absolute_error: 0.2845 - mean_squared_error: 0.1699 - rmse: 0.4081 -
mean_absolute_percentage_error: 160.8482
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1973 -
mean_absolute_error: 0.2863 - mean_squared_error: 0.1707 - rmse: 0.4077 -
mean_absolute_percentage_error: 158.7219
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1995 -
mean_absolute_error: 0.2887 - mean_squared_error: 0.1729 - rmse: 0.4121 -
mean_absolute_percentage_error: 158.4131
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1971 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1705 - rmse: 0.4092 -
mean_absolute_percentage_error: 164.0657
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1984 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1719 - rmse: 0.4112 -
mean_absolute_percentage_error: 157.9732
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1972 -
mean_absolute_error: 0.2854 - mean_squared_error: 0.1709 - rmse: 0.4092 -
mean_absolute_percentage_error: 160.8417
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1977 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1712 - rmse: 0.4099 -
mean_absolute_percentage_error: 159.8635
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1955 -
mean_absolute_error: 0.2844 - mean_squared_error: 0.1693 - rmse: 0.4072 -
mean_absolute_percentage_error: 161.0188
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1961 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1699 - rmse: 0.4078 -
mean_absolute_percentage_error: 158.7271
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1971 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1710 - rmse: 0.4093 -
mean_absolute_percentage_error: 158.0825
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1970 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1710 - rmse: 0.4098 -
mean_absolute_percentage_error: 161.4512
```

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Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1946 -
mean_absolute_error: 0.2830 - mean_squared_error: 0.1688 - rmse: 0.4063 -
mean_absolute_percentage_error: 157.1524
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1963 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1705 - rmse: 0.4084 -
mean_absolute_percentage_error: 158.2887
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1937 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1681 - rmse: 0.4056 -
mean_absolute_percentage_error: 162.4181
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1689 - rmse: 0.4069 -
mean_absolute_percentage_error: 161.7358
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1921 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1667 - rmse: 0.4036 -
mean_absolute_percentage_error: 156.7734
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1955 -
mean_absolute_error: 0.2853 - mean_squared_error: 0.1702 - rmse: 0.4092 -
mean_absolute_percentage_error: 165.5401
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1936 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1684 - rmse: 0.4061 -
mean_absolute_percentage_error: 161.2445
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1965 -
mean_absolute_error: 0.2853 - mean_squared_error: 0.1714 - rmse: 0.4090 -
mean_absolute_percentage_error: 161.5432
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1932 -
mean_absolute_error: 0.2830 - mean_squared_error: 0.1681 - rmse: 0.4053 -
mean_absolute_percentage_error: 157.3436
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1931 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1682 - rmse: 0.4062 -
mean_absolute_percentage_error: 160.9201
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1941 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1692 - rmse: 0.4081 -
mean_absolute_percentage_error: 152.6468
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1929 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1680 - rmse: 0.4051 -
mean_absolute_percentage_error: 156.3835
```

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Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1903 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1654 - rmse: 0.4031 -
mean_absolute_percentage_error: 160.4202
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2840 - mean_squared_error: 0.1695 - rmse: 0.4084 -
mean_absolute_percentage_error: 160.6630
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1914 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1666 - rmse: 0.4034 -
mean_absolute_percentage_error: 160.7330
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1907 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1660 - rmse: 0.4037 -
mean_absolute_percentage_error: 157.8223
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1681 - rmse: 0.4057 -
mean_absolute_percentage_error: 156.6492
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1931 -
mean_absolute_error: 0.2823 - mean_squared_error: 0.1685 - rmse: 0.4061 -
mean_absolute_percentage_error: 154.3247
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1924 -
mean_absolute_error: 0.2822 - mean_squared_error: 0.1677 - rmse: 0.4056 -
mean_absolute_percentage_error: 153.6798
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1898 -
mean_absolute_error: 0.2794 - mean_squared_error: 0.1652 - rmse: 0.4025 -
mean_absolute_percentage_error: 160.5056
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1924 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1677 - rmse: 0.4049 -
mean_absolute_percentage_error: 161.5006
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1911 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1665 - rmse: 0.4040 -
mean_absolute_percentage_error: 153.1354
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1928 -
mean_absolute_error: 0.2822 - mean_squared_error: 0.1684 - rmse: 0.4059 -
mean_absolute_percentage_error: 162.3534
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1913 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1668 - rmse: 0.4043 -
mean_absolute_percentage_error: 158.3038
```

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Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1891 -
mean_absolute_error: 0.2789 - mean_squared_error: 0.1648 - rmse: 0.4021 -
mean_absolute_percentage_error: 158.4480
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1873 -
mean_absolute_error: 0.2779 - mean_squared_error: 0.1630 - rmse: 0.3992 -
mean_absolute_percentage_error: 153.5507
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1891 -
mean_absolute_error: 0.2797 - mean_squared_error: 0.1648 - rmse: 0.4022 -
mean_absolute_percentage_error: 159.5649
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1901 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1659 - rmse: 0.4042 -
mean_absolute_percentage_error: 155.5388
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1884 -
mean_absolute_error: 0.2790 - mean_squared_error: 0.1640 - rmse: 0.3999 -
mean_absolute_percentage_error: 157.9928
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1881 -
mean_absolute_error: 0.2779 - mean_squared_error: 0.1639 - rmse: 0.4002 -
mean_absolute_percentage_error: 160.1428
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1890 -
mean_absolute_error: 0.2793 - mean_squared_error: 0.1648 - rmse: 0.4013 -
mean_absolute_percentage_error: 155.5235
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1864 -
mean_absolute_error: 0.2774 - mean_squared_error: 0.1623 - rmse: 0.3994 -
mean_absolute_percentage_error: 156.4997
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1896 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1654 - rmse: 0.4032 -
mean_absolute_percentage_error: 160.0399
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1864 -
mean_absolute_error: 0.2764 - mean_squared_error: 0.1623 - rmse: 0.3987 -
mean_absolute_percentage_error: 160.7288
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1865 -
mean_absolute_error: 0.2771 - mean_squared_error: 0.1623 - rmse: 0.3993 -
mean_absolute_percentage_error: 160.0730
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1887 -
mean_absolute_error: 0.2789 - mean_squared_error: 0.1645 - rmse: 0.4014 -
mean_absolute_percentage_error: 158.6230
```

```
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1870 -
mean_absolute_error: 0.2766 - mean_squared_error: 0.1628 - rmse: 0.3988 -
mean_absolute_percentage_error: 154.5621
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1900 -
mean_absolute_error: 0.2801 - mean_squared_error: 0.1659 - rmse: 0.4028 -
mean_absolute_percentage_error: 157.0847
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1917 -
mean_absolute_error: 0.2804 - mean_squared_error: 0.1676 - rmse: 0.4047 -
mean_absolute_percentage_error: 167.0325
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1860 -
mean_absolute_error: 0.2756 - mean_squared_error: 0.1618 - rmse: 0.3980 -
mean_absolute_percentage_error: 158.6527
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1890 -
mean_absolute_error: 0.2772 - mean_squared_error: 0.1648 - rmse: 0.4022 -
mean_absolute_percentage_error: 161.4967
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1877 -
mean_absolute_error: 0.2772 - mean_squared_error: 0.1636 - rmse: 0.4001 -
mean_absolute_percentage_error: 157.0066
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1866 -
mean_absolute_error: 0.2769 - mean_squared_error: 0.1624 - rmse: 0.3990 -
mean_absolute_percentage_error: 157.8797
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1871 -
mean_absolute_error: 0.2775 - mean_squared_error: 0.1629 - rmse: 0.3998 -
mean_absolute_percentage_error: 157.3594
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1879 -
mean_absolute_error: 0.2775 - mean_squared_error: 0.1637 - rmse: 0.4015 -
mean_absolute_percentage_error: 160.3513
100/100 [==============================] - 0s 2ms/step - loss: 0.1900 -
mean_absolute_error: 0.2748 - mean_squared_error: 0.1661 - rmse: 0.4017 -
mean_absolute_percentage_error: 159.4771
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1
-------------------------------------------------------------------------
Training for fold 9 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4515 -
mean_absolute_error: 0.4382 - mean_squared_error: 0.3420 - rmse: 0.5737 -
mean_absolute_percentage_error: 206.5666
Epoch 2/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.3103 -
mean_absolute_error: 0.3491 - mean_squared_error: 0.2389 - rmse: 0.4854 -
mean_absolute_percentage_error: 195.6521
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2829 -
mean_absolute_error: 0.3403 - mean_squared_error: 0.2277 - rmse: 0.4736 -
mean_absolute_percentage_error: 195.0220
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2667 -
mean_absolute_error: 0.3321 - mean_squared_error: 0.2191 - rmse: 0.4633 -
mean_absolute_percentage_error: 194.4740
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2576 -
mean_absolute_error: 0.3284 - mean_squared_error: 0.2148 - rmse: 0.4587 -
mean_absolute_percentage_error: 194.4652
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2523 -
mean_absolute_error: 0.3254 - mean_squared_error: 0.2122 - rmse: 0.4572 -
mean_absolute_percentage_error: 196.9066
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2482 -
mean_absolute_error: 0.3243 - mean_squared_error: 0.2103 - rmse: 0.4548 -
mean_absolute_percentage_error: 190.7125
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2439 -
mean_absolute_error: 0.3202 - mean_squared_error: 0.2076 - rmse: 0.4517 -
mean_absolute_percentage_error: 190.2512
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2406 -
mean_absolute_error: 0.3196 - mean_squared_error: 0.2056 - rmse: 0.4495 -
mean_absolute_percentage_error: 188.7790
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2375 -
mean_absolute_error: 0.3178 - mean_squared_error: 0.2031 - rmse: 0.4467 -
mean_absolute_percentage_error: 189.2775
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2374 -
mean_absolute_error: 0.3176 - mean_squared_error: 0.2038 - rmse: 0.4474 -
mean_absolute_percentage_error: 187.8293
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2346 -
mean_absolute_error: 0.3146 - mean_squared_error: 0.2016 - rmse: 0.4455 -
mean_absolute_percentage_error: 192.0148
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2319 -
mean_absolute_error: 0.3140 - mean_squared_error: 0.1994 - rmse: 0.4413 -
mean_absolute_percentage_error: 188.8318
Epoch 14/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.2322 -
mean_absolute_error: 0.3137 - mean_squared_error: 0.2003 - rmse: 0.4437 -
mean_absolute_percentage_error: 186.6787
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2299 -
mean_absolute_error: 0.3117 - mean_squared_error: 0.1982 - rmse: 0.4418 -
mean_absolute_percentage_error: 185.7990
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2302 -
mean_absolute_error: 0.3124 - mean_squared_error: 0.1989 - rmse: 0.4416 -
mean_absolute_percentage_error: 191.3507
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2267 -
mean_absolute_error: 0.3096 - mean_squared_error: 0.1957 - rmse: 0.4385 -
mean_absolute_percentage_error: 185.1234
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2251 -
mean_absolute_error: 0.3075 - mean_squared_error: 0.1945 - rmse: 0.4371 -
mean_absolute_percentage_error: 181.6939
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2231 -
mean_absolute_error: 0.3066 - mean_squared_error: 0.1927 - rmse: 0.4340 -
mean_absolute_percentage_error: 184.2771
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2220 -
mean_absolute_error: 0.3047 - mean_squared_error: 0.1919 - rmse: 0.4337 -
mean_absolute_percentage_error: 186.5453
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2207 -
mean_absolute_error: 0.3041 - mean_squared_error: 0.1906 - rmse: 0.4329 -
mean_absolute_percentage_error: 178.8805
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2214 -
mean_absolute_error: 0.3056 - mean_squared_error: 0.1914 - rmse: 0.4333 -
mean_absolute_percentage_error: 183.1845
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2203 -
mean_absolute_error: 0.3046 - mean_squared_error: 0.1907 - rmse: 0.4321 -
mean_absolute_percentage_error: 180.3331
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2189 -
mean_absolute_error: 0.3023 - mean_squared_error: 0.1893 - rmse: 0.4311 -
mean_absolute_percentage_error: 179.8274
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2173 -
mean_absolute_error: 0.3009 - mean_squared_error: 0.1879 - rmse: 0.4289 -
mean_absolute_percentage_error: 183.3932
Epoch 26/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.2173 -
mean_absolute_error: 0.2996 - mean_squared_error: 0.1879 - rmse: 0.4287 -
mean_absolute_percentage_error: 181.2673
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2151 -
mean_absolute_error: 0.2992 - mean_squared_error: 0.1858 - rmse: 0.4270 -
mean_absolute_percentage_error: 176.3887
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2146 -
mean_absolute_error: 0.2983 - mean_squared_error: 0.1854 - rmse: 0.4263 -
mean_absolute_percentage_error: 174.7913
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2141 -
mean_absolute_error: 0.2995 - mean_squared_error: 0.1852 - rmse: 0.4267 -
mean_absolute_percentage_error: 180.3085
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2139 -
mean_absolute_error: 0.2984 - mean_squared_error: 0.1852 - rmse: 0.4263 -
mean_absolute_percentage_error: 178.7310
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2116 -
mean_absolute_error: 0.2968 - mean_squared_error: 0.1828 - rmse: 0.4240 -
mean_absolute_percentage_error: 177.6707
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2136 -
mean_absolute_error: 0.2981 - mean_squared_error: 0.1850 - rmse: 0.4259 -
mean_absolute_percentage_error: 174.4387
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2100 -
mean_absolute_error: 0.2953 - mean_squared_error: 0.1815 - rmse: 0.4216 -
mean_absolute_percentage_error: 170.3528
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2107 -
mean_absolute_error: 0.2953 - mean_squared_error: 0.1822 - rmse: 0.4229 -
mean_absolute_percentage_error: 179.7548
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2105 -
mean_absolute_error: 0.2964 - mean_squared_error: 0.1821 - rmse: 0.4232 -
mean_absolute_percentage_error: 170.7012
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2116 -
mean_absolute_error: 0.2963 - mean_squared_error: 0.1834 - rmse: 0.4243 -
mean_absolute_percentage_error: 167.1481
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2089 -
mean_absolute_error: 0.2942 - mean_squared_error: 0.1808 - rmse: 0.4211 -
mean_absolute_percentage_error: 180.6830
Epoch 38/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.2067 -
mean_absolute_error: 0.2923 - mean_squared_error: 0.1787 - rmse: 0.4191 -
mean_absolute_percentage_error: 172.2492
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2052 -
mean_absolute_error: 0.2916 - mean_squared_error: 0.1773 - rmse: 0.4165 -
mean_absolute_percentage_error: 173.0824
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2063 -
mean_absolute_error: 0.2933 - mean_squared_error: 0.1784 - rmse: 0.4185 -
mean_absolute_percentage_error: 170.7199
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2064 -
mean_absolute_error: 0.2933 - mean_squared_error: 0.1786 - rmse: 0.4182 -
mean_absolute_percentage_error: 175.6605
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2073 -
mean_absolute_error: 0.2932 - mean_squared_error: 0.1797 - rmse: 0.4201 -
mean_absolute_percentage_error: 169.8992
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2081 -
mean_absolute_error: 0.2944 - mean_squared_error: 0.1805 - rmse: 0.4199 -
mean_absolute_percentage_error: 174.8524
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2055 -
mean_absolute_error: 0.2927 - mean_squared_error: 0.1779 - rmse: 0.4186 -
mean_absolute_percentage_error: 173.7692
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2065 -
mean_absolute_error: 0.2924 - mean_squared_error: 0.1789 - rmse: 0.4189 -
mean_absolute_percentage_error: 169.9869
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2025 -
mean_absolute_error: 0.2905 - mean_squared_error: 0.1751 - rmse: 0.4141 -
mean_absolute_percentage_error: 173.6717
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2057 -
mean_absolute_error: 0.2928 - mean_squared_error: 0.1784 - rmse: 0.4185 -
mean_absolute_percentage_error: 171.8493
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2022 -
mean_absolute_error: 0.2892 - mean_squared_error: 0.1749 - rmse: 0.4144 -
mean_absolute_percentage_error: 168.4343
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2025 -
mean_absolute_error: 0.2894 - mean_squared_error: 0.1753 - rmse: 0.4141 -
mean_absolute_percentage_error: 166.2332
Epoch 50/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.2013 -
mean_absolute_error: 0.2889 - mean_squared_error: 0.1743 - rmse: 0.4128 -
mean_absolute_percentage_error: 173.2817
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2000 -
mean_absolute_error: 0.2886 - mean_squared_error: 0.1731 - rmse: 0.4118 -
mean_absolute_percentage_error: 175.7606
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2027 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1760 - rmse: 0.4148 -
mean_absolute_percentage_error: 168.1639
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2017 -
mean_absolute_error: 0.2894 - mean_squared_error: 0.1750 - rmse: 0.4136 -
mean_absolute_percentage_error: 164.3000
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2063 -
mean_absolute_error: 0.2935 - mean_squared_error: 0.1795 - rmse: 0.4190 -
mean_absolute_percentage_error: 173.4007
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1996 -
mean_absolute_error: 0.2878 - mean_squared_error: 0.1729 - rmse: 0.4115 -
mean_absolute_percentage_error: 169.1537
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1988 -
mean_absolute_error: 0.2877 - mean_squared_error: 0.1723 - rmse: 0.4098 -
mean_absolute_percentage_error: 163.9422
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2010 -
mean_absolute_error: 0.2897 - mean_squared_error: 0.1744 - rmse: 0.4134 -
mean_absolute_percentage_error: 169.7772
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2017 -
mean_absolute_error: 0.2897 - mean_squared_error: 0.1749 - rmse: 0.4133 -
mean_absolute_percentage_error: 170.9238
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1974 -
mean_absolute_error: 0.2869 - mean_squared_error: 0.1708 - rmse: 0.4088 -
mean_absolute_percentage_error: 163.9875
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2006 -
mean_absolute_error: 0.2883 - mean_squared_error: 0.1741 - rmse: 0.4135 -
mean_absolute_percentage_error: 168.9785
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1967 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1703 - rmse: 0.4083 -
mean_absolute_percentage_error: 164.7446
Epoch 62/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1969 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1705 - rmse: 0.4090 -
mean_absolute_percentage_error: 168.0736
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1981 -
mean_absolute_error: 0.2874 - mean_squared_error: 0.1719 - rmse: 0.4094 -
mean_absolute_percentage_error: 169.4914
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1997 -
mean_absolute_error: 0.2897 - mean_squared_error: 0.1735 - rmse: 0.4119 -
mean_absolute_percentage_error: 173.0903
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2002 -
mean_absolute_error: 0.2889 - mean_squared_error: 0.1740 - rmse: 0.4129 -
mean_absolute_percentage_error: 166.6754
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1969 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1707 - rmse: 0.4092 -
mean_absolute_percentage_error: 170.9387
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1995 -
mean_absolute_error: 0.2883 - mean_squared_error: 0.1732 - rmse: 0.4122 -
mean_absolute_percentage_error: 165.4023
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1985 -
mean_absolute_error: 0.2883 - mean_squared_error: 0.1724 - rmse: 0.4114 -
mean_absolute_percentage_error: 168.4003
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1989 -
mean_absolute_error: 0.2884 - mean_squared_error: 0.1729 - rmse: 0.4113 -
mean_absolute_percentage_error: 169.8342
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1983 -
mean_absolute_error: 0.2870 - mean_squared_error: 0.1721 - rmse: 0.4101 -
mean_absolute_percentage_error: 167.6779
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1970 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1710 - rmse: 0.4089 -
mean_absolute_percentage_error: 168.0069
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1995 -
mean_absolute_error: 0.2871 - mean_squared_error: 0.1736 - rmse: 0.4119 -
mean_absolute_percentage_error: 168.1048
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1984 -
mean_absolute_error: 0.2880 - mean_squared_error: 0.1725 - rmse: 0.4100 -
mean_absolute_percentage_error: 165.3653
Epoch 74/100
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210/210 [==============================] - 0s 2ms/step - loss: 0.1958 -
mean_absolute_error: 0.2847 - mean_squared_error: 0.1699 - rmse: 0.4071 -
mean_absolute_percentage_error: 167.4970
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1935 -
mean_absolute_error: 0.2830 - mean_squared_error: 0.1677 - rmse: 0.4044 -
mean_absolute_percentage_error: 167.1134
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1955 -
mean_absolute_error: 0.2847 - mean_squared_error: 0.1697 - rmse: 0.4070 -
mean_absolute_percentage_error: 168.9085
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1687 - rmse: 0.4070 -
mean_absolute_percentage_error: 165.6034
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1930 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1672 - rmse: 0.4035 -
mean_absolute_percentage_error: 165.3751
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1933 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1677 - rmse: 0.4049 -
mean_absolute_percentage_error: 163.8307
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1938 -
mean_absolute_error: 0.2826 - mean_squared_error: 0.1681 - rmse: 0.4065 -
mean_absolute_percentage_error: 173.2769
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1938 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1682 - rmse: 0.4065 -
mean_absolute_percentage_error: 170.1099
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1960 -
mean_absolute_error: 0.2847 - mean_squared_error: 0.1703 - rmse: 0.4089 -
mean_absolute_percentage_error: 167.2122
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1663 - rmse: 0.4043 -
mean_absolute_percentage_error: 167.0910
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1958 -
mean_absolute_error: 0.2844 - mean_squared_error: 0.1702 - rmse: 0.4075 -
mean_absolute_percentage_error: 163.0715
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1948 -
mean_absolute_error: 0.2843 - mean_squared_error: 0.1695 - rmse: 0.4070 -
mean_absolute_percentage_error: 164.5368
Epoch 86/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1923 -
mean_absolute_error: 0.2824 - mean_squared_error: 0.1670 - rmse: 0.4055 -
mean_absolute_percentage_error: 172.3219
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1928 -
mean_absolute_error: 0.2821 - mean_squared_error: 0.1675 - rmse: 0.4051 -
mean_absolute_percentage_error: 167.8867
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1907 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1655 - rmse: 0.4021 -
mean_absolute_percentage_error: 166.8920
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1907 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1655 - rmse: 0.4032 -
mean_absolute_percentage_error: 168.6521
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1978 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1726 - rmse: 0.4106 -
mean_absolute_percentage_error: 171.6802
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1910 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1659 - rmse: 0.4031 -
mean_absolute_percentage_error: 164.4261
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1926 -
mean_absolute_error: 0.2821 - mean_squared_error: 0.1675 - rmse: 0.4055 -
mean_absolute_percentage_error: 165.1492
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1909 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1658 - rmse: 0.4035 -
mean_absolute_percentage_error: 164.4622
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1926 -
mean_absolute_error: 0.2821 - mean_squared_error: 0.1674 - rmse: 0.4041 -
mean_absolute_percentage_error: 163.1254
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1915 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1663 - rmse: 0.4034 -
mean_absolute_percentage_error: 168.4866
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1917 -
mean_absolute_error: 0.2804 - mean_squared_error: 0.1666 - rmse: 0.4037 -
mean_absolute_percentage_error: 161.7082
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1891 -
mean_absolute_error: 0.2782 - mean_squared_error: 0.1640 - rmse: 0.4010 -
mean_absolute_percentage_error: 165.0081
Epoch 98/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1899 -
mean_absolute_error: 0.2793 - mean_squared_error: 0.1649 - rmse: 0.4014 -
mean_absolute_percentage_error: 165.2443
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1890 -
mean_absolute_error: 0.2790 - mean_squared_error: 0.1640 - rmse: 0.4015 -
mean_absolute_percentage_error: 164.4145
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1908 -
mean_absolute_error: 0.2804 - mean_squared_error: 0.1657 - rmse: 0.4039 -
mean_absolute_percentage_error: 168.4710
100/100 [==============================] - 0s 2ms/step - loss: 0.2018 -
mean_absolute_error: 0.2957 - mean_squared_error: 0.1765 - rmse: 0.4154 -
mean_absolute_percentage_error: 170.0874
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1
------------------------------------------------------------------------
Training for fold 10 ...
Epoch 1/100
210/210 [==============================] - 1s 3ms/step - loss: 0.4590 -
mean_absolute_error: 0.4465 - mean_squared_error: 0.3511 - rmse: 0.5821 -
mean_absolute_percentage_error: 198.0324
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3076 -
mean_absolute_error: 0.3501 - mean_squared_error: 0.2402 - rmse: 0.4854 -
mean_absolute_percentage_error: 179.6157
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2791 -
mean_absolute_error: 0.3386 - mean_squared_error: 0.2275 - rmse: 0.4737 -
mean_absolute_percentage_error: 178.4358
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2687 -
mean_absolute_error: 0.3342 - mean_squared_error: 0.2235 - rmse: 0.4687 -
mean_absolute_percentage_error: 181.7720
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2606 -
mean_absolute_error: 0.3310 - mean_squared_error: 0.2192 - rmse: 0.4633 -
mean_absolute_percentage_error: 178.5443
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2528 -
mean_absolute_error: 0.3271 - mean_squared_error: 0.2138 - rmse: 0.4578 -
mean_absolute_percentage_error: 176.3191
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2483 -
mean_absolute_error: 0.3225 - mean_squared_error: 0.2110 - rmse: 0.4552 -
mean_absolute_percentage_error: 174.1957
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2464 -
```

```
mean_absolute_error: 0.3229 - mean_squared_error: 0.2101 - rmse: 0.4541 -
mean_absolute_percentage_error: 178.9346
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2419 -
mean_absolute_error: 0.3196 - mean_squared_error: 0.2066 - rmse: 0.4504 -
mean_absolute_percentage_error: 176.3468
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2382 -
mean_absolute_error: 0.3172 - mean_squared_error: 0.2040 - rmse: 0.4480 -
mean_absolute_percentage_error: 169.2846
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2370 -
mean_absolute_error: 0.3156 - mean_squared_error: 0.2031 - rmse: 0.4470 -
mean_absolute_percentage_error: 172.0651
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2392 -
mean_absolute_error: 0.3174 - mean_squared_error: 0.2057 - rmse: 0.4497 -
mean_absolute_percentage_error: 171.5336
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2337 -
mean_absolute_error: 0.3138 - mean_squared_error: 0.2005 - rmse: 0.4437 -
mean_absolute_percentage_error: 169.5163
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2322 -
mean_absolute_error: 0.3130 - mean_squared_error: 0.1994 - rmse: 0.4423 -
mean_absolute_percentage_error: 169.7234
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2311 -
mean_absolute_error: 0.3121 - mean_squared_error: 0.1985 - rmse: 0.4413 -
mean_absolute_percentage_error: 162.9221
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2314 -
mean_absolute_error: 0.3103 - mean_squared_error: 0.1986 - rmse: 0.4415 -
mean_absolute_percentage_error: 168.1661
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2299 -
mean_absolute_error: 0.3094 - mean_squared_error: 0.1974 - rmse: 0.4400 -
mean_absolute_percentage_error: 165.7664
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2292 -
mean_absolute_error: 0.3090 - mean_squared_error: 0.1968 - rmse: 0.4386 -
mean_absolute_percentage_error: 164.4186
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2259 -
mean_absolute_error: 0.3055 - mean_squared_error: 0.1934 - rmse: 0.4358 -
mean_absolute_percentage_error: 158.4314
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2241 -
```

```
mean_absolute_error: 0.3041 - mean_squared_error: 0.1917 - rmse: 0.4340 -
mean_absolute_percentage_error: 160.8856
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2252 -
mean_absolute_error: 0.3059 - mean_squared_error: 0.1928 - rmse: 0.4346 -
mean_absolute_percentage_error: 161.7052
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2228 -
mean_absolute_error: 0.3029 - mean_squared_error: 0.1905 - rmse: 0.4324 -
mean_absolute_percentage_error: 160.7676
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2215 -
mean_absolute_error: 0.3020 - mean_squared_error: 0.1890 - rmse: 0.4305 -
mean_absolute_percentage_error: 155.1805
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2194 -
mean_absolute_error: 0.2994 - mean_squared_error: 0.1871 - rmse: 0.4280 -
mean_absolute_percentage_error: 160.9687
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2185 -
mean_absolute_error: 0.2994 - mean_squared_error: 0.1861 - rmse: 0.4272 -
mean_absolute_percentage_error: 159.1683
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2186 -
mean_absolute_error: 0.2984 - mean_squared_error: 0.1864 - rmse: 0.4278 -
mean_absolute_percentage_error: 158.1711
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2171 -
mean_absolute_error: 0.2984 - mean_squared_error: 0.1849 - rmse: 0.4256 -
mean_absolute_percentage_error: 155.5820
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2156 -
mean_absolute_error: 0.2966 - mean_squared_error: 0.1835 - rmse: 0.4245 -
mean_absolute_percentage_error: 153.7858
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2155 -
mean_absolute_error: 0.2952 - mean_squared_error: 0.1837 - rmse: 0.4237 -
mean_absolute_percentage_error: 160.1412
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2152 -
mean_absolute_error: 0.2959 - mean_squared_error: 0.1837 - rmse: 0.4231 -
mean_absolute_percentage_error: 153.5636
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2178 -
mean_absolute_error: 0.2975 - mean_squared_error: 0.1860 - rmse: 0.4267 -
mean_absolute_percentage_error: 157.0039
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2140 -
```

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mean_absolute_error: 0.2949 - mean_squared_error: 0.1823 - rmse: 0.4235 -
mean_absolute_percentage_error: 148.8684
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2144 -
mean_absolute_error: 0.2952 - mean_squared_error: 0.1829 - rmse: 0.4225 -
mean_absolute_percentage_error: 153.3922
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2108 -
mean_absolute_error: 0.2920 - mean_squared_error: 0.1795 - rmse: 0.4196 -
mean_absolute_percentage_error: 153.5305
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2122 -
mean_absolute_error: 0.2933 - mean_squared_error: 0.1809 - rmse: 0.4216 -
mean_absolute_percentage_error: 156.4101
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2100 -
mean_absolute_error: 0.2913 - mean_squared_error: 0.1788 - rmse: 0.4182 -
mean_absolute_percentage_error: 152.6848
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2110 -
mean_absolute_error: 0.2917 - mean_squared_error: 0.1799 - rmse: 0.4200 -
mean_absolute_percentage_error: 152.0161
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2089 -
mean_absolute_error: 0.2910 - mean_squared_error: 0.1780 - rmse: 0.4163 -
mean_absolute_percentage_error: 154.0054
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2119 -
mean_absolute_error: 0.2928 - mean_squared_error: 0.1810 - rmse: 0.4204 -
mean_absolute_percentage_error: 147.3430
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2090 -
mean_absolute_error: 0.2904 - mean_squared_error: 0.1781 - rmse: 0.4168 -
mean_absolute_percentage_error: 151.5905
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2091 -
mean_absolute_error: 0.2917 - mean_squared_error: 0.1785 - rmse: 0.4184 -
mean_absolute_percentage_error: 146.8458
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2075 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1770 - rmse: 0.4164 -
mean_absolute_percentage_error: 154.9443
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2107 -
mean_absolute_error: 0.2930 - mean_squared_error: 0.1803 - rmse: 0.4205 -
mean_absolute_percentage_error: 148.7437
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2083 -
```

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mean_absolute_error: 0.2900 - mean_squared_error: 0.1779 - rmse: 0.4177 -
mean_absolute_percentage_error: 146.7973
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2059 -
mean_absolute_error: 0.2880 - mean_squared_error: 0.1757 - rmse: 0.4143 -
mean_absolute_percentage_error: 149.4582
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2051 -
mean_absolute_error: 0.2879 - mean_squared_error: 0.1750 - rmse: 0.4135 -
mean_absolute_percentage_error: 147.2568
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2045 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1746 - rmse: 0.4138 -
mean_absolute_percentage_error: 146.4476
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2025 -
mean_absolute_error: 0.2854 - mean_squared_error: 0.1728 - rmse: 0.4117 -
mean_absolute_percentage_error: 145.3264
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2042 -
mean_absolute_error: 0.2876 - mean_squared_error: 0.1745 - rmse: 0.4130 -
mean_absolute_percentage_error: 148.5974
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2036 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1741 - rmse: 0.4127 -
mean_absolute_percentage_error: 149.3010
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2060 -
mean_absolute_error: 0.2889 - mean_squared_error: 0.1764 - rmse: 0.4159 -
mean_absolute_percentage_error: 149.3580
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2029 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1737 - rmse: 0.4124 -
mean_absolute_percentage_error: 146.1579
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2029 -
mean_absolute_error: 0.2863 - mean_squared_error: 0.1736 - rmse: 0.4121 -
mean_absolute_percentage_error: 150.8703
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2043 -
mean_absolute_error: 0.2882 - mean_squared_error: 0.1750 - rmse: 0.4137 -
mean_absolute_percentage_error: 151.8698
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2091 -
mean_absolute_error: 0.2911 - mean_squared_error: 0.1798 - rmse: 0.4198 -
mean_absolute_percentage_error: 152.7926
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2021 -
```

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mean_absolute_error: 0.2859 - mean_squared_error: 0.1729 - rmse: 0.4116 -
mean_absolute_percentage_error: 146.0636
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2015 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1722 - rmse: 0.4111 -
mean_absolute_percentage_error: 144.5569
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2035 -
mean_absolute_error: 0.2869 - mean_squared_error: 0.1746 - rmse: 0.4129 -
mean_absolute_percentage_error: 150.1577
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2003 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1715 - rmse: 0.4097 -
mean_absolute_percentage_error: 149.1250
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2002 -
mean_absolute_error: 0.2844 - mean_squared_error: 0.1714 - rmse: 0.4102 -
mean_absolute_percentage_error: 148.2754
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2011 -
mean_absolute_error: 0.2856 - mean_squared_error: 0.1723 - rmse: 0.4114 -
mean_absolute_percentage_error: 145.7112
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2015 -
mean_absolute_error: 0.2858 - mean_squared_error: 0.1728 - rmse: 0.4115 -
mean_absolute_percentage_error: 143.7885
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1978 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1692 - rmse: 0.4073 -
mean_absolute_percentage_error: 146.1214
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1975 -
mean_absolute_error: 0.2820 - mean_squared_error: 0.1691 - rmse: 0.4062 -
mean_absolute_percentage_error: 146.9997
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1963 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1679 - rmse: 0.4058 -
mean_absolute_percentage_error: 148.9371
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1954 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1670 - rmse: 0.4041 -
mean_absolute_percentage_error: 150.2010
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2024 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1740 - rmse: 0.4122 -
mean_absolute_percentage_error: 146.5546
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1962 -
```

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mean_absolute_error: 0.2810 - mean_squared_error: 0.1681 - rmse: 0.4051 -
mean_absolute_percentage_error: 143.7088
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1978 -
mean_absolute_error: 0.2829 - mean_squared_error: 0.1697 - rmse: 0.4078 -
mean_absolute_percentage_error: 148.7670
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1963 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1683 - rmse: 0.4062 -
mean_absolute_percentage_error: 143.7171
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1971 -
mean_absolute_error: 0.2829 - mean_squared_error: 0.1691 - rmse: 0.4071 -
mean_absolute_percentage_error: 147.0455
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1948 -
mean_absolute_error: 0.2794 - mean_squared_error: 0.1668 - rmse: 0.4033 -
mean_absolute_percentage_error: 144.9000
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1981 -
mean_absolute_error: 0.2826 - mean_squared_error: 0.1701 - rmse: 0.4083 -
mean_absolute_percentage_error: 141.9570
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1965 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1688 - rmse: 0.4063 -
mean_absolute_percentage_error: 141.7451
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1945 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1669 - rmse: 0.4040 -
mean_absolute_percentage_error: 149.8883
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1941 -
mean_absolute_error: 0.2812 - mean_squared_error: 0.1664 - rmse: 0.4033 -
mean_absolute_percentage_error: 143.1505
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1931 -
mean_absolute_error: 0.2801 - mean_squared_error: 0.1657 - rmse: 0.4033 -
mean_absolute_percentage_error: 146.7462
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2815 - mean_squared_error: 0.1679 - rmse: 0.4059 -
mean_absolute_percentage_error: 143.7249
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1999 -
mean_absolute_error: 0.2859 - mean_squared_error: 0.1725 - rmse: 0.4112 -
mean_absolute_percentage_error: 141.5955
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1984 -
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mean_absolute_error: 0.2839 - mean_squared_error: 0.1712 - rmse: 0.4099 -
mean_absolute_percentage_error: 146.1848
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1947 -
mean_absolute_error: 0.2816 - mean_squared_error: 0.1675 - rmse: 0.4060 -
mean_absolute_percentage_error: 144.6494
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1939 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1670 - rmse: 0.4034 -
mean_absolute_percentage_error: 144.4884
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1933 -
mean_absolute_error: 0.2805 - mean_squared_error: 0.1665 - rmse: 0.4037 -
mean_absolute_percentage_error: 141.4207
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1939 -
mean_absolute_error: 0.2798 - mean_squared_error: 0.1673 - rmse: 0.4034 -
mean_absolute_percentage_error: 139.4471
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1913 -
mean_absolute_error: 0.2778 - mean_squared_error: 0.1647 - rmse: 0.4015 -
mean_absolute_percentage_error: 145.6127
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1955 -
mean_absolute_error: 0.2811 - mean_squared_error: 0.1690 - rmse: 0.4067 -
mean_absolute_percentage_error: 142.6577
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1909 -
mean_absolute_error: 0.2789 - mean_squared_error: 0.1644 - rmse: 0.4011 -
mean_absolute_percentage_error: 144.4155
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1935 -
mean_absolute_error: 0.2806 - mean_squared_error: 0.1671 - rmse: 0.4051 -
mean_absolute_percentage_error: 143.7749
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1921 -
mean_absolute_error: 0.2797 - mean_squared_error: 0.1657 - rmse: 0.4025 -
mean_absolute_percentage_error: 143.7935
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1948 -
mean_absolute_error: 0.2816 - mean_squared_error: 0.1685 - rmse: 0.4050 -
mean_absolute_percentage_error: 144.6853
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1912 -
mean_absolute_error: 0.2795 - mean_squared_error: 0.1651 - rmse: 0.4019 -
mean_absolute_percentage_error: 143.7372
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1926 -
```

```
mean_absolute_error: 0.2802 - mean_squared_error: 0.1666 - rmse: 0.4031 -
mean_absolute_percentage_error: 143.8299
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1918 -
mean_absolute_error: 0.2796 - mean_squared_error: 0.1659 - rmse: 0.4036 -
mean_absolute_percentage_error: 144.7805
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1941 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1681 - rmse: 0.4056 -
mean_absolute_percentage_error: 144.5115
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1941 -
mean_absolute_error: 0.2812 - mean_squared_error: 0.1684 - rmse: 0.4063 -
mean_absolute_percentage_error: 147.8756
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1904 -
mean_absolute_error: 0.2788 - mean_squared_error: 0.1649 - rmse: 0.4015 -
mean_absolute_percentage_error: 147.3945
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1897 -
mean_absolute_error: 0.2780 - mean_squared_error: 0.1642 - rmse: 0.4014 -
mean_absolute_percentage_error: 139.3024
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1906 -
mean_absolute_error: 0.2781 - mean_squared_error: 0.1650 - rmse: 0.4019 -
mean_absolute_percentage_error: 141.8931
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1917 -
mean_absolute_error: 0.2781 - mean_squared_error: 0.1661 - rmse: 0.4033 -
mean_absolute_percentage_error: 138.7147
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1938 -
mean_absolute_error: 0.2804 - mean_squared_error: 0.1683 - rmse: 0.4052 -
mean_absolute_percentage_error: 145.2324
100/100 [==============================] - 0s 1ms/step - loss: 0.1928 -
mean_absolute_error: 0.2766 - mean_squared_error: 0.1675 - rmse: 0.4031 -
mean_absolute_percentage_error: 162.8571
200/200 [==============================] - 0s 1ms/step
```
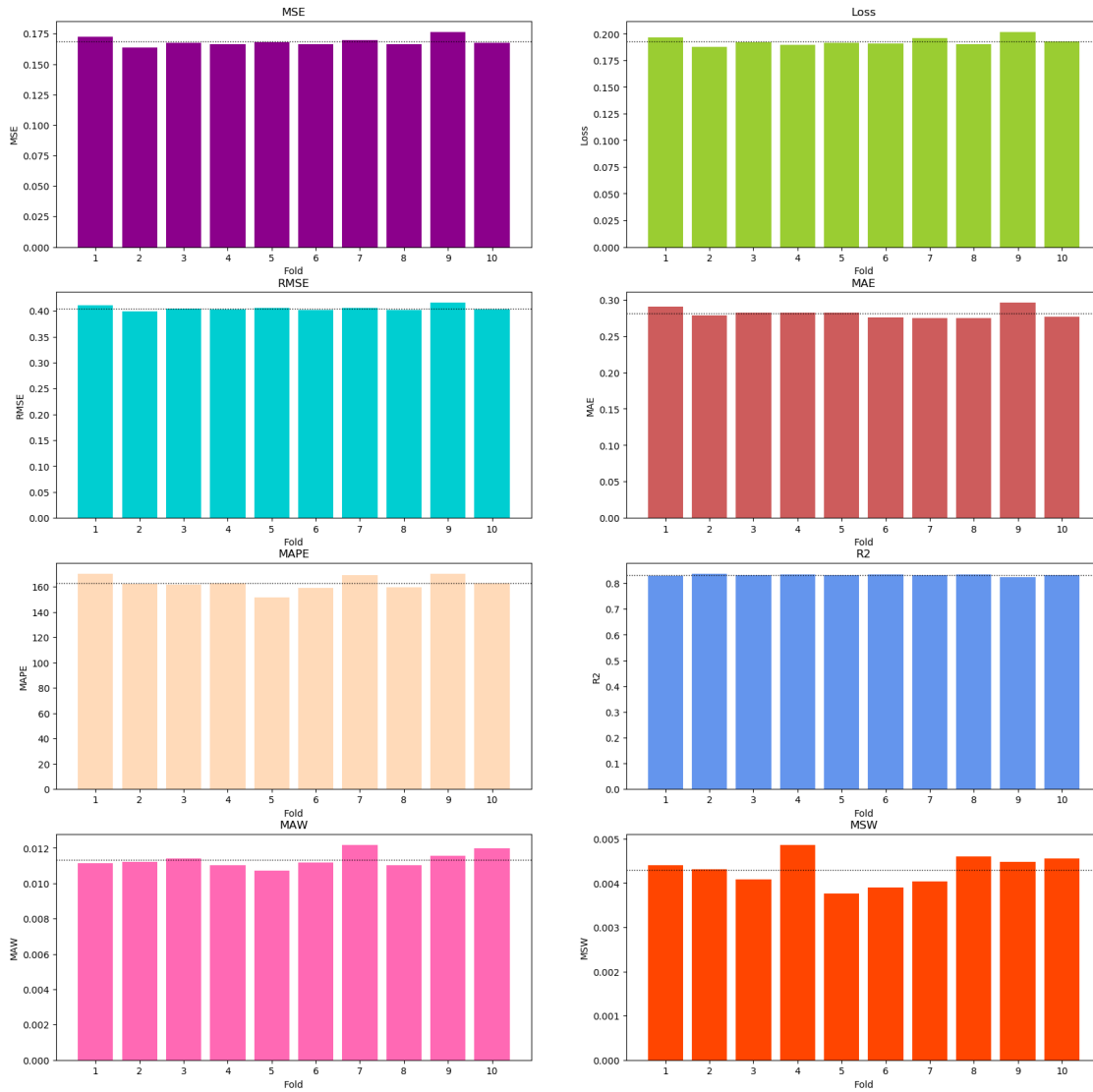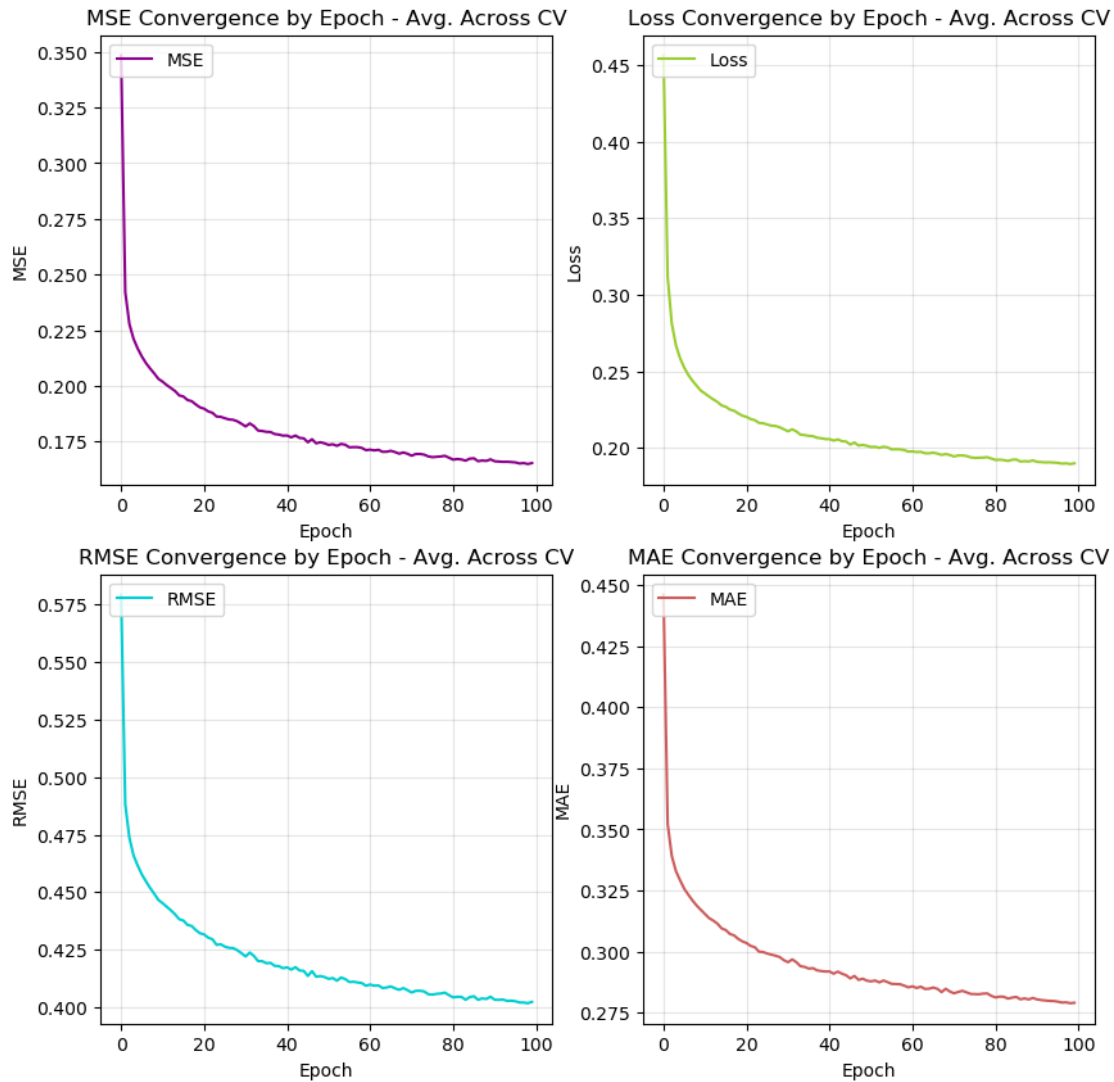
[17]:
```python
#Graph for Measures
figure_l1 = graph_metric_by_fold(compendium_l1)
plt.show()
```

```
[18]: #Graph for Convergence
      figure_l1 = graph_epoch_convergence(compendium_l1)
      plt.show()
```

MSE Convergence by Epoch - Avg. Across CV
Loss Convergence by Epoch - Avg. Across CV
RMSE Convergence by Epoch - Avg. Across CV
MAE Convergence by Epoch - Avg. Across CV

6 L2 Regularization

```
[19]: #Creating the MLP
compendium_l2 = folds_and_model(x_tr, y_tr, x_ts, y_ts,
                                neurons = 41, regularizer = 'L2', input_no = 81,
                                batch = 64, epochs_no = 100)
```

```
Regularizer chosen is L2
---------------------------------------------------------------------------
Training for fold 1 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.3589 -
mean_absolute_error: 0.4481 - mean_squared_error: 0.3492 - rmse: 0.5796 -
```

```
mean_absolute_percentage_error: 197.4906
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2480 -
mean_absolute_error: 0.3459 - mean_squared_error: 0.2373 - rmse: 0.4832 -
mean_absolute_percentage_error: 174.0029
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2290 -
mean_absolute_error: 0.3270 - mean_squared_error: 0.2180 - rmse: 0.4632 -
mean_absolute_percentage_error: 177.3752
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2196 -
mean_absolute_error: 0.3185 - mean_squared_error: 0.2087 - rmse: 0.4531 -
mean_absolute_percentage_error: 171.7108
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2145 -
mean_absolute_error: 0.3130 - mean_squared_error: 0.2035 - rmse: 0.4478 -
mean_absolute_percentage_error: 171.4182
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2104 -
mean_absolute_error: 0.3097 - mean_squared_error: 0.1992 - rmse: 0.4417 -
mean_absolute_percentage_error: 170.7482
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2066 -
mean_absolute_error: 0.3060 - mean_squared_error: 0.1955 - rmse: 0.4380 -
mean_absolute_percentage_error: 169.4724
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2026 -
mean_absolute_error: 0.3027 - mean_squared_error: 0.1913 - rmse: 0.4332 -
mean_absolute_percentage_error: 165.1230
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1981 -
mean_absolute_error: 0.2982 - mean_squared_error: 0.1867 - rmse: 0.4282 -
mean_absolute_percentage_error: 165.2296
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1967 -
mean_absolute_error: 0.2976 - mean_squared_error: 0.1853 - rmse: 0.4262 -
mean_absolute_percentage_error: 162.2139
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1957 -
mean_absolute_error: 0.2960 - mean_squared_error: 0.1843 - rmse: 0.4251 -
mean_absolute_percentage_error: 166.6256
Epoch 12/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1930 -
mean_absolute_error: 0.2929 - mean_squared_error: 0.1815 - rmse: 0.4223 -
mean_absolute_percentage_error: 160.9496
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1922 -
mean_absolute_error: 0.2916 - mean_squared_error: 0.1806 - rmse: 0.4200 -
```

```
mean_absolute_percentage_error: 159.4953
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1902 -
mean_absolute_error: 0.2901 - mean_squared_error: 0.1785 - rmse: 0.4178 -
mean_absolute_percentage_error: 157.3700
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1884 -
mean_absolute_error: 0.2881 - mean_squared_error: 0.1767 - rmse: 0.4163 -
mean_absolute_percentage_error: 159.4395
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1885 -
mean_absolute_error: 0.2886 - mean_squared_error: 0.1769 - rmse: 0.4162 -
mean_absolute_percentage_error: 161.6326
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1861 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1744 - rmse: 0.4131 -
mean_absolute_percentage_error: 153.8849
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1859 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1742 - rmse: 0.4138 -
mean_absolute_percentage_error: 157.0898
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1843 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1725 - rmse: 0.4108 -
mean_absolute_percentage_error: 155.5677
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1826 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1708 - rmse: 0.4091 -
mean_absolute_percentage_error: 155.1735
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1832 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1715 - rmse: 0.4092 -
mean_absolute_percentage_error: 150.4426
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1825 -
mean_absolute_error: 0.2831 - mean_squared_error: 0.1708 - rmse: 0.4081 -
mean_absolute_percentage_error: 154.5961
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1793 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1675 - rmse: 0.4049 -
mean_absolute_percentage_error: 155.7057
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1786 -
mean_absolute_error: 0.2790 - mean_squared_error: 0.1668 - rmse: 0.4046 -
mean_absolute_percentage_error: 153.1407
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1801 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1684 - rmse: 0.4053 -
```

```
mean_absolute_percentage_error: 154.8214
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1795 -
mean_absolute_error: 0.2805 - mean_squared_error: 0.1678 - rmse: 0.4053 -
mean_absolute_percentage_error: 152.2189
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1783 -
mean_absolute_error: 0.2785 - mean_squared_error: 0.1666 - rmse: 0.4036 -
mean_absolute_percentage_error: 150.8350
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1752 -
mean_absolute_error: 0.2759 - mean_squared_error: 0.1635 - rmse: 0.4005 -
mean_absolute_percentage_error: 151.6050
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1760 -
mean_absolute_error: 0.2768 - mean_squared_error: 0.1643 - rmse: 0.4008 -
mean_absolute_percentage_error: 148.2474
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1784 -
mean_absolute_error: 0.2785 - mean_squared_error: 0.1668 - rmse: 0.4034 -
mean_absolute_percentage_error: 146.7514
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1761 -
mean_absolute_error: 0.2768 - mean_squared_error: 0.1644 - rmse: 0.4016 -
mean_absolute_percentage_error: 148.6449
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1741 -
mean_absolute_error: 0.2752 - mean_squared_error: 0.1625 - rmse: 0.3990 -
mean_absolute_percentage_error: 151.2564
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1735 -
mean_absolute_error: 0.2744 - mean_squared_error: 0.1619 - rmse: 0.3976 -
mean_absolute_percentage_error: 151.8829
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1751 -
mean_absolute_error: 0.2758 - mean_squared_error: 0.1635 - rmse: 0.3997 -
mean_absolute_percentage_error: 148.1298
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1734 -
mean_absolute_error: 0.2736 - mean_squared_error: 0.1618 - rmse: 0.3985 -
mean_absolute_percentage_error: 148.4147
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1726 -
mean_absolute_error: 0.2726 - mean_squared_error: 0.1611 - rmse: 0.3968 -
mean_absolute_percentage_error: 147.9061
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1746 -
mean_absolute_error: 0.2754 - mean_squared_error: 0.1630 - rmse: 0.4001 -
```

```
mean_absolute_percentage_error: 150.8807
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1717 -
mean_absolute_error: 0.2728 - mean_squared_error: 0.1602 - rmse: 0.3966 -
mean_absolute_percentage_error: 147.9407
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1727 -
mean_absolute_error: 0.2727 - mean_squared_error: 0.1612 - rmse: 0.3968 -
mean_absolute_percentage_error: 149.4504
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1720 -
mean_absolute_error: 0.2730 - mean_squared_error: 0.1604 - rmse: 0.3962 -
mean_absolute_percentage_error: 145.3034
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1713 -
mean_absolute_error: 0.2721 - mean_squared_error: 0.1597 - rmse: 0.3955 -
mean_absolute_percentage_error: 146.6614
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1712 -
mean_absolute_error: 0.2724 - mean_squared_error: 0.1596 - rmse: 0.3944 -
mean_absolute_percentage_error: 152.7914
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1712 -
mean_absolute_error: 0.2708 - mean_squared_error: 0.1597 - rmse: 0.3950 -
mean_absolute_percentage_error: 144.2038
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1707 -
mean_absolute_error: 0.2717 - mean_squared_error: 0.1592 - rmse: 0.3942 -
mean_absolute_percentage_error: 145.7886
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1699 -
mean_absolute_error: 0.2707 - mean_squared_error: 0.1584 - rmse: 0.3932 -
mean_absolute_percentage_error: 149.6841
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1707 -
mean_absolute_error: 0.2704 - mean_squared_error: 0.1592 - rmse: 0.3947 -
mean_absolute_percentage_error: 146.7935
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1689 -
mean_absolute_error: 0.2704 - mean_squared_error: 0.1574 - rmse: 0.3925 -
mean_absolute_percentage_error: 143.2827
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1691 -
mean_absolute_error: 0.2704 - mean_squared_error: 0.1576 - rmse: 0.3916 -
mean_absolute_percentage_error: 143.3174
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1709 -
mean_absolute_error: 0.2711 - mean_squared_error: 0.1594 - rmse: 0.3948 -
```

```
mean_absolute_percentage_error: 144.9718
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1707 -
mean_absolute_error: 0.2707 - mean_squared_error: 0.1592 - rmse: 0.3946 -
mean_absolute_percentage_error: 147.1650
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1677 -
mean_absolute_error: 0.2666 - mean_squared_error: 0.1562 - rmse: 0.3908 -
mean_absolute_percentage_error: 141.3930
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1663 -
mean_absolute_error: 0.2669 - mean_squared_error: 0.1548 - rmse: 0.3893 -
mean_absolute_percentage_error: 144.9413
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1678 -
mean_absolute_error: 0.2687 - mean_squared_error: 0.1563 - rmse: 0.3908 -
mean_absolute_percentage_error: 143.4090
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1686 -
mean_absolute_error: 0.2686 - mean_squared_error: 0.1570 - rmse: 0.3926 -
mean_absolute_percentage_error: 139.5275
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1678 -
mean_absolute_error: 0.2681 - mean_squared_error: 0.1562 - rmse: 0.3913 -
mean_absolute_percentage_error: 141.6116
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1673 -
mean_absolute_error: 0.2675 - mean_squared_error: 0.1558 - rmse: 0.3899 -
mean_absolute_percentage_error: 138.7210
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1685 -
mean_absolute_error: 0.2683 - mean_squared_error: 0.1569 - rmse: 0.3922 -
mean_absolute_percentage_error: 142.8091
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1679 -
mean_absolute_error: 0.2680 - mean_squared_error: 0.1563 - rmse: 0.3902 -
mean_absolute_percentage_error: 149.5575
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1665 -
mean_absolute_error: 0.2673 - mean_squared_error: 0.1550 - rmse: 0.3888 -
mean_absolute_percentage_error: 139.3431
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1649 -
mean_absolute_error: 0.2662 - mean_squared_error: 0.1533 - rmse: 0.3873 -
mean_absolute_percentage_error: 148.6125
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1652 -
mean_absolute_error: 0.2653 - mean_squared_error: 0.1535 - rmse: 0.3877 -
```

```
mean_absolute_percentage_error: 147.0604
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1647 -
mean_absolute_error: 0.2656 - mean_squared_error: 0.1531 - rmse: 0.3862 -
mean_absolute_percentage_error: 147.6498
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1649 -
mean_absolute_error: 0.2659 - mean_squared_error: 0.1533 - rmse: 0.3877 -
mean_absolute_percentage_error: 140.6194
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1651 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1535 - rmse: 0.3876 -
mean_absolute_percentage_error: 143.1873
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1658 -
mean_absolute_error: 0.2656 - mean_squared_error: 0.1542 - rmse: 0.3889 -
mean_absolute_percentage_error: 140.7238
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1636 -
mean_absolute_error: 0.2640 - mean_squared_error: 0.1520 - rmse: 0.3847 -
mean_absolute_percentage_error: 136.8917
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1641 -
mean_absolute_error: 0.2648 - mean_squared_error: 0.1525 - rmse: 0.3861 -
mean_absolute_percentage_error: 140.2806
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1624 -
mean_absolute_error: 0.2638 - mean_squared_error: 0.1508 - rmse: 0.3842 -
mean_absolute_percentage_error: 142.9273
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1635 -
mean_absolute_error: 0.2640 - mean_squared_error: 0.1519 - rmse: 0.3859 -
mean_absolute_percentage_error: 149.8181
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1617 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1502 - rmse: 0.3832 -
mean_absolute_percentage_error: 141.8091
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1617 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1502 - rmse: 0.3837 -
mean_absolute_percentage_error: 139.8233
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1654 -
mean_absolute_error: 0.2659 - mean_squared_error: 0.1539 - rmse: 0.3881 -
mean_absolute_percentage_error: 144.6826
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1633 -
mean_absolute_error: 0.2637 - mean_squared_error: 0.1517 - rmse: 0.3858 -
```

```
mean_absolute_percentage_error: 138.9263
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1633 -
mean_absolute_error: 0.2646 - mean_squared_error: 0.1517 - rmse: 0.3849 -
mean_absolute_percentage_error: 145.1622
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1692 -
mean_absolute_error: 0.2701 - mean_squared_error: 0.1576 - rmse: 0.3920 -
mean_absolute_percentage_error: 142.0271
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1613 -
mean_absolute_error: 0.2619 - mean_squared_error: 0.1497 - rmse: 0.3822 -
mean_absolute_percentage_error: 139.2601
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1622 -
mean_absolute_error: 0.2616 - mean_squared_error: 0.1506 - rmse: 0.3829 -
mean_absolute_percentage_error: 144.3971
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1607 -
mean_absolute_error: 0.2607 - mean_squared_error: 0.1491 - rmse: 0.3820 -
mean_absolute_percentage_error: 146.0644
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1603 -
mean_absolute_error: 0.2610 - mean_squared_error: 0.1487 - rmse: 0.3808 -
mean_absolute_percentage_error: 142.6663
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1639 -
mean_absolute_error: 0.2636 - mean_squared_error: 0.1523 - rmse: 0.3860 -
mean_absolute_percentage_error: 139.5364
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1633 -
mean_absolute_error: 0.2638 - mean_squared_error: 0.1517 - rmse: 0.3846 -
mean_absolute_percentage_error: 142.2506
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1656 -
mean_absolute_error: 0.2643 - mean_squared_error: 0.1540 - rmse: 0.3877 -
mean_absolute_percentage_error: 143.1355
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1616 -
mean_absolute_error: 0.2609 - mean_squared_error: 0.1500 - rmse: 0.3824 -
mean_absolute_percentage_error: 136.6956
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1624 -
mean_absolute_error: 0.2622 - mean_squared_error: 0.1507 - rmse: 0.3829 -
mean_absolute_percentage_error: 143.4089
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1612 -
mean_absolute_error: 0.2621 - mean_squared_error: 0.1495 - rmse: 0.3820 -
```

```
mean_absolute_percentage_error: 143.2393
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1608 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1491 - rmse: 0.3804 -
mean_absolute_percentage_error: 137.6770
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1605 -
mean_absolute_error: 0.2606 - mean_squared_error: 0.1488 - rmse: 0.3811 -
mean_absolute_percentage_error: 140.4140
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1594 -
mean_absolute_error: 0.2590 - mean_squared_error: 0.1477 - rmse: 0.3805 -
mean_absolute_percentage_error: 141.8419
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1597 -
mean_absolute_error: 0.2595 - mean_squared_error: 0.1480 - rmse: 0.3798 -
mean_absolute_percentage_error: 138.4162
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1637 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1520 - rmse: 0.3859 -
mean_absolute_percentage_error: 143.1418
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1592 -
mean_absolute_error: 0.2589 - mean_squared_error: 0.1475 - rmse: 0.3787 -
mean_absolute_percentage_error: 142.3528
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1594 -
mean_absolute_error: 0.2596 - mean_squared_error: 0.1477 - rmse: 0.3796 -
mean_absolute_percentage_error: 141.0265
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1606 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1489 - rmse: 0.3812 -
mean_absolute_percentage_error: 144.6270
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1586 -
mean_absolute_error: 0.2588 - mean_squared_error: 0.1469 - rmse: 0.3791 -
mean_absolute_percentage_error: 142.5962
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1639 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1522 - rmse: 0.3858 -
mean_absolute_percentage_error: 141.7533
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1584 -
mean_absolute_error: 0.2586 - mean_squared_error: 0.1468 - rmse: 0.3791 -
mean_absolute_percentage_error: 140.5719
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1571 -
mean_absolute_error: 0.2578 - mean_squared_error: 0.1454 - rmse: 0.3768 -
```

```
mean_absolute_percentage_error: 136.3095
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1596 -
mean_absolute_error: 0.2592 - mean_squared_error: 0.1479 - rmse: 0.3799 -
mean_absolute_percentage_error: 141.8666
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1614 -
mean_absolute_error: 0.2617 - mean_squared_error: 0.1497 - rmse: 0.3824 -
mean_absolute_percentage_error: 140.8946
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1598 -
mean_absolute_error: 0.2609 - mean_squared_error: 0.1481 - rmse: 0.3793 -
mean_absolute_percentage_error: 140.4627
100/100 [==============================] - 0s 2ms/step - loss: 0.1725 -
mean_absolute_error: 0.2585 - mean_squared_error: 0.1607 - rmse: 0.3936 -
mean_absolute_percentage_error: 163.6096
200/200 [==============================] - 0s 993us/step
Regularizer chosen is L2
-----------------------------------------------------------------------------
Training for fold 2 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.3509 -
mean_absolute_error: 0.4390 - mean_squared_error: 0.3414 - rmse: 0.5740 -
mean_absolute_percentage_error: 201.5939
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2418 -
mean_absolute_error: 0.3432 - mean_squared_error: 0.2314 - rmse: 0.4767 -
mean_absolute_percentage_error: 195.2348
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2279 -
mean_absolute_error: 0.3293 - mean_squared_error: 0.2174 - rmse: 0.4621 -
mean_absolute_percentage_error: 183.6413
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2191 -
mean_absolute_error: 0.3210 - mean_squared_error: 0.2085 - rmse: 0.4531 -
mean_absolute_percentage_error: 192.8145
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2123 -
mean_absolute_error: 0.3147 - mean_squared_error: 0.2016 - rmse: 0.4446 -
mean_absolute_percentage_error: 186.5255
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2095 -
mean_absolute_error: 0.3125 - mean_squared_error: 0.1987 - rmse: 0.4421 -
mean_absolute_percentage_error: 186.3271
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2037 -
mean_absolute_error: 0.3061 - mean_squared_error: 0.1928 - rmse: 0.4342 -
mean_absolute_percentage_error: 183.9345
```

```
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2028 -
mean_absolute_error: 0.3059 - mean_squared_error: 0.1918 - rmse: 0.4342 -
mean_absolute_percentage_error: 184.0865
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1994 -
mean_absolute_error: 0.3024 - mean_squared_error: 0.1882 - rmse: 0.4301 -
mean_absolute_percentage_error: 182.8759
Epoch 10/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1963 -
mean_absolute_error: 0.2994 - mean_squared_error: 0.1850 - rmse: 0.4258 -
mean_absolute_percentage_error: 177.9364
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1943 -
mean_absolute_error: 0.2971 - mean_squared_error: 0.1829 - rmse: 0.4233 -
mean_absolute_percentage_error: 176.2952
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1905 -
mean_absolute_error: 0.2936 - mean_squared_error: 0.1790 - rmse: 0.4197 -
mean_absolute_percentage_error: 172.8573
Epoch 13/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1885 -
mean_absolute_error: 0.2918 - mean_squared_error: 0.1770 - rmse: 0.4171 -
mean_absolute_percentage_error: 171.7304
Epoch 14/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1882 -
mean_absolute_error: 0.2924 - mean_squared_error: 0.1765 - rmse: 0.4149 -
mean_absolute_percentage_error: 173.3011
Epoch 15/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1870 -
mean_absolute_error: 0.2895 - mean_squared_error: 0.1752 - rmse: 0.4145 -
mean_absolute_percentage_error: 172.2272
Epoch 16/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1831 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1713 - rmse: 0.4090 -
mean_absolute_percentage_error: 170.3408
Epoch 17/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1849 -
mean_absolute_error: 0.2884 - mean_squared_error: 0.1730 - rmse: 0.4117 -
mean_absolute_percentage_error: 171.6837
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1828 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1709 - rmse: 0.4089 -
mean_absolute_percentage_error: 163.9081
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1790 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1671 - rmse: 0.4046 -
mean_absolute_percentage_error: 162.5097
```

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Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1801 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1681 - rmse: 0.4050 -
mean_absolute_percentage_error: 162.7399
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1809 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1689 - rmse: 0.4059 -
mean_absolute_percentage_error: 168.1953
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1776 -
mean_absolute_error: 0.2802 - mean_squared_error: 0.1655 - rmse: 0.4026 -
mean_absolute_percentage_error: 163.1445
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1763 -
mean_absolute_error: 0.2785 - mean_squared_error: 0.1643 - rmse: 0.4013 -
mean_absolute_percentage_error: 163.0926
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1764 -
mean_absolute_error: 0.2794 - mean_squared_error: 0.1644 - rmse: 0.4018 -
mean_absolute_percentage_error: 157.2539
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1746 -
mean_absolute_error: 0.2777 - mean_squared_error: 0.1626 - rmse: 0.3992 -
mean_absolute_percentage_error: 158.2453
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1767 -
mean_absolute_error: 0.2797 - mean_squared_error: 0.1647 - rmse: 0.4017 -
mean_absolute_percentage_error: 165.5590
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1730 -
mean_absolute_error: 0.2756 - mean_squared_error: 0.1611 - rmse: 0.3971 -
mean_absolute_percentage_error: 160.4329
Epoch 28/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1730 -
mean_absolute_error: 0.2765 - mean_squared_error: 0.1610 - rmse: 0.3966 -
mean_absolute_percentage_error: 158.6153
Epoch 29/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1741 -
mean_absolute_error: 0.2771 - mean_squared_error: 0.1621 - rmse: 0.3979 -
mean_absolute_percentage_error: 154.6852
Epoch 30/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1747 -
mean_absolute_error: 0.2769 - mean_squared_error: 0.1627 - rmse: 0.3994 -
mean_absolute_percentage_error: 165.1570
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1709 -
mean_absolute_error: 0.2733 - mean_squared_error: 0.1588 - rmse: 0.3933 -
mean_absolute_percentage_error: 155.9133
```

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Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1728 -
mean_absolute_error: 0.2756 - mean_squared_error: 0.1608 - rmse: 0.3980 -
mean_absolute_percentage_error: 156.8430
Epoch 33/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1718 -
mean_absolute_error: 0.2756 - mean_squared_error: 0.1598 - rmse: 0.3955 -
mean_absolute_percentage_error: 160.7045
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1723 -
mean_absolute_error: 0.2757 - mean_squared_error: 0.1603 - rmse: 0.3958 -
mean_absolute_percentage_error: 157.6712
Epoch 35/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1735 -
mean_absolute_error: 0.2761 - mean_squared_error: 0.1615 - rmse: 0.3977 -
mean_absolute_percentage_error: 157.6029
Epoch 36/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1713 -
mean_absolute_error: 0.2743 - mean_squared_error: 0.1593 - rmse: 0.3955 -
mean_absolute_percentage_error: 159.4624
Epoch 37/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1703 -
mean_absolute_error: 0.2737 - mean_squared_error: 0.1583 - rmse: 0.3929 -
mean_absolute_percentage_error: 152.0506
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1704 -
mean_absolute_error: 0.2731 - mean_squared_error: 0.1585 - rmse: 0.3942 -
mean_absolute_percentage_error: 156.2823
Epoch 39/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1705 -
mean_absolute_error: 0.2733 - mean_squared_error: 0.1585 - rmse: 0.3933 -
mean_absolute_percentage_error: 156.1169
Epoch 40/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1688 -
mean_absolute_error: 0.2713 - mean_squared_error: 0.1569 - rmse: 0.3915 -
mean_absolute_percentage_error: 156.6436
Epoch 41/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1671 -
mean_absolute_error: 0.2708 - mean_squared_error: 0.1551 - rmse: 0.3895 -
mean_absolute_percentage_error: 156.1853
Epoch 42/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1677 -
mean_absolute_error: 0.2707 - mean_squared_error: 0.1557 - rmse: 0.3904 -
mean_absolute_percentage_error: 155.3057
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1684 -
mean_absolute_error: 0.2727 - mean_squared_error: 0.1564 - rmse: 0.3919 -
mean_absolute_percentage_error: 158.0626
```

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Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1683 -
mean_absolute_error: 0.2708 - mean_squared_error: 0.1563 - rmse: 0.3907 -
mean_absolute_percentage_error: 154.7466
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1671 -
mean_absolute_error: 0.2697 - mean_squared_error: 0.1551 - rmse: 0.3902 -
mean_absolute_percentage_error: 155.9522
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1702 -
mean_absolute_error: 0.2735 - mean_squared_error: 0.1581 - rmse: 0.3931 -
mean_absolute_percentage_error: 156.3893
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1671 -
mean_absolute_error: 0.2695 - mean_squared_error: 0.1551 - rmse: 0.3908 -
mean_absolute_percentage_error: 153.9439
Epoch 48/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1678 -
mean_absolute_error: 0.2700 - mean_squared_error: 0.1558 - rmse: 0.3898 -
mean_absolute_percentage_error: 153.9595
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1659 -
mean_absolute_error: 0.2687 - mean_squared_error: 0.1539 - rmse: 0.3881 -
mean_absolute_percentage_error: 157.9730
Epoch 50/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1644 -
mean_absolute_error: 0.2682 - mean_squared_error: 0.1523 - rmse: 0.3860 -
mean_absolute_percentage_error: 149.9913
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1659 -
mean_absolute_error: 0.2679 - mean_squared_error: 0.1538 - rmse: 0.3876 -
mean_absolute_percentage_error: 153.8454
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1658 -
mean_absolute_error: 0.2703 - mean_squared_error: 0.1537 - rmse: 0.3879 -
mean_absolute_percentage_error: 155.0480
Epoch 53/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1654 -
mean_absolute_error: 0.2674 - mean_squared_error: 0.1533 - rmse: 0.3876 -
mean_absolute_percentage_error: 154.4072
Epoch 54/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1636 -
mean_absolute_error: 0.2663 - mean_squared_error: 0.1515 - rmse: 0.3858 -
mean_absolute_percentage_error: 152.9322
Epoch 55/100
210/210 [==============================] - 1s 4ms/step - loss: 0.1632 -
mean_absolute_error: 0.2664 - mean_squared_error: 0.1511 - rmse: 0.3842 -
mean_absolute_percentage_error: 149.9291
```

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Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1653 -
mean_absolute_error: 0.2689 - mean_squared_error: 0.1532 - rmse: 0.3875 -
mean_absolute_percentage_error: 154.1185
Epoch 57/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1643 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1522 - rmse: 0.3863 -
mean_absolute_percentage_error: 153.2239
Epoch 58/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1630 -
mean_absolute_error: 0.2653 - mean_squared_error: 0.1509 - rmse: 0.3844 -
mean_absolute_percentage_error: 153.9136
Epoch 59/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1631 -
mean_absolute_error: 0.2667 - mean_squared_error: 0.1510 - rmse: 0.3849 -
mean_absolute_percentage_error: 154.1473
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1611 -
mean_absolute_error: 0.2632 - mean_squared_error: 0.1490 - rmse: 0.3815 -
mean_absolute_percentage_error: 150.6465
Epoch 61/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1614 -
mean_absolute_error: 0.2644 - mean_squared_error: 0.1493 - rmse: 0.3821 -
mean_absolute_percentage_error: 149.9761
Epoch 62/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1651 -
mean_absolute_error: 0.2682 - mean_squared_error: 0.1530 - rmse: 0.3869 -
mean_absolute_percentage_error: 146.9017
Epoch 63/100
210/210 [==============================] - 2s 8ms/step - loss: 0.1622 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1500 - rmse: 0.3835 -
mean_absolute_percentage_error: 150.5835
Epoch 64/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1612 -
mean_absolute_error: 0.2638 - mean_squared_error: 0.1491 - rmse: 0.3812 -
mean_absolute_percentage_error: 154.0572
Epoch 65/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1619 -
mean_absolute_error: 0.2639 - mean_squared_error: 0.1498 - rmse: 0.3827 -
mean_absolute_percentage_error: 151.2712
Epoch 66/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1643 -
mean_absolute_error: 0.2664 - mean_squared_error: 0.1521 - rmse: 0.3849 -
mean_absolute_percentage_error: 158.6116
Epoch 67/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1605 -
mean_absolute_error: 0.2638 - mean_squared_error: 0.1484 - rmse: 0.3812 -
mean_absolute_percentage_error: 150.2154
```

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Epoch 68/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1610 -
mean_absolute_error: 0.2634 - mean_squared_error: 0.1489 - rmse: 0.3820 -
mean_absolute_percentage_error: 153.4140
Epoch 69/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1613 -
mean_absolute_error: 0.2642 - mean_squared_error: 0.1491 - rmse: 0.3820 -
mean_absolute_percentage_error: 156.1462
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1627 -
mean_absolute_error: 0.2660 - mean_squared_error: 0.1505 - rmse: 0.3830 -
mean_absolute_percentage_error: 151.6852
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1624 -
mean_absolute_error: 0.2652 - mean_squared_error: 0.1502 - rmse: 0.3835 -
mean_absolute_percentage_error: 154.8078
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1609 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1487 - rmse: 0.3822 -
mean_absolute_percentage_error: 151.7237
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1587 -
mean_absolute_error: 0.2617 - mean_squared_error: 0.1465 - rmse: 0.3787 -
mean_absolute_percentage_error: 151.2000
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1616 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1494 - rmse: 0.3822 -
mean_absolute_percentage_error: 148.4892
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1613 -
mean_absolute_error: 0.2645 - mean_squared_error: 0.1491 - rmse: 0.3820 -
mean_absolute_percentage_error: 149.3538
Epoch 76/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1591 -
mean_absolute_error: 0.2612 - mean_squared_error: 0.1469 - rmse: 0.3793 -
mean_absolute_percentage_error: 150.9126
Epoch 77/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1588 -
mean_absolute_error: 0.2618 - mean_squared_error: 0.1466 - rmse: 0.3786 -
mean_absolute_percentage_error: 147.6637
Epoch 78/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1625 -
mean_absolute_error: 0.2665 - mean_squared_error: 0.1503 - rmse: 0.3839 -
mean_absolute_percentage_error: 148.9155
Epoch 79/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1593 -
mean_absolute_error: 0.2632 - mean_squared_error: 0.1471 - rmse: 0.3797 -
mean_absolute_percentage_error: 148.0948
```

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Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1596 -
mean_absolute_error: 0.2627 - mean_squared_error: 0.1474 - rmse: 0.3792 -
mean_absolute_percentage_error: 153.3344
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1602 -
mean_absolute_error: 0.2635 - mean_squared_error: 0.1479 - rmse: 0.3802 -
mean_absolute_percentage_error: 146.4305
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1585 -
mean_absolute_error: 0.2610 - mean_squared_error: 0.1462 - rmse: 0.3785 -
mean_absolute_percentage_error: 148.5525
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1599 -
mean_absolute_error: 0.2623 - mean_squared_error: 0.1476 - rmse: 0.3811 -
mean_absolute_percentage_error: 154.0479
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1574 -
mean_absolute_error: 0.2597 - mean_squared_error: 0.1452 - rmse: 0.3768 -
mean_absolute_percentage_error: 151.4242
Epoch 85/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1582 -
mean_absolute_error: 0.2629 - mean_squared_error: 0.1459 - rmse: 0.3777 -
mean_absolute_percentage_error: 144.5085
Epoch 86/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1608 -
mean_absolute_error: 0.2636 - mean_squared_error: 0.1486 - rmse: 0.3816 -
mean_absolute_percentage_error: 148.4347
Epoch 87/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1563 -
mean_absolute_error: 0.2594 - mean_squared_error: 0.1440 - rmse: 0.3755 -
mean_absolute_percentage_error: 145.5551
Epoch 88/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1583 -
mean_absolute_error: 0.2609 - mean_squared_error: 0.1460 - rmse: 0.3780 -
mean_absolute_percentage_error: 141.3421
Epoch 89/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1594 -
mean_absolute_error: 0.2619 - mean_squared_error: 0.1471 - rmse: 0.3784 -
mean_absolute_percentage_error: 150.2043
Epoch 90/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1591 -
mean_absolute_error: 0.2636 - mean_squared_error: 0.1468 - rmse: 0.3791 -
mean_absolute_percentage_error: 139.5670
Epoch 91/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1574 -
mean_absolute_error: 0.2610 - mean_squared_error: 0.1451 - rmse: 0.3773 -
mean_absolute_percentage_error: 143.2913
```

```
Epoch 92/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1569 -
mean_absolute_error: 0.2599 - mean_squared_error: 0.1446 - rmse: 0.3758 -
mean_absolute_percentage_error: 146.4231
Epoch 93/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1569 -
mean_absolute_error: 0.2586 - mean_squared_error: 0.1446 - rmse: 0.3771 -
mean_absolute_percentage_error: 154.9025
Epoch 94/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1575 -
mean_absolute_error: 0.2613 - mean_squared_error: 0.1452 - rmse: 0.3770 -
mean_absolute_percentage_error: 148.5910
Epoch 95/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1580 -
mean_absolute_error: 0.2617 - mean_squared_error: 0.1457 - rmse: 0.3776 -
mean_absolute_percentage_error: 147.7884
Epoch 96/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1548 -
mean_absolute_error: 0.2575 - mean_squared_error: 0.1426 - rmse: 0.3743 -
mean_absolute_percentage_error: 147.7446
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1606 -
mean_absolute_error: 0.2637 - mean_squared_error: 0.1483 - rmse: 0.3813 -
mean_absolute_percentage_error: 146.0295
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1574 -
mean_absolute_error: 0.2601 - mean_squared_error: 0.1452 - rmse: 0.3771 -
mean_absolute_percentage_error: 146.6837
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1569 -
mean_absolute_error: 0.2599 - mean_squared_error: 0.1446 - rmse: 0.3756 -
mean_absolute_percentage_error: 143.7871
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1556 -
mean_absolute_error: 0.2585 - mean_squared_error: 0.1433 - rmse: 0.3738 -
mean_absolute_percentage_error: 145.6373
100/100 [==============================] - 1s 1ms/step - loss: 0.1628 -
mean_absolute_error: 0.2654 - mean_squared_error: 0.1505 - rmse: 0.3831 -
mean_absolute_percentage_error: 159.7085
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L2
------------------------------------------------------------------------------
Training for fold 3 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.3516 -
mean_absolute_error: 0.4396 - mean_squared_error: 0.3415 - rmse: 0.5744 -
mean_absolute_percentage_error: 194.1671
Epoch 2/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.2467 -
mean_absolute_error: 0.3464 - mean_squared_error: 0.2359 - rmse: 0.4812 -
mean_absolute_percentage_error: 196.1681
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2289 -
mean_absolute_error: 0.3290 - mean_squared_error: 0.2181 - rmse: 0.4632 -
mean_absolute_percentage_error: 196.0991
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2195 -
mean_absolute_error: 0.3201 - mean_squared_error: 0.2087 - rmse: 0.4529 -
mean_absolute_percentage_error: 187.3137
Epoch 5/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2132 -
mean_absolute_error: 0.3140 - mean_squared_error: 0.2024 - rmse: 0.4462 -
mean_absolute_percentage_error: 186.1426
Epoch 6/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2085 -
mean_absolute_error: 0.3100 - mean_squared_error: 0.1977 - rmse: 0.4412 -
mean_absolute_percentage_error: 183.3772
Epoch 7/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2036 -
mean_absolute_error: 0.3049 - mean_squared_error: 0.1927 - rmse: 0.4351 -
mean_absolute_percentage_error: 177.6353
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2017 -
mean_absolute_error: 0.3034 - mean_squared_error: 0.1907 - rmse: 0.4323 -
mean_absolute_percentage_error: 182.3102
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1978 -
mean_absolute_error: 0.2991 - mean_squared_error: 0.1866 - rmse: 0.4285 -
mean_absolute_percentage_error: 178.1244
Epoch 10/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1941 -
mean_absolute_error: 0.2954 - mean_squared_error: 0.1828 - rmse: 0.4241 -
mean_absolute_percentage_error: 173.5168
Epoch 11/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1923 -
mean_absolute_error: 0.2936 - mean_squared_error: 0.1809 - rmse: 0.4212 -
mean_absolute_percentage_error: 168.6054
Epoch 12/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1902 -
mean_absolute_error: 0.2913 - mean_squared_error: 0.1788 - rmse: 0.4186 -
mean_absolute_percentage_error: 166.5364
Epoch 13/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1879 -
mean_absolute_error: 0.2905 - mean_squared_error: 0.1764 - rmse: 0.4161 -
mean_absolute_percentage_error: 165.4414
Epoch 14/100
```

```
210/210 [==============================] - 0s 1ms/step - loss: 0.1889 -
mean_absolute_error: 0.2906 - mean_squared_error: 0.1773 - rmse: 0.4176 -
mean_absolute_percentage_error: 167.0572
Epoch 15/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1847 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1731 - rmse: 0.4118 -
mean_absolute_percentage_error: 163.6790
Epoch 16/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1834 -
mean_absolute_error: 0.2857 - mean_squared_error: 0.1718 - rmse: 0.4107 -
mean_absolute_percentage_error: 167.5192
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1826 -
mean_absolute_error: 0.2841 - mean_squared_error: 0.1710 - rmse: 0.4091 -
mean_absolute_percentage_error: 163.4988
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1844 -
mean_absolute_error: 0.2872 - mean_squared_error: 0.1727 - rmse: 0.4116 -
mean_absolute_percentage_error: 168.5280
Epoch 19/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1829 -
mean_absolute_error: 0.2851 - mean_squared_error: 0.1711 - rmse: 0.4094 -
mean_absolute_percentage_error: 165.9678
Epoch 20/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1797 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1679 - rmse: 0.4059 -
mean_absolute_percentage_error: 162.7870
Epoch 21/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1774 -
mean_absolute_error: 0.2793 - mean_squared_error: 0.1656 - rmse: 0.4017 -
mean_absolute_percentage_error: 160.3462
Epoch 22/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1791 -
mean_absolute_error: 0.2816 - mean_squared_error: 0.1673 - rmse: 0.4050 -
mean_absolute_percentage_error: 159.7445
Epoch 23/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1785 -
mean_absolute_error: 0.2812 - mean_squared_error: 0.1667 - rmse: 0.4030 -
mean_absolute_percentage_error: 164.5114
Epoch 24/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1769 -
mean_absolute_error: 0.2786 - mean_squared_error: 0.1651 - rmse: 0.4020 -
mean_absolute_percentage_error: 164.8577
Epoch 25/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1762 -
mean_absolute_error: 0.2773 - mean_squared_error: 0.1644 - rmse: 0.4006 -
mean_absolute_percentage_error: 164.6816
Epoch 26/100
```

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210/210 [==============================] - 0s 1ms/step - loss: 0.1772 -
mean_absolute_error: 0.2787 - mean_squared_error: 0.1653 - rmse: 0.4021 -
mean_absolute_percentage_error: 157.9896
Epoch 27/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1742 -
mean_absolute_error: 0.2764 - mean_squared_error: 0.1624 - rmse: 0.3974 -
mean_absolute_percentage_error: 163.7145
Epoch 28/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1739 -
mean_absolute_error: 0.2755 - mean_squared_error: 0.1621 - rmse: 0.3976 -
mean_absolute_percentage_error: 156.5221
Epoch 29/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1742 -
mean_absolute_error: 0.2749 - mean_squared_error: 0.1624 - rmse: 0.3987 -
mean_absolute_percentage_error: 158.2647
Epoch 30/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1735 -
mean_absolute_error: 0.2749 - mean_squared_error: 0.1616 - rmse: 0.3982 -
mean_absolute_percentage_error: 152.0323
Epoch 31/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1724 -
mean_absolute_error: 0.2734 - mean_squared_error: 0.1606 - rmse: 0.3965 -
mean_absolute_percentage_error: 158.8052
Epoch 32/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1731 -
mean_absolute_error: 0.2749 - mean_squared_error: 0.1613 - rmse: 0.3966 -
mean_absolute_percentage_error: 162.1123
Epoch 33/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1726 -
mean_absolute_error: 0.2750 - mean_squared_error: 0.1608 - rmse: 0.3959 -
mean_absolute_percentage_error: 162.8391
Epoch 34/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1734 -
mean_absolute_error: 0.2744 - mean_squared_error: 0.1616 - rmse: 0.3973 -
mean_absolute_percentage_error: 160.6048
Epoch 35/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1707 -
mean_absolute_error: 0.2723 - mean_squared_error: 0.1589 - rmse: 0.3932 -
mean_absolute_percentage_error: 159.0081
Epoch 36/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1737 -
mean_absolute_error: 0.2745 - mean_squared_error: 0.1619 - rmse: 0.3980 -
mean_absolute_percentage_error: 156.5560
Epoch 37/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1704 -
mean_absolute_error: 0.2728 - mean_squared_error: 0.1586 - rmse: 0.3943 -
mean_absolute_percentage_error: 156.4188
Epoch 38/100
```

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210/210 [==============================] - 0s 1ms/step - loss: 0.1690 -
mean_absolute_error: 0.2711 - mean_squared_error: 0.1572 - rmse: 0.3919 -
mean_absolute_percentage_error: 161.0757
Epoch 39/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1688 -
mean_absolute_error: 0.2697 - mean_squared_error: 0.1570 - rmse: 0.3921 -
mean_absolute_percentage_error: 159.7150
Epoch 40/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1717 -
mean_absolute_error: 0.2733 - mean_squared_error: 0.1600 - rmse: 0.3959 -
mean_absolute_percentage_error: 158.8820
Epoch 41/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1696 -
mean_absolute_error: 0.2710 - mean_squared_error: 0.1579 - rmse: 0.3932 -
mean_absolute_percentage_error: 156.4854
Epoch 42/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1686 -
mean_absolute_error: 0.2701 - mean_squared_error: 0.1568 - rmse: 0.3911 -
mean_absolute_percentage_error: 155.9705
Epoch 43/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1694 -
mean_absolute_error: 0.2704 - mean_squared_error: 0.1577 - rmse: 0.3924 -
mean_absolute_percentage_error: 156.0910
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1690 -
mean_absolute_error: 0.2716 - mean_squared_error: 0.1572 - rmse: 0.3909 -
mean_absolute_percentage_error: 155.4293
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1670 -
mean_absolute_error: 0.2688 - mean_squared_error: 0.1553 - rmse: 0.3896 -
mean_absolute_percentage_error: 153.3473
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1679 -
mean_absolute_error: 0.2691 - mean_squared_error: 0.1562 - rmse: 0.3901 -
mean_absolute_percentage_error: 154.4239
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1664 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1547 - rmse: 0.3900 -
mean_absolute_percentage_error: 156.5551
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1661 -
mean_absolute_error: 0.2679 - mean_squared_error: 0.1544 - rmse: 0.3880 -
mean_absolute_percentage_error: 152.7098
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1679 -
mean_absolute_error: 0.2699 - mean_squared_error: 0.1563 - rmse: 0.3912 -
mean_absolute_percentage_error: 151.3709
Epoch 50/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1669 -
mean_absolute_error: 0.2683 - mean_squared_error: 0.1552 - rmse: 0.3891 -
mean_absolute_percentage_error: 154.3102
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1651 -
mean_absolute_error: 0.2673 - mean_squared_error: 0.1534 - rmse: 0.3873 -
mean_absolute_percentage_error: 157.9222
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1655 -
mean_absolute_error: 0.2670 - mean_squared_error: 0.1539 - rmse: 0.3884 -
mean_absolute_percentage_error: 152.7993
Epoch 53/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1637 -
mean_absolute_error: 0.2660 - mean_squared_error: 0.1521 - rmse: 0.3856 -
mean_absolute_percentage_error: 154.6054
Epoch 54/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1687 -
mean_absolute_error: 0.2708 - mean_squared_error: 0.1571 - rmse: 0.3917 -
mean_absolute_percentage_error: 153.9883
Epoch 55/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1627 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1511 - rmse: 0.3848 -
mean_absolute_percentage_error: 152.2192
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1639 -
mean_absolute_error: 0.2653 - mean_squared_error: 0.1523 - rmse: 0.3855 -
mean_absolute_percentage_error: 152.9158
Epoch 57/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1650 -
mean_absolute_error: 0.2666 - mean_squared_error: 0.1534 - rmse: 0.3882 -
mean_absolute_percentage_error: 155.0459
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1627 -
mean_absolute_error: 0.2646 - mean_squared_error: 0.1511 - rmse: 0.3841 -
mean_absolute_percentage_error: 152.8740
Epoch 59/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1656 -
mean_absolute_error: 0.2681 - mean_squared_error: 0.1540 - rmse: 0.3875 -
mean_absolute_percentage_error: 152.6749
Epoch 60/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1632 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1516 - rmse: 0.3854 -
mean_absolute_percentage_error: 155.4170
Epoch 61/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1667 -
mean_absolute_error: 0.2689 - mean_squared_error: 0.1552 - rmse: 0.3897 -
mean_absolute_percentage_error: 159.3306
Epoch 62/100
```

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210/210 [==============================] - 0s 1ms/step - loss: 0.1616 -
mean_absolute_error: 0.2637 - mean_squared_error: 0.1500 - rmse: 0.3819 -
mean_absolute_percentage_error: 154.8129
Epoch 63/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1610 -
mean_absolute_error: 0.2626 - mean_squared_error: 0.1495 - rmse: 0.3816 -
mean_absolute_percentage_error: 152.4600
Epoch 64/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1633 -
mean_absolute_error: 0.2666 - mean_squared_error: 0.1518 - rmse: 0.3854 -
mean_absolute_percentage_error: 154.9605
Epoch 65/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1637 -
mean_absolute_error: 0.2652 - mean_squared_error: 0.1522 - rmse: 0.3856 -
mean_absolute_percentage_error: 155.2221
Epoch 66/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1615 -
mean_absolute_error: 0.2634 - mean_squared_error: 0.1499 - rmse: 0.3829 -
mean_absolute_percentage_error: 153.2788
Epoch 67/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1606 -
mean_absolute_error: 0.2619 - mean_squared_error: 0.1490 - rmse: 0.3806 -
mean_absolute_percentage_error: 151.5835
Epoch 68/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1605 -
mean_absolute_error: 0.2614 - mean_squared_error: 0.1489 - rmse: 0.3808 -
mean_absolute_percentage_error: 149.3115
Epoch 69/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1616 -
mean_absolute_error: 0.2632 - mean_squared_error: 0.1500 - rmse: 0.3829 -
mean_absolute_percentage_error: 157.5667
Epoch 70/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1627 -
mean_absolute_error: 0.2651 - mean_squared_error: 0.1512 - rmse: 0.3854 -
mean_absolute_percentage_error: 152.9374
Epoch 71/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1625 -
mean_absolute_error: 0.2642 - mean_squared_error: 0.1510 - rmse: 0.3846 -
mean_absolute_percentage_error: 151.2923
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1618 -
mean_absolute_error: 0.2643 - mean_squared_error: 0.1502 - rmse: 0.3830 -
mean_absolute_percentage_error: 152.7190
Epoch 73/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1621 -
mean_absolute_error: 0.2640 - mean_squared_error: 0.1505 - rmse: 0.3834 -
mean_absolute_percentage_error: 148.5254
Epoch 74/100
```

210/210 [==============================] - 1s 3ms/step - loss: 0.1620 -
mean_absolute_error: 0.2646 - mean_squared_error: 0.1504 - rmse: 0.3834 -
mean_absolute_percentage_error: 158.2063
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1607 -
mean_absolute_error: 0.2622 - mean_squared_error: 0.1491 - rmse: 0.3817 -
mean_absolute_percentage_error: 147.1583
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1598 -
mean_absolute_error: 0.2620 - mean_squared_error: 0.1482 - rmse: 0.3803 -
mean_absolute_percentage_error: 149.4878
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1614 -
mean_absolute_error: 0.2627 - mean_squared_error: 0.1498 - rmse: 0.3835 -
mean_absolute_percentage_error: 154.1732
Epoch 78/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1632 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1516 - rmse: 0.3851 -
mean_absolute_percentage_error: 152.1352
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1593 -
mean_absolute_error: 0.2616 - mean_squared_error: 0.1477 - rmse: 0.3805 -
mean_absolute_percentage_error: 154.6349
Epoch 80/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1588 -
mean_absolute_error: 0.2602 - mean_squared_error: 0.1472 - rmse: 0.3788 -
mean_absolute_percentage_error: 154.6472
Epoch 81/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1579 -
mean_absolute_error: 0.2606 - mean_squared_error: 0.1462 - rmse: 0.3778 -
mean_absolute_percentage_error: 154.6552
Epoch 82/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1629 -
mean_absolute_error: 0.2639 - mean_squared_error: 0.1512 - rmse: 0.3837 -
mean_absolute_percentage_error: 150.8013
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1578 -
mean_absolute_error: 0.2583 - mean_squared_error: 0.1462 - rmse: 0.3787 -
mean_absolute_percentage_error: 145.9905
Epoch 84/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1599 -
mean_absolute_error: 0.2611 - mean_squared_error: 0.1483 - rmse: 0.3799 -
mean_absolute_percentage_error: 155.6868
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1578 -
mean_absolute_error: 0.2599 - mean_squared_error: 0.1462 - rmse: 0.3782 -
mean_absolute_percentage_error: 149.9607
Epoch 86/100

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210/210 [==============================] - 0s 2ms/step - loss: 0.1575 -
mean_absolute_error: 0.2582 - mean_squared_error: 0.1459 - rmse: 0.3774 -
mean_absolute_percentage_error: 147.7747
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1579 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1463 - rmse: 0.3777 -
mean_absolute_percentage_error: 147.5774
Epoch 88/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1607 -
mean_absolute_error: 0.2634 - mean_squared_error: 0.1491 - rmse: 0.3818 -
mean_absolute_percentage_error: 151.5878
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1591 -
mean_absolute_error: 0.2614 - mean_squared_error: 0.1475 - rmse: 0.3805 -
mean_absolute_percentage_error: 144.2991
Epoch 90/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1589 -
mean_absolute_error: 0.2614 - mean_squared_error: 0.1474 - rmse: 0.3803 -
mean_absolute_percentage_error: 154.6581
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1577 -
mean_absolute_error: 0.2602 - mean_squared_error: 0.1461 - rmse: 0.3777 -
mean_absolute_percentage_error: 144.1368
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1578 -
mean_absolute_error: 0.2600 - mean_squared_error: 0.1462 - rmse: 0.3786 -
mean_absolute_percentage_error: 151.4681
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1581 -
mean_absolute_error: 0.2602 - mean_squared_error: 0.1465 - rmse: 0.3795 -
mean_absolute_percentage_error: 148.4191
Epoch 94/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1565 -
mean_absolute_error: 0.2587 - mean_squared_error: 0.1449 - rmse: 0.3765 -
mean_absolute_percentage_error: 146.4146
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1591 -
mean_absolute_error: 0.2601 - mean_squared_error: 0.1475 - rmse: 0.3793 -
mean_absolute_percentage_error: 149.4790
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1564 -
mean_absolute_error: 0.2583 - mean_squared_error: 0.1448 - rmse: 0.3763 -
mean_absolute_percentage_error: 152.2250
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1555 -
mean_absolute_error: 0.2579 - mean_squared_error: 0.1439 - rmse: 0.3753 -
mean_absolute_percentage_error: 152.2240
Epoch 98/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1602 -
mean_absolute_error: 0.2612 - mean_squared_error: 0.1486 - rmse: 0.3808 -
mean_absolute_percentage_error: 151.3781
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1574 -
mean_absolute_error: 0.2595 - mean_squared_error: 0.1458 - rmse: 0.3773 -
mean_absolute_percentage_error: 149.6351
Epoch 100/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1553 -
mean_absolute_error: 0.2578 - mean_squared_error: 0.1437 - rmse: 0.3753 -
mean_absolute_percentage_error: 147.8559
100/100 [==============================] - 1s 2ms/step - loss: 0.1624 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1508 - rmse: 0.3830 -
mean_absolute_percentage_error: 154.9717
200/200 [==============================] - 1s 2ms/step
Regularizer chosen is L2
------------------------------------------------------------------------
Training for fold 4 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.3613 -
mean_absolute_error: 0.4470 - mean_squared_error: 0.3520 - rmse: 0.5820 -
mean_absolute_percentage_error: 201.2759
Epoch 2/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2465 -
mean_absolute_error: 0.3454 - mean_squared_error: 0.2363 - rmse: 0.4823 -
mean_absolute_percentage_error: 197.6923
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2297 -
mean_absolute_error: 0.3292 - mean_squared_error: 0.2194 - rmse: 0.4647 -
mean_absolute_percentage_error: 192.2595
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2190 -
mean_absolute_error: 0.3202 - mean_squared_error: 0.2086 - rmse: 0.4533 -
mean_absolute_percentage_error: 188.1579
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2125 -
mean_absolute_error: 0.3130 - mean_squared_error: 0.2021 - rmse: 0.4452 -
mean_absolute_percentage_error: 186.1854
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2075 -
mean_absolute_error: 0.3096 - mean_squared_error: 0.1969 - rmse: 0.4395 -
mean_absolute_percentage_error: 183.9113
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2025 -
mean_absolute_error: 0.3034 - mean_squared_error: 0.1918 - rmse: 0.4340 -
mean_absolute_percentage_error: 186.5617
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2004 -
```

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mean_absolute_error: 0.3021 - mean_squared_error: 0.1896 - rmse: 0.4322 -
mean_absolute_percentage_error: 178.1493
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1986 -
mean_absolute_error: 0.2990 - mean_squared_error: 0.1876 - rmse: 0.4292 -
mean_absolute_percentage_error: 174.4438
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1928 -
mean_absolute_error: 0.2938 - mean_squared_error: 0.1817 - rmse: 0.4229 -
mean_absolute_percentage_error: 171.7104
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1928 -
mean_absolute_error: 0.2926 - mean_squared_error: 0.1816 - rmse: 0.4212 -
mean_absolute_percentage_error: 171.4408
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1902 -
mean_absolute_error: 0.2907 - mean_squared_error: 0.1790 - rmse: 0.4186 -
mean_absolute_percentage_error: 174.0527
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1875 -
mean_absolute_error: 0.2869 - mean_squared_error: 0.1762 - rmse: 0.4151 -
mean_absolute_percentage_error: 172.4672
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1857 -
mean_absolute_error: 0.2871 - mean_squared_error: 0.1743 - rmse: 0.4127 -
mean_absolute_percentage_error: 176.4305
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1875 -
mean_absolute_error: 0.2878 - mean_squared_error: 0.1761 - rmse: 0.4153 -
mean_absolute_percentage_error: 169.5246
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1845 -
mean_absolute_error: 0.2851 - mean_squared_error: 0.1730 - rmse: 0.4113 -
mean_absolute_percentage_error: 166.0770
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1863 -
mean_absolute_error: 0.2867 - mean_squared_error: 0.1748 - rmse: 0.4133 -
mean_absolute_percentage_error: 167.1024
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1803 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1688 - rmse: 0.4064 -
mean_absolute_percentage_error: 167.7824
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1798 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1682 - rmse: 0.4054 -
mean_absolute_percentage_error: 165.8003
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1805 -
```

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mean_absolute_error: 0.2821 - mean_squared_error: 0.1689 - rmse: 0.4064 -
mean_absolute_percentage_error: 165.2778
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1796 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1680 - rmse: 0.4056 -
mean_absolute_percentage_error: 164.3808
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1790 -
mean_absolute_error: 0.2798 - mean_squared_error: 0.1674 - rmse: 0.4045 -
mean_absolute_percentage_error: 164.3811
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1772 -
mean_absolute_error: 0.2790 - mean_squared_error: 0.1655 - rmse: 0.4026 -
mean_absolute_percentage_error: 162.9726
Epoch 24/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1776 -
mean_absolute_error: 0.2780 - mean_squared_error: 0.1659 - rmse: 0.4028 -
mean_absolute_percentage_error: 158.3198
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1773 -
mean_absolute_error: 0.2790 - mean_squared_error: 0.1656 - rmse: 0.4025 -
mean_absolute_percentage_error: 165.4589
Epoch 26/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1746 -
mean_absolute_error: 0.2761 - mean_squared_error: 0.1629 - rmse: 0.3988 -
mean_absolute_percentage_error: 156.3724
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1745 -
mean_absolute_error: 0.2755 - mean_squared_error: 0.1628 - rmse: 0.3991 -
mean_absolute_percentage_error: 161.1204
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1722 -
mean_absolute_error: 0.2733 - mean_squared_error: 0.1605 - rmse: 0.3970 -
mean_absolute_percentage_error: 161.1284
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1723 -
mean_absolute_error: 0.2732 - mean_squared_error: 0.1606 - rmse: 0.3964 -
mean_absolute_percentage_error: 159.0822
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1733 -
mean_absolute_error: 0.2748 - mean_squared_error: 0.1616 - rmse: 0.3977 -
mean_absolute_percentage_error: 161.3467
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1741 -
mean_absolute_error: 0.2752 - mean_squared_error: 0.1623 - rmse: 0.3990 -
mean_absolute_percentage_error: 154.6608
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1763 -
```

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mean_absolute_error: 0.2772 - mean_squared_error: 0.1645 - rmse: 0.4015 -
mean_absolute_percentage_error: 159.5468
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1707 -
mean_absolute_error: 0.2710 - mean_squared_error: 0.1589 - rmse: 0.3939 -
mean_absolute_percentage_error: 162.1963
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1697 -
mean_absolute_error: 0.2712 - mean_squared_error: 0.1579 - rmse: 0.3937 -
mean_absolute_percentage_error: 159.3594
Epoch 35/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1711 -
mean_absolute_error: 0.2724 - mean_squared_error: 0.1594 - rmse: 0.3966 -
mean_absolute_percentage_error: 159.3182
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1712 -
mean_absolute_error: 0.2727 - mean_squared_error: 0.1594 - rmse: 0.3950 -
mean_absolute_percentage_error: 159.4922
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1701 -
mean_absolute_error: 0.2710 - mean_squared_error: 0.1584 - rmse: 0.3935 -
mean_absolute_percentage_error: 155.9153
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1720 -
mean_absolute_error: 0.2731 - mean_squared_error: 0.1602 - rmse: 0.3963 -
mean_absolute_percentage_error: 160.7605
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1674 -
mean_absolute_error: 0.2693 - mean_squared_error: 0.1555 - rmse: 0.3904 -
mean_absolute_percentage_error: 154.1789
Epoch 40/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1697 -
mean_absolute_error: 0.2699 - mean_squared_error: 0.1579 - rmse: 0.3923 -
mean_absolute_percentage_error: 155.0246
Epoch 41/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1714 -
mean_absolute_error: 0.2724 - mean_squared_error: 0.1595 - rmse: 0.3945 -
mean_absolute_percentage_error: 158.5635
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1680 -
mean_absolute_error: 0.2709 - mean_squared_error: 0.1561 - rmse: 0.3911 -
mean_absolute_percentage_error: 153.7102
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1690 -
mean_absolute_error: 0.2702 - mean_squared_error: 0.1571 - rmse: 0.3919 -
mean_absolute_percentage_error: 155.8420
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1691 -
```

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mean_absolute_error: 0.2687 - mean_squared_error: 0.1572 - rmse: 0.3914 -
mean_absolute_percentage_error: 154.3539
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1654 -
mean_absolute_error: 0.2660 - mean_squared_error: 0.1535 - rmse: 0.3875 -
mean_absolute_percentage_error: 152.4140
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1660 -
mean_absolute_error: 0.2668 - mean_squared_error: 0.1541 - rmse: 0.3881 -
mean_absolute_percentage_error: 154.9284
Epoch 47/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1654 -
mean_absolute_error: 0.2670 - mean_squared_error: 0.1535 - rmse: 0.3876 -
mean_absolute_percentage_error: 154.7078
Epoch 48/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1652 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1533 - rmse: 0.3876 -
mean_absolute_percentage_error: 159.7392
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1645 -
mean_absolute_error: 0.2658 - mean_squared_error: 0.1526 - rmse: 0.3859 -
mean_absolute_percentage_error: 153.0260
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1658 -
mean_absolute_error: 0.2666 - mean_squared_error: 0.1539 - rmse: 0.3883 -
mean_absolute_percentage_error: 152.0934
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1654 -
mean_absolute_error: 0.2655 - mean_squared_error: 0.1536 - rmse: 0.3877 -
mean_absolute_percentage_error: 156.7924
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1628 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1510 - rmse: 0.3843 -
mean_absolute_percentage_error: 155.4404
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1667 -
mean_absolute_error: 0.2678 - mean_squared_error: 0.1548 - rmse: 0.3881 -
mean_absolute_percentage_error: 147.5062
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1630 -
mean_absolute_error: 0.2643 - mean_squared_error: 0.1511 - rmse: 0.3855 -
mean_absolute_percentage_error: 151.8776
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1622 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1503 - rmse: 0.3829 -
mean_absolute_percentage_error: 150.5423
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1645 -
```

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mean_absolute_error: 0.2657 - mean_squared_error: 0.1526 - rmse: 0.3868 -
mean_absolute_percentage_error: 149.6853
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1644 -
mean_absolute_error: 0.2659 - mean_squared_error: 0.1525 - rmse: 0.3865 -
mean_absolute_percentage_error: 147.0936
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1625 -
mean_absolute_error: 0.2628 - mean_squared_error: 0.1506 - rmse: 0.3841 -
mean_absolute_percentage_error: 143.2385
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1613 -
mean_absolute_error: 0.2625 - mean_squared_error: 0.1494 - rmse: 0.3831 -
mean_absolute_percentage_error: 154.3965
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1613 -
mean_absolute_error: 0.2631 - mean_squared_error: 0.1494 - rmse: 0.3821 -
mean_absolute_percentage_error: 156.3705
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1624 -
mean_absolute_error: 0.2636 - mean_squared_error: 0.1505 - rmse: 0.3837 -
mean_absolute_percentage_error: 149.1920
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1606 -
mean_absolute_error: 0.2616 - mean_squared_error: 0.1487 - rmse: 0.3817 -
mean_absolute_percentage_error: 153.5971
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1603 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1484 - rmse: 0.3811 -
mean_absolute_percentage_error: 146.3338
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1619 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1500 - rmse: 0.3831 -
mean_absolute_percentage_error: 150.0024
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1618 -
mean_absolute_error: 0.2619 - mean_squared_error: 0.1499 - rmse: 0.3823 -
mean_absolute_percentage_error: 148.0348
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1635 -
mean_absolute_error: 0.2640 - mean_squared_error: 0.1516 - rmse: 0.3843 -
mean_absolute_percentage_error: 155.4217
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1605 -
mean_absolute_error: 0.2612 - mean_squared_error: 0.1485 - rmse: 0.3811 -
mean_absolute_percentage_error: 146.0163
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1597 -
```

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mean_absolute_error: 0.2601 - mean_squared_error: 0.1478 - rmse: 0.3791 -
mean_absolute_percentage_error: 150.4116
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1583 -
mean_absolute_error: 0.2584 - mean_squared_error: 0.1463 - rmse: 0.3781 -
mean_absolute_percentage_error: 152.0931
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1613 -
mean_absolute_error: 0.2614 - mean_squared_error: 0.1493 - rmse: 0.3820 -
mean_absolute_percentage_error: 150.0868
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1580 -
mean_absolute_error: 0.2588 - mean_squared_error: 0.1460 - rmse: 0.3781 -
mean_absolute_percentage_error: 148.4146
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1593 -
mean_absolute_error: 0.2597 - mean_squared_error: 0.1473 - rmse: 0.3794 -
mean_absolute_percentage_error: 154.5098
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1590 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1471 - rmse: 0.3790 -
mean_absolute_percentage_error: 151.7320
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1626 -
mean_absolute_error: 0.2639 - mean_squared_error: 0.1506 - rmse: 0.3835 -
mean_absolute_percentage_error: 148.2139
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1586 -
mean_absolute_error: 0.2600 - mean_squared_error: 0.1467 - rmse: 0.3785 -
mean_absolute_percentage_error: 140.9843
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1618 -
mean_absolute_error: 0.2616 - mean_squared_error: 0.1498 - rmse: 0.3838 -
mean_absolute_percentage_error: 149.9347
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1585 -
mean_absolute_error: 0.2593 - mean_squared_error: 0.1465 - rmse: 0.3780 -
mean_absolute_percentage_error: 148.4090
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1593 -
mean_absolute_error: 0.2594 - mean_squared_error: 0.1473 - rmse: 0.3798 -
mean_absolute_percentage_error: 151.1753
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1606 -
mean_absolute_error: 0.2604 - mean_squared_error: 0.1486 - rmse: 0.3806 -
mean_absolute_percentage_error: 147.5430
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1608 -
```

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mean_absolute_error: 0.2616 - mean_squared_error: 0.1488 - rmse: 0.3817 -
mean_absolute_percentage_error: 154.3360
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1560 -
mean_absolute_error: 0.2559 - mean_squared_error: 0.1440 - rmse: 0.3747 -
mean_absolute_percentage_error: 149.8008
Epoch 82/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1612 -
mean_absolute_error: 0.2620 - mean_squared_error: 0.1492 - rmse: 0.3806 -
mean_absolute_percentage_error: 153.0670
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1564 -
mean_absolute_error: 0.2566 - mean_squared_error: 0.1444 - rmse: 0.3754 -
mean_absolute_percentage_error: 146.1935
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1587 -
mean_absolute_error: 0.2595 - mean_squared_error: 0.1466 - rmse: 0.3784 -
mean_absolute_percentage_error: 145.6341
Epoch 85/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1617 -
mean_absolute_error: 0.2613 - mean_squared_error: 0.1497 - rmse: 0.3816 -
mean_absolute_percentage_error: 146.1037
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1573 -
mean_absolute_error: 0.2572 - mean_squared_error: 0.1452 - rmse: 0.3781 -
mean_absolute_percentage_error: 147.0181
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1577 -
mean_absolute_error: 0.2589 - mean_squared_error: 0.1456 - rmse: 0.3784 -
mean_absolute_percentage_error: 153.1681
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1569 -
mean_absolute_error: 0.2575 - mean_squared_error: 0.1448 - rmse: 0.3759 -
mean_absolute_percentage_error: 143.4733
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1559 -
mean_absolute_error: 0.2563 - mean_squared_error: 0.1438 - rmse: 0.3746 -
mean_absolute_percentage_error: 142.8835
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1546 -
mean_absolute_error: 0.2551 - mean_squared_error: 0.1425 - rmse: 0.3729 -
mean_absolute_percentage_error: 146.2027
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1560 -
mean_absolute_error: 0.2568 - mean_squared_error: 0.1439 - rmse: 0.3753 -
mean_absolute_percentage_error: 151.7811
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1563 -
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mean_absolute_error: 0.2558 - mean_squared_error: 0.1441 - rmse: 0.3752 -
mean_absolute_percentage_error: 151.6940
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1571 -
mean_absolute_error: 0.2572 - mean_squared_error: 0.1450 - rmse: 0.3758 -
mean_absolute_percentage_error: 139.4034
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1559 -
mean_absolute_error: 0.2557 - mean_squared_error: 0.1438 - rmse: 0.3749 -
mean_absolute_percentage_error: 149.7224
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1593 -
mean_absolute_error: 0.2591 - mean_squared_error: 0.1472 - rmse: 0.3795 -
mean_absolute_percentage_error: 146.7847
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1609 -
mean_absolute_error: 0.2606 - mean_squared_error: 0.1488 - rmse: 0.3813 -
mean_absolute_percentage_error: 149.4087
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1553 -
mean_absolute_error: 0.2555 - mean_squared_error: 0.1431 - rmse: 0.3751 -
mean_absolute_percentage_error: 148.7244
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1551 -
mean_absolute_error: 0.2560 - mean_squared_error: 0.1429 - rmse: 0.3749 -
mean_absolute_percentage_error: 142.9893
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1541 -
mean_absolute_error: 0.2551 - mean_squared_error: 0.1419 - rmse: 0.3717 -
mean_absolute_percentage_error: 141.5210
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1567 -
mean_absolute_error: 0.2571 - mean_squared_error: 0.1445 - rmse: 0.3760 -
mean_absolute_percentage_error: 154.2384
100/100 [==============================] - 0s 1ms/step - loss: 0.1629 -
mean_absolute_error: 0.2620 - mean_squared_error: 0.1507 - rmse: 0.3831 -
mean_absolute_percentage_error: 146.1193
200/200 [==============================] - 0s 996us/step
Regularizer chosen is L2
------------------------------------------------------------------------
Training for fold 5 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.3568 -
mean_absolute_error: 0.4432 - mean_squared_error: 0.3467 - rmse: 0.5787 -
mean_absolute_percentage_error: 207.5875
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2481 -
mean_absolute_error: 0.3483 - mean_squared_error: 0.2374 - rmse: 0.4832 -
```

```
mean_absolute_percentage_error: 191.4216
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2303 -
mean_absolute_error: 0.3308 - mean_squared_error: 0.2195 - rmse: 0.4643 -
mean_absolute_percentage_error: 194.4023
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2214 -
mean_absolute_error: 0.3220 - mean_squared_error: 0.2107 - rmse: 0.4549 -
mean_absolute_percentage_error: 193.8019
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2151 -
mean_absolute_error: 0.3167 - mean_squared_error: 0.2043 - rmse: 0.4479 -
mean_absolute_percentage_error: 183.1390
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2081 -
mean_absolute_error: 0.3093 - mean_squared_error: 0.1972 - rmse: 0.4390 -
mean_absolute_percentage_error: 191.2426
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2061 -
mean_absolute_error: 0.3086 - mean_squared_error: 0.1950 - rmse: 0.4377 -
mean_absolute_percentage_error: 185.2427
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2014 -
mean_absolute_error: 0.3036 - mean_squared_error: 0.1903 - rmse: 0.4321 -
mean_absolute_percentage_error: 181.5157
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2018 -
mean_absolute_error: 0.3048 - mean_squared_error: 0.1905 - rmse: 0.4335 -
mean_absolute_percentage_error: 177.8381
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1964 -
mean_absolute_error: 0.2992 - mean_squared_error: 0.1850 - rmse: 0.4254 -
mean_absolute_percentage_error: 176.3409
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2962 - mean_squared_error: 0.1813 - rmse: 0.4226 -
mean_absolute_percentage_error: 175.2800
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1918 -
mean_absolute_error: 0.2952 - mean_squared_error: 0.1803 - rmse: 0.4206 -
mean_absolute_percentage_error: 176.5942
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1893 -
mean_absolute_error: 0.2918 - mean_squared_error: 0.1778 - rmse: 0.4173 -
mean_absolute_percentage_error: 172.8882
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1910 -
mean_absolute_error: 0.2934 - mean_squared_error: 0.1794 - rmse: 0.4190 -
```

```
mean_absolute_percentage_error: 170.5328
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1882 -
mean_absolute_error: 0.2904 - mean_squared_error: 0.1766 - rmse: 0.4157 -
mean_absolute_percentage_error: 167.6139
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1855 -
mean_absolute_error: 0.2880 - mean_squared_error: 0.1739 - rmse: 0.4133 -
mean_absolute_percentage_error: 169.9706
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1831 -
mean_absolute_error: 0.2849 - mean_squared_error: 0.1714 - rmse: 0.4096 -
mean_absolute_percentage_error: 168.2728
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1856 -
mean_absolute_error: 0.2877 - mean_squared_error: 0.1739 - rmse: 0.4125 -
mean_absolute_percentage_error: 163.2924
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1822 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1705 - rmse: 0.4075 -
mean_absolute_percentage_error: 166.6497
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1817 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1700 - rmse: 0.4084 -
mean_absolute_percentage_error: 158.9327
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1813 -
mean_absolute_error: 0.2844 - mean_squared_error: 0.1696 - rmse: 0.4076 -
mean_absolute_percentage_error: 162.4732
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1801 -
mean_absolute_error: 0.2824 - mean_squared_error: 0.1683 - rmse: 0.4067 -
mean_absolute_percentage_error: 160.5247
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1786 -
mean_absolute_error: 0.2806 - mean_squared_error: 0.1667 - rmse: 0.4040 -
mean_absolute_percentage_error: 158.7225
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1778 -
mean_absolute_error: 0.2811 - mean_squared_error: 0.1660 - rmse: 0.4034 -
mean_absolute_percentage_error: 161.5099
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1779 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1661 - rmse: 0.4023 -
mean_absolute_percentage_error: 158.0575
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1763 -
mean_absolute_error: 0.2784 - mean_squared_error: 0.1645 - rmse: 0.4015 -
```

```
mean_absolute_percentage_error: 163.4285
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1768 -
mean_absolute_error: 0.2796 - mean_squared_error: 0.1649 - rmse: 0.4022 -
mean_absolute_percentage_error: 156.7853
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1751 -
mean_absolute_error: 0.2773 - mean_squared_error: 0.1633 - rmse: 0.4002 -
mean_absolute_percentage_error: 159.9326
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1748 -
mean_absolute_error: 0.2766 - mean_squared_error: 0.1630 - rmse: 0.3992 -
mean_absolute_percentage_error: 159.3560
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1737 -
mean_absolute_error: 0.2767 - mean_squared_error: 0.1619 - rmse: 0.3981 -
mean_absolute_percentage_error: 159.6206
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1732 -
mean_absolute_error: 0.2769 - mean_squared_error: 0.1615 - rmse: 0.3980 -
mean_absolute_percentage_error: 156.1784
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1728 -
mean_absolute_error: 0.2752 - mean_squared_error: 0.1610 - rmse: 0.3966 -
mean_absolute_percentage_error: 158.2273
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1737 -
mean_absolute_error: 0.2772 - mean_squared_error: 0.1619 - rmse: 0.3982 -
mean_absolute_percentage_error: 151.1111
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1741 -
mean_absolute_error: 0.2769 - mean_squared_error: 0.1622 - rmse: 0.3991 -
mean_absolute_percentage_error: 157.6926
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1706 -
mean_absolute_error: 0.2736 - mean_squared_error: 0.1588 - rmse: 0.3944 -
mean_absolute_percentage_error: 150.1519
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1731 -
mean_absolute_error: 0.2760 - mean_squared_error: 0.1613 - rmse: 0.3977 -
mean_absolute_percentage_error: 157.2678
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1711 -
mean_absolute_error: 0.2723 - mean_squared_error: 0.1594 - rmse: 0.3950 -
mean_absolute_percentage_error: 153.7881
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1708 -
mean_absolute_error: 0.2736 - mean_squared_error: 0.1591 - rmse: 0.3938 -
```

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mean_absolute_percentage_error: 158.7100
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1701 -
mean_absolute_error: 0.2715 - mean_squared_error: 0.1583 - rmse: 0.3940 -
mean_absolute_percentage_error: 154.7376
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1693 -
mean_absolute_error: 0.2723 - mean_squared_error: 0.1576 - rmse: 0.3921 -
mean_absolute_percentage_error: 155.7865
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1685 -
mean_absolute_error: 0.2711 - mean_squared_error: 0.1567 - rmse: 0.3917 -
mean_absolute_percentage_error: 157.1372
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1700 -
mean_absolute_error: 0.2721 - mean_squared_error: 0.1583 - rmse: 0.3938 -
mean_absolute_percentage_error: 156.8276
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1669 -
mean_absolute_error: 0.2688 - mean_squared_error: 0.1552 - rmse: 0.3888 -
mean_absolute_percentage_error: 154.6781
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1677 -
mean_absolute_error: 0.2688 - mean_squared_error: 0.1559 - rmse: 0.3899 -
mean_absolute_percentage_error: 150.7072
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1674 -
mean_absolute_error: 0.2695 - mean_squared_error: 0.1557 - rmse: 0.3898 -
mean_absolute_percentage_error: 148.8253
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1666 -
mean_absolute_error: 0.2684 - mean_squared_error: 0.1549 - rmse: 0.3897 -
mean_absolute_percentage_error: 150.4864
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1664 -
mean_absolute_error: 0.2678 - mean_squared_error: 0.1547 - rmse: 0.3884 -
mean_absolute_percentage_error: 154.6166
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1651 -
mean_absolute_error: 0.2679 - mean_squared_error: 0.1535 - rmse: 0.3869 -
mean_absolute_percentage_error: 151.6890
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1670 -
mean_absolute_error: 0.2681 - mean_squared_error: 0.1554 - rmse: 0.3894 -
mean_absolute_percentage_error: 156.9603
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1675 -
mean_absolute_error: 0.2699 - mean_squared_error: 0.1559 - rmse: 0.3905 -
```

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mean_absolute_percentage_error: 150.3984
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1671 -
mean_absolute_error: 0.2704 - mean_squared_error: 0.1555 - rmse: 0.3901 -
mean_absolute_percentage_error: 152.4836
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1676 -
mean_absolute_error: 0.2704 - mean_squared_error: 0.1559 - rmse: 0.3916 -
mean_absolute_percentage_error: 153.9838
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1669 -
mean_absolute_error: 0.2681 - mean_squared_error: 0.1552 - rmse: 0.3900 -
mean_absolute_percentage_error: 153.0607
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1668 -
mean_absolute_error: 0.2695 - mean_squared_error: 0.1552 - rmse: 0.3889 -
mean_absolute_percentage_error: 149.6614
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1649 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1532 - rmse: 0.3874 -
mean_absolute_percentage_error: 151.2165
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1648 -
mean_absolute_error: 0.2661 - mean_squared_error: 0.1530 - rmse: 0.3874 -
mean_absolute_percentage_error: 151.6265
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1667 -
mean_absolute_error: 0.2700 - mean_squared_error: 0.1550 - rmse: 0.3893 -
mean_absolute_percentage_error: 152.9983
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1635 -
mean_absolute_error: 0.2654 - mean_squared_error: 0.1518 - rmse: 0.3844 -
mean_absolute_percentage_error: 150.5929
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1642 -
mean_absolute_error: 0.2662 - mean_squared_error: 0.1525 - rmse: 0.3864 -
mean_absolute_percentage_error: 149.7820
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1644 -
mean_absolute_error: 0.2670 - mean_squared_error: 0.1527 - rmse: 0.3864 -
mean_absolute_percentage_error: 151.3804
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1657 -
mean_absolute_error: 0.2679 - mean_squared_error: 0.1540 - rmse: 0.3887 -
mean_absolute_percentage_error: 149.1040
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1644 -
mean_absolute_error: 0.2666 - mean_squared_error: 0.1527 - rmse: 0.3871 -
```

```
mean_absolute_percentage_error: 146.5744
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1635 -
mean_absolute_error: 0.2659 - mean_squared_error: 0.1518 - rmse: 0.3851 -
mean_absolute_percentage_error: 153.4692
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1655 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1538 - rmse: 0.3875 -
mean_absolute_percentage_error: 151.1224
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1619 -
mean_absolute_error: 0.2631 - mean_squared_error: 0.1502 - rmse: 0.3838 -
mean_absolute_percentage_error: 145.1259
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1660 -
mean_absolute_error: 0.2683 - mean_squared_error: 0.1543 - rmse: 0.3889 -
mean_absolute_percentage_error: 148.2612
Epoch 67/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1651 -
mean_absolute_error: 0.2658 - mean_squared_error: 0.1534 - rmse: 0.3876 -
mean_absolute_percentage_error: 147.4349
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1630 -
mean_absolute_error: 0.2655 - mean_squared_error: 0.1513 - rmse: 0.3851 -
mean_absolute_percentage_error: 151.3030
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1650 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1532 - rmse: 0.3858 -
mean_absolute_percentage_error: 149.1268
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1609 -
mean_absolute_error: 0.2641 - mean_squared_error: 0.1491 - rmse: 0.3821 -
mean_absolute_percentage_error: 150.4951
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1607 -
mean_absolute_error: 0.2625 - mean_squared_error: 0.1490 - rmse: 0.3819 -
mean_absolute_percentage_error: 144.8504
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1618 -
mean_absolute_error: 0.2652 - mean_squared_error: 0.1501 - rmse: 0.3846 -
mean_absolute_percentage_error: 145.8931
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1621 -
mean_absolute_error: 0.2649 - mean_squared_error: 0.1503 - rmse: 0.3838 -
mean_absolute_percentage_error: 144.0740
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1613 -
mean_absolute_error: 0.2631 - mean_squared_error: 0.1495 - rmse: 0.3824 -
```

```
mean_absolute_percentage_error: 151.9510
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1605 -
mean_absolute_error: 0.2615 - mean_squared_error: 0.1488 - rmse: 0.3821 -
mean_absolute_percentage_error: 155.5842
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1631 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1513 - rmse: 0.3846 -
mean_absolute_percentage_error: 148.7823
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1595 -
mean_absolute_error: 0.2618 - mean_squared_error: 0.1477 - rmse: 0.3810 -
mean_absolute_percentage_error: 150.6565
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1609 -
mean_absolute_error: 0.2621 - mean_squared_error: 0.1492 - rmse: 0.3821 -
mean_absolute_percentage_error: 148.7687
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1594 -
mean_absolute_error: 0.2615 - mean_squared_error: 0.1476 - rmse: 0.3806 -
mean_absolute_percentage_error: 145.3153
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1611 -
mean_absolute_error: 0.2628 - mean_squared_error: 0.1494 - rmse: 0.3815 -
mean_absolute_percentage_error: 150.2957
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1604 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1487 - rmse: 0.3815 -
mean_absolute_percentage_error: 148.6983
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1598 -
mean_absolute_error: 0.2622 - mean_squared_error: 0.1481 - rmse: 0.3804 -
mean_absolute_percentage_error: 151.8097
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1598 -
mean_absolute_error: 0.2617 - mean_squared_error: 0.1480 - rmse: 0.3796 -
mean_absolute_percentage_error: 143.0388
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1611 -
mean_absolute_error: 0.2644 - mean_squared_error: 0.1494 - rmse: 0.3823 -
mean_absolute_percentage_error: 155.2534
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1650 -
mean_absolute_error: 0.2679 - mean_squared_error: 0.1533 - rmse: 0.3881 -
mean_absolute_percentage_error: 152.2720
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1611 -
mean_absolute_error: 0.2622 - mean_squared_error: 0.1494 - rmse: 0.3813 -
```

```
mean_absolute_percentage_error: 147.8032
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1596 -
mean_absolute_error: 0.2610 - mean_squared_error: 0.1479 - rmse: 0.3809 -
mean_absolute_percentage_error: 148.9192
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1582 -
mean_absolute_error: 0.2608 - mean_squared_error: 0.1465 - rmse: 0.3782 -
mean_absolute_percentage_error: 143.2904
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1616 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1499 - rmse: 0.3825 -
mean_absolute_percentage_error: 148.5905
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1586 -
mean_absolute_error: 0.2602 - mean_squared_error: 0.1469 - rmse: 0.3787 -
mean_absolute_percentage_error: 142.9474
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1597 -
mean_absolute_error: 0.2614 - mean_squared_error: 0.1479 - rmse: 0.3809 -
mean_absolute_percentage_error: 151.3448
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1576 -
mean_absolute_error: 0.2593 - mean_squared_error: 0.1458 - rmse: 0.3767 -
mean_absolute_percentage_error: 149.6816
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1597 -
mean_absolute_error: 0.2627 - mean_squared_error: 0.1479 - rmse: 0.3794 -
mean_absolute_percentage_error: 142.6410
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1579 -
mean_absolute_error: 0.2592 - mean_squared_error: 0.1461 - rmse: 0.3778 -
mean_absolute_percentage_error: 147.2449
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1616 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1498 - rmse: 0.3837 -
mean_absolute_percentage_error: 149.0657
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1583 -
mean_absolute_error: 0.2603 - mean_squared_error: 0.1465 - rmse: 0.3791 -
mean_absolute_percentage_error: 145.6936
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1578 -
mean_absolute_error: 0.2608 - mean_squared_error: 0.1460 - rmse: 0.3775 -
mean_absolute_percentage_error: 147.2865
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1582 -
mean_absolute_error: 0.2590 - mean_squared_error: 0.1464 - rmse: 0.3787 -
```

```
mean_absolute_percentage_error: 145.5061
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1590 -
mean_absolute_error: 0.2602 - mean_squared_error: 0.1472 - rmse: 0.3795 -
mean_absolute_percentage_error: 149.8159
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1575 -
mean_absolute_error: 0.2596 - mean_squared_error: 0.1457 - rmse: 0.3784 -
mean_absolute_percentage_error: 142.3220
100/100 [==============================] - 0s 2ms/step - loss: 0.1662 -
mean_absolute_error: 0.2562 - mean_squared_error: 0.1543 - rmse: 0.3862 -
mean_absolute_percentage_error: 157.6031
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L2
--------------------------------------------------------------------------------
Training for fold 6 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.3625 -
mean_absolute_error: 0.4507 - mean_squared_error: 0.3526 - rmse: 0.5831 -
mean_absolute_percentage_error: 217.2838
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2462 -
mean_absolute_error: 0.3444 - mean_squared_error: 0.2355 - rmse: 0.4822 -
mean_absolute_percentage_error: 193.8535
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2285 -
mean_absolute_error: 0.3267 - mean_squared_error: 0.2177 - rmse: 0.4627 -
mean_absolute_percentage_error: 196.0504
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2212 -
mean_absolute_error: 0.3203 - mean_squared_error: 0.2103 - rmse: 0.4541 -
mean_absolute_percentage_error: 193.3857
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2163 -
mean_absolute_error: 0.3157 - mean_squared_error: 0.2053 - rmse: 0.4487 -
mean_absolute_percentage_error: 191.7854
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2085 -
mean_absolute_error: 0.3085 - mean_squared_error: 0.1974 - rmse: 0.4406 -
mean_absolute_percentage_error: 184.9083
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2067 -
mean_absolute_error: 0.3065 - mean_squared_error: 0.1955 - rmse: 0.4381 -
mean_absolute_percentage_error: 187.6118
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2019 -
mean_absolute_error: 0.3025 - mean_squared_error: 0.1907 - rmse: 0.4323 -
mean_absolute_percentage_error: 186.1485
```

```
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1978 -
mean_absolute_error: 0.2990 - mean_squared_error: 0.1864 - rmse: 0.4275 -
mean_absolute_percentage_error: 175.4557
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1979 -
mean_absolute_error: 0.2988 - mean_squared_error: 0.1865 - rmse: 0.4263 -
mean_absolute_percentage_error: 174.9659
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2942 - mean_squared_error: 0.1811 - rmse: 0.4211 -
mean_absolute_percentage_error: 178.7050
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1904 -
mean_absolute_error: 0.2902 - mean_squared_error: 0.1787 - rmse: 0.4187 -
mean_absolute_percentage_error: 170.4818
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1891 -
mean_absolute_error: 0.2895 - mean_squared_error: 0.1774 - rmse: 0.4160 -
mean_absolute_percentage_error: 177.1990
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1857 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1740 - rmse: 0.4131 -
mean_absolute_percentage_error: 171.3498
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1847 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1730 - rmse: 0.4117 -
mean_absolute_percentage_error: 169.1337
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1867 -
mean_absolute_error: 0.2875 - mean_squared_error: 0.1750 - rmse: 0.4137 -
mean_absolute_percentage_error: 172.3147
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1852 -
mean_absolute_error: 0.2857 - mean_squared_error: 0.1734 - rmse: 0.4120 -
mean_absolute_percentage_error: 168.7398
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1837 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1720 - rmse: 0.4105 -
mean_absolute_percentage_error: 172.4956
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1797 -
mean_absolute_error: 0.2793 - mean_squared_error: 0.1679 - rmse: 0.4062 -
mean_absolute_percentage_error: 170.1669
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1806 -
mean_absolute_error: 0.2806 - mean_squared_error: 0.1688 - rmse: 0.4067 -
mean_absolute_percentage_error: 164.3627
```

```
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1805 -
mean_absolute_error: 0.2821 - mean_squared_error: 0.1688 - rmse: 0.4064 -
mean_absolute_percentage_error: 170.8421
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1790 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1672 - rmse: 0.4041 -
mean_absolute_percentage_error: 166.7881
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1767 -
mean_absolute_error: 0.2783 - mean_squared_error: 0.1649 - rmse: 0.4020 -
mean_absolute_percentage_error: 159.8157
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1771 -
mean_absolute_error: 0.2777 - mean_squared_error: 0.1653 - rmse: 0.4023 -
mean_absolute_percentage_error: 162.5870
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1778 -
mean_absolute_error: 0.2791 - mean_squared_error: 0.1661 - rmse: 0.4035 -
mean_absolute_percentage_error: 166.2553
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1754 -
mean_absolute_error: 0.2764 - mean_squared_error: 0.1637 - rmse: 0.4006 -
mean_absolute_percentage_error: 164.6945
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1766 -
mean_absolute_error: 0.2775 - mean_squared_error: 0.1648 - rmse: 0.4016 -
mean_absolute_percentage_error: 164.6403
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1765 -
mean_absolute_error: 0.2779 - mean_squared_error: 0.1648 - rmse: 0.4007 -
mean_absolute_percentage_error: 163.0026
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1750 -
mean_absolute_error: 0.2757 - mean_squared_error: 0.1633 - rmse: 0.3998 -
mean_absolute_percentage_error: 166.1751
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1734 -
mean_absolute_error: 0.2743 - mean_squared_error: 0.1616 - rmse: 0.3984 -
mean_absolute_percentage_error: 163.1138
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1732 -
mean_absolute_error: 0.2740 - mean_squared_error: 0.1615 - rmse: 0.3976 -
mean_absolute_percentage_error: 166.0957
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1721 -
mean_absolute_error: 0.2730 - mean_squared_error: 0.1604 - rmse: 0.3971 -
mean_absolute_percentage_error: 164.1976
```

```
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1728 -
mean_absolute_error: 0.2740 - mean_squared_error: 0.1611 - rmse: 0.3979 -
mean_absolute_percentage_error: 162.1595
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1696 -
mean_absolute_error: 0.2709 - mean_squared_error: 0.1579 - rmse: 0.3930 -
mean_absolute_percentage_error: 163.1783
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1692 -
mean_absolute_error: 0.2698 - mean_squared_error: 0.1575 - rmse: 0.3925 -
mean_absolute_percentage_error: 159.3900
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1712 -
mean_absolute_error: 0.2726 - mean_squared_error: 0.1596 - rmse: 0.3952 -
mean_absolute_percentage_error: 157.9570
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1696 -
mean_absolute_error: 0.2709 - mean_squared_error: 0.1580 - rmse: 0.3922 -
mean_absolute_percentage_error: 162.0727
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1686 -
mean_absolute_error: 0.2694 - mean_squared_error: 0.1570 - rmse: 0.3913 -
mean_absolute_percentage_error: 162.3957
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1678 -
mean_absolute_error: 0.2687 - mean_squared_error: 0.1562 - rmse: 0.3916 -
mean_absolute_percentage_error: 154.7353
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1679 -
mean_absolute_error: 0.2699 - mean_squared_error: 0.1564 - rmse: 0.3913 -
mean_absolute_percentage_error: 155.2211
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1691 -
mean_absolute_error: 0.2697 - mean_squared_error: 0.1575 - rmse: 0.3930 -
mean_absolute_percentage_error: 161.8907
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1660 -
mean_absolute_error: 0.2681 - mean_squared_error: 0.1544 - rmse: 0.3891 -
mean_absolute_percentage_error: 155.5131
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1661 -
mean_absolute_error: 0.2684 - mean_squared_error: 0.1545 - rmse: 0.3894 -
mean_absolute_percentage_error: 159.9467
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1679 -
mean_absolute_error: 0.2694 - mean_squared_error: 0.1564 - rmse: 0.3905 -
mean_absolute_percentage_error: 154.6075
```

```
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1682 -
mean_absolute_error: 0.2696 - mean_squared_error: 0.1567 - rmse: 0.3904 -
mean_absolute_percentage_error: 160.8558
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1643 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1528 - rmse: 0.3867 -
mean_absolute_percentage_error: 158.1968
Epoch 47/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1639 -
mean_absolute_error: 0.2648 - mean_squared_error: 0.1524 - rmse: 0.3863 -
mean_absolute_percentage_error: 157.9643
Epoch 48/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1651 -
mean_absolute_error: 0.2673 - mean_squared_error: 0.1536 - rmse: 0.3878 -
mean_absolute_percentage_error: 157.0187
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1666 -
mean_absolute_error: 0.2686 - mean_squared_error: 0.1551 - rmse: 0.3892 -
mean_absolute_percentage_error: 161.3733
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1628 -
mean_absolute_error: 0.2635 - mean_squared_error: 0.1512 - rmse: 0.3837 -
mean_absolute_percentage_error: 155.4337
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1675 -
mean_absolute_error: 0.2683 - mean_squared_error: 0.1560 - rmse: 0.3909 -
mean_absolute_percentage_error: 157.8935
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1647 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1531 - rmse: 0.3868 -
mean_absolute_percentage_error: 155.0308
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1638 -
mean_absolute_error: 0.2652 - mean_squared_error: 0.1523 - rmse: 0.3859 -
mean_absolute_percentage_error: 156.4144
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1611 -
mean_absolute_error: 0.2639 - mean_squared_error: 0.1496 - rmse: 0.3829 -
mean_absolute_percentage_error: 154.8650
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1628 -
mean_absolute_error: 0.2643 - mean_squared_error: 0.1513 - rmse: 0.3852 -
mean_absolute_percentage_error: 157.6167
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1614 -
mean_absolute_error: 0.2640 - mean_squared_error: 0.1499 - rmse: 0.3828 -
mean_absolute_percentage_error: 157.4265
```

```
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1655 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1541 - rmse: 0.3880 -
mean_absolute_percentage_error: 161.0530
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1626 -
mean_absolute_error: 0.2635 - mean_squared_error: 0.1512 - rmse: 0.3843 -
mean_absolute_percentage_error: 154.7600
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1604 -
mean_absolute_error: 0.2625 - mean_squared_error: 0.1489 - rmse: 0.3819 -
mean_absolute_percentage_error: 158.4396
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1617 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1503 - rmse: 0.3832 -
mean_absolute_percentage_error: 159.0260
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1655 -
mean_absolute_error: 0.2669 - mean_squared_error: 0.1540 - rmse: 0.3878 -
mean_absolute_percentage_error: 156.6548
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1606 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1491 - rmse: 0.3817 -
mean_absolute_percentage_error: 159.1213
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1616 -
mean_absolute_error: 0.2626 - mean_squared_error: 0.1501 - rmse: 0.3833 -
mean_absolute_percentage_error: 158.1544
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1611 -
mean_absolute_error: 0.2623 - mean_squared_error: 0.1497 - rmse: 0.3825 -
mean_absolute_percentage_error: 157.4088
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1600 -
mean_absolute_error: 0.2616 - mean_squared_error: 0.1485 - rmse: 0.3802 -
mean_absolute_percentage_error: 157.5401
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1582 -
mean_absolute_error: 0.2602 - mean_squared_error: 0.1467 - rmse: 0.3791 -
mean_absolute_percentage_error: 154.5900
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1623 -
mean_absolute_error: 0.2644 - mean_squared_error: 0.1508 - rmse: 0.3846 -
mean_absolute_percentage_error: 160.6175
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1607 -
mean_absolute_error: 0.2631 - mean_squared_error: 0.1493 - rmse: 0.3817 -
mean_absolute_percentage_error: 157.9300
```

```
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1596 -
mean_absolute_error: 0.2610 - mean_squared_error: 0.1482 - rmse: 0.3799 -
mean_absolute_percentage_error: 156.4240
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1614 -
mean_absolute_error: 0.2626 - mean_squared_error: 0.1499 - rmse: 0.3837 -
mean_absolute_percentage_error: 157.3497
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1588 -
mean_absolute_error: 0.2611 - mean_squared_error: 0.1473 - rmse: 0.3807 -
mean_absolute_percentage_error: 158.5050
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1585 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1472 - rmse: 0.3790 -
mean_absolute_percentage_error: 153.1546
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1593 -
mean_absolute_error: 0.2610 - mean_squared_error: 0.1480 - rmse: 0.3803 -
mean_absolute_percentage_error: 154.0322
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1596 -
mean_absolute_error: 0.2628 - mean_squared_error: 0.1482 - rmse: 0.3811 -
mean_absolute_percentage_error: 155.0167
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1581 -
mean_absolute_error: 0.2602 - mean_squared_error: 0.1467 - rmse: 0.3793 -
mean_absolute_percentage_error: 152.9241
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1585 -
mean_absolute_error: 0.2621 - mean_squared_error: 0.1471 - rmse: 0.3796 -
mean_absolute_percentage_error: 155.6009
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1565 -
mean_absolute_error: 0.2586 - mean_squared_error: 0.1451 - rmse: 0.3768 -
mean_absolute_percentage_error: 154.8975
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1602 -
mean_absolute_error: 0.2615 - mean_squared_error: 0.1489 - rmse: 0.3813 -
mean_absolute_percentage_error: 157.0378
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1609 -
mean_absolute_error: 0.2636 - mean_squared_error: 0.1494 - rmse: 0.3820 -
mean_absolute_percentage_error: 155.7514
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1578 -
mean_absolute_error: 0.2594 - mean_squared_error: 0.1463 - rmse: 0.3786 -
mean_absolute_percentage_error: 147.1429
```

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Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1575 -
mean_absolute_error: 0.2604 - mean_squared_error: 0.1461 - rmse: 0.3788 -
mean_absolute_percentage_error: 151.1799
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1608 -
mean_absolute_error: 0.2623 - mean_squared_error: 0.1494 - rmse: 0.3826 -
mean_absolute_percentage_error: 156.7544
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1555 -
mean_absolute_error: 0.2577 - mean_squared_error: 0.1440 - rmse: 0.3744 -
mean_absolute_percentage_error: 150.5729
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1570 -
mean_absolute_error: 0.2580 - mean_squared_error: 0.1455 - rmse: 0.3778 -
mean_absolute_percentage_error: 152.6500
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1567 -
mean_absolute_error: 0.2594 - mean_squared_error: 0.1453 - rmse: 0.3774 -
mean_absolute_percentage_error: 150.4074
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1574 -
mean_absolute_error: 0.2596 - mean_squared_error: 0.1460 - rmse: 0.3788 -
mean_absolute_percentage_error: 147.8345
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1551 -
mean_absolute_error: 0.2565 - mean_squared_error: 0.1436 - rmse: 0.3743 -
mean_absolute_percentage_error: 153.1337
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1552 -
mean_absolute_error: 0.2583 - mean_squared_error: 0.1438 - rmse: 0.3752 -
mean_absolute_percentage_error: 148.6257
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1548 -
mean_absolute_error: 0.2566 - mean_squared_error: 0.1434 - rmse: 0.3746 -
mean_absolute_percentage_error: 153.2463
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1559 -
mean_absolute_error: 0.2577 - mean_squared_error: 0.1445 - rmse: 0.3761 -
mean_absolute_percentage_error: 148.2598
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1549 -
mean_absolute_error: 0.2571 - mean_squared_error: 0.1435 - rmse: 0.3743 -
mean_absolute_percentage_error: 151.6431
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1555 -
mean_absolute_error: 0.2571 - mean_squared_error: 0.1441 - rmse: 0.3753 -
mean_absolute_percentage_error: 153.8855
```

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Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1593 -
mean_absolute_error: 0.2607 - mean_squared_error: 0.1479 - rmse: 0.3794 -
mean_absolute_percentage_error: 153.8341
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1549 -
mean_absolute_error: 0.2564 - mean_squared_error: 0.1435 - rmse: 0.3746 -
mean_absolute_percentage_error: 150.8335
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1540 -
mean_absolute_error: 0.2549 - mean_squared_error: 0.1425 - rmse: 0.3742 -
mean_absolute_percentage_error: 152.7081
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1573 -
mean_absolute_error: 0.2582 - mean_squared_error: 0.1458 - rmse: 0.3775 -
mean_absolute_percentage_error: 154.4598
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1550 -
mean_absolute_error: 0.2567 - mean_squared_error: 0.1435 - rmse: 0.3740 -
mean_absolute_percentage_error: 154.3321
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1555 -
mean_absolute_error: 0.2574 - mean_squared_error: 0.1440 - rmse: 0.3753 -
mean_absolute_percentage_error: 154.6498
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1587 -
mean_absolute_error: 0.2604 - mean_squared_error: 0.1473 - rmse: 0.3789 -
mean_absolute_percentage_error: 152.3494
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1555 -
mean_absolute_error: 0.2563 - mean_squared_error: 0.1441 - rmse: 0.3755 -
mean_absolute_percentage_error: 155.4357
100/100 [==============================] - 0s 2ms/step - loss: 0.1605 -
mean_absolute_error: 0.2532 - mean_squared_error: 0.1490 - rmse: 0.3800 -
mean_absolute_percentage_error: 150.3948
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L2
------------------------------------------------------------------------
Training for fold 7 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.3577 -
mean_absolute_error: 0.4446 - mean_squared_error: 0.3479 - rmse: 0.5790 -
mean_absolute_percentage_error: 194.2453
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2449 -
mean_absolute_error: 0.3449 - mean_squared_error: 0.2342 - rmse: 0.4798 -
mean_absolute_percentage_error: 179.8218
Epoch 3/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.2273 -
mean_absolute_error: 0.3278 - mean_squared_error: 0.2165 - rmse: 0.4616 -
mean_absolute_percentage_error: 183.0322
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2189 -
mean_absolute_error: 0.3197 - mean_squared_error: 0.2080 - rmse: 0.4523 -
mean_absolute_percentage_error: 181.0101
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2116 -
mean_absolute_error: 0.3130 - mean_squared_error: 0.2006 - rmse: 0.4434 -
mean_absolute_percentage_error: 176.7776
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2064 -
mean_absolute_error: 0.3070 - mean_squared_error: 0.1952 - rmse: 0.4370 -
mean_absolute_percentage_error: 166.8138
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2010 -
mean_absolute_error: 0.3020 - mean_squared_error: 0.1897 - rmse: 0.4320 -
mean_absolute_percentage_error: 171.0760
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1999 -
mean_absolute_error: 0.3004 - mean_squared_error: 0.1885 - rmse: 0.4296 -
mean_absolute_percentage_error: 161.8666
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1975 -
mean_absolute_error: 0.2970 - mean_squared_error: 0.1859 - rmse: 0.4277 -
mean_absolute_percentage_error: 162.8289
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1945 -
mean_absolute_error: 0.2954 - mean_squared_error: 0.1829 - rmse: 0.4234 -
mean_absolute_percentage_error: 153.7850
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1916 -
mean_absolute_error: 0.2919 - mean_squared_error: 0.1798 - rmse: 0.4195 -
mean_absolute_percentage_error: 156.7331
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1906 -
mean_absolute_error: 0.2906 - mean_squared_error: 0.1788 - rmse: 0.4191 -
mean_absolute_percentage_error: 159.9837
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1897 -
mean_absolute_error: 0.2889 - mean_squared_error: 0.1778 - rmse: 0.4176 -
mean_absolute_percentage_error: 155.7436
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1861 -
mean_absolute_error: 0.2861 - mean_squared_error: 0.1742 - rmse: 0.4124 -
mean_absolute_percentage_error: 154.2016
Epoch 15/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1847 -
mean_absolute_error: 0.2849 - mean_squared_error: 0.1727 - rmse: 0.4112 -
mean_absolute_percentage_error: 154.4674
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1855 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1735 - rmse: 0.4128 -
mean_absolute_percentage_error: 152.8229
Epoch 17/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1849 -
mean_absolute_error: 0.2841 - mean_squared_error: 0.1729 - rmse: 0.4118 -
mean_absolute_percentage_error: 153.5752
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1834 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1714 - rmse: 0.4096 -
mean_absolute_percentage_error: 156.1003
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1827 -
mean_absolute_error: 0.2822 - mean_squared_error: 0.1707 - rmse: 0.4095 -
mean_absolute_percentage_error: 144.7460
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1791 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1670 - rmse: 0.4044 -
mean_absolute_percentage_error: 148.3823
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1814 -
mean_absolute_error: 0.2817 - mean_squared_error: 0.1694 - rmse: 0.4071 -
mean_absolute_percentage_error: 146.7613
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1786 -
mean_absolute_error: 0.2792 - mean_squared_error: 0.1666 - rmse: 0.4034 -
mean_absolute_percentage_error: 151.5562
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1765 -
mean_absolute_error: 0.2768 - mean_squared_error: 0.1644 - rmse: 0.4015 -
mean_absolute_percentage_error: 148.9759
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1780 -
mean_absolute_error: 0.2794 - mean_squared_error: 0.1660 - rmse: 0.4039 -
mean_absolute_percentage_error: 145.4996
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1763 -
mean_absolute_error: 0.2762 - mean_squared_error: 0.1644 - rmse: 0.4009 -
mean_absolute_percentage_error: 148.3229
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1736 -
mean_absolute_error: 0.2740 - mean_squared_error: 0.1616 - rmse: 0.3975 -
mean_absolute_percentage_error: 149.8082
Epoch 27/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1758 -
mean_absolute_error: 0.2764 - mean_squared_error: 0.1639 - rmse: 0.4007 -
mean_absolute_percentage_error: 148.0173
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1759 -
mean_absolute_error: 0.2761 - mean_squared_error: 0.1640 - rmse: 0.4000 -
mean_absolute_percentage_error: 149.1108
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1732 -
mean_absolute_error: 0.2746 - mean_squared_error: 0.1613 - rmse: 0.3982 -
mean_absolute_percentage_error: 146.0649
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1733 -
mean_absolute_error: 0.2746 - mean_squared_error: 0.1614 - rmse: 0.3971 -
mean_absolute_percentage_error: 144.9499
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1736 -
mean_absolute_error: 0.2733 - mean_squared_error: 0.1617 - rmse: 0.3984 -
mean_absolute_percentage_error: 140.6704
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1737 -
mean_absolute_error: 0.2754 - mean_squared_error: 0.1618 - rmse: 0.3980 -
mean_absolute_percentage_error: 148.5062
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1716 -
mean_absolute_error: 0.2724 - mean_squared_error: 0.1597 - rmse: 0.3952 -
mean_absolute_percentage_error: 142.5392
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1712 -
mean_absolute_error: 0.2725 - mean_squared_error: 0.1593 - rmse: 0.3942 -
mean_absolute_percentage_error: 141.7575
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1705 -
mean_absolute_error: 0.2716 - mean_squared_error: 0.1586 - rmse: 0.3925 -
mean_absolute_percentage_error: 144.0183
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1701 -
mean_absolute_error: 0.2707 - mean_squared_error: 0.1582 - rmse: 0.3930 -
mean_absolute_percentage_error: 144.9258
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1682 -
mean_absolute_error: 0.2689 - mean_squared_error: 0.1564 - rmse: 0.3911 -
mean_absolute_percentage_error: 137.5682
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1688 -
mean_absolute_error: 0.2690 - mean_squared_error: 0.1570 - rmse: 0.3926 -
mean_absolute_percentage_error: 144.1511
Epoch 39/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.1699 -
mean_absolute_error: 0.2703 - mean_squared_error: 0.1581 - rmse: 0.3929 -
mean_absolute_percentage_error: 143.5148
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1692 -
mean_absolute_error: 0.2697 - mean_squared_error: 0.1574 - rmse: 0.3929 -
mean_absolute_percentage_error: 143.6979
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1671 -
mean_absolute_error: 0.2678 - mean_squared_error: 0.1553 - rmse: 0.3901 -
mean_absolute_percentage_error: 142.8569
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1675 -
mean_absolute_error: 0.2683 - mean_squared_error: 0.1557 - rmse: 0.3898 -
mean_absolute_percentage_error: 138.2868
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1678 -
mean_absolute_error: 0.2698 - mean_squared_error: 0.1560 - rmse: 0.3906 -
mean_absolute_percentage_error: 143.6653
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1696 -
mean_absolute_error: 0.2703 - mean_squared_error: 0.1579 - rmse: 0.3929 -
mean_absolute_percentage_error: 141.4609
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1698 -
mean_absolute_error: 0.2713 - mean_squared_error: 0.1581 - rmse: 0.3924 -
mean_absolute_percentage_error: 139.4635
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1648 -
mean_absolute_error: 0.2654 - mean_squared_error: 0.1531 - rmse: 0.3868 -
mean_absolute_percentage_error: 138.8258
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1657 -
mean_absolute_error: 0.2669 - mean_squared_error: 0.1540 - rmse: 0.3878 -
mean_absolute_percentage_error: 145.1513
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1670 -
mean_absolute_error: 0.2686 - mean_squared_error: 0.1553 - rmse: 0.3889 -
mean_absolute_percentage_error: 141.7342
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1701 -
mean_absolute_error: 0.2701 - mean_squared_error: 0.1584 - rmse: 0.3935 -
mean_absolute_percentage_error: 139.1734
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1632 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1515 - rmse: 0.3842 -
mean_absolute_percentage_error: 140.6573
Epoch 51/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1674 -
mean_absolute_error: 0.2685 - mean_squared_error: 0.1556 - rmse: 0.3901 -
mean_absolute_percentage_error: 144.2247
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1666 -
mean_absolute_error: 0.2667 - mean_squared_error: 0.1549 - rmse: 0.3905 -
mean_absolute_percentage_error: 137.9342
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1664 -
mean_absolute_error: 0.2669 - mean_squared_error: 0.1547 - rmse: 0.3889 -
mean_absolute_percentage_error: 143.0128
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1624 -
mean_absolute_error: 0.2634 - mean_squared_error: 0.1506 - rmse: 0.3842 -
mean_absolute_percentage_error: 137.6459
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1666 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1548 - rmse: 0.3887 -
mean_absolute_percentage_error: 136.7808
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1665 -
mean_absolute_error: 0.2668 - mean_squared_error: 0.1548 - rmse: 0.3895 -
mean_absolute_percentage_error: 141.0715
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1617 -
mean_absolute_error: 0.2623 - mean_squared_error: 0.1498 - rmse: 0.3828 -
mean_absolute_percentage_error: 136.8577
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1630 -
mean_absolute_error: 0.2633 - mean_squared_error: 0.1512 - rmse: 0.3843 -
mean_absolute_percentage_error: 142.7499
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1648 -
mean_absolute_error: 0.2658 - mean_squared_error: 0.1530 - rmse: 0.3864 -
mean_absolute_percentage_error: 142.2162
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1602 -
mean_absolute_error: 0.2612 - mean_squared_error: 0.1484 - rmse: 0.3812 -
mean_absolute_percentage_error: 142.6432
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1661 -
mean_absolute_error: 0.2664 - mean_squared_error: 0.1543 - rmse: 0.3887 -
mean_absolute_percentage_error: 143.3612
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1621 -
mean_absolute_error: 0.2632 - mean_squared_error: 0.1503 - rmse: 0.3840 -
mean_absolute_percentage_error: 140.0144
Epoch 63/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1594 -
mean_absolute_error: 0.2595 - mean_squared_error: 0.1476 - rmse: 0.3798 -
mean_absolute_percentage_error: 139.2022
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1618 -
mean_absolute_error: 0.2623 - mean_squared_error: 0.1500 - rmse: 0.3827 -
mean_absolute_percentage_error: 141.6547
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1639 -
mean_absolute_error: 0.2638 - mean_squared_error: 0.1521 - rmse: 0.3856 -
mean_absolute_percentage_error: 145.7876
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1604 -
mean_absolute_error: 0.2609 - mean_squared_error: 0.1486 - rmse: 0.3812 -
mean_absolute_percentage_error: 141.4964
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1641 -
mean_absolute_error: 0.2644 - mean_squared_error: 0.1523 - rmse: 0.3859 -
mean_absolute_percentage_error: 137.5605
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1618 -
mean_absolute_error: 0.2620 - mean_squared_error: 0.1500 - rmse: 0.3832 -
mean_absolute_percentage_error: 138.4247
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1596 -
mean_absolute_error: 0.2607 - mean_squared_error: 0.1479 - rmse: 0.3803 -
mean_absolute_percentage_error: 138.6714
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1593 -
mean_absolute_error: 0.2606 - mean_squared_error: 0.1476 - rmse: 0.3798 -
mean_absolute_percentage_error: 137.4530
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1603 -
mean_absolute_error: 0.2627 - mean_squared_error: 0.1485 - rmse: 0.3813 -
mean_absolute_percentage_error: 139.0390
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1602 -
mean_absolute_error: 0.2614 - mean_squared_error: 0.1484 - rmse: 0.3806 -
mean_absolute_percentage_error: 139.8863
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1596 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1478 - rmse: 0.3802 -
mean_absolute_percentage_error: 134.3855
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1592 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1474 - rmse: 0.3791 -
mean_absolute_percentage_error: 142.1941
Epoch 75/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1593 -
mean_absolute_error: 0.2596 - mean_squared_error: 0.1476 - rmse: 0.3791 -
mean_absolute_percentage_error: 138.8005
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1629 -
mean_absolute_error: 0.2635 - mean_squared_error: 0.1511 - rmse: 0.3842 -
mean_absolute_percentage_error: 142.1104
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1582 -
mean_absolute_error: 0.2595 - mean_squared_error: 0.1464 - rmse: 0.3786 -
mean_absolute_percentage_error: 140.0532
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1597 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1480 - rmse: 0.3793 -
mean_absolute_percentage_error: 136.6895
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1574 -
mean_absolute_error: 0.2588 - mean_squared_error: 0.1456 - rmse: 0.3768 -
mean_absolute_percentage_error: 133.4927
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1645 -
mean_absolute_error: 0.2640 - mean_squared_error: 0.1527 - rmse: 0.3862 -
mean_absolute_percentage_error: 136.3939
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1579 -
mean_absolute_error: 0.2587 - mean_squared_error: 0.1461 - rmse: 0.3781 -
mean_absolute_percentage_error: 135.3208
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1585 -
mean_absolute_error: 0.2595 - mean_squared_error: 0.1468 - rmse: 0.3783 -
mean_absolute_percentage_error: 135.9470
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1575 -
mean_absolute_error: 0.2593 - mean_squared_error: 0.1458 - rmse: 0.3768 -
mean_absolute_percentage_error: 142.5377
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1558 -
mean_absolute_error: 0.2571 - mean_squared_error: 0.1440 - rmse: 0.3752 -
mean_absolute_percentage_error: 134.3521
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1582 -
mean_absolute_error: 0.2575 - mean_squared_error: 0.1465 - rmse: 0.3777 -
mean_absolute_percentage_error: 134.3263
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1582 -
mean_absolute_error: 0.2589 - mean_squared_error: 0.1464 - rmse: 0.3781 -
mean_absolute_percentage_error: 138.5178
Epoch 87/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1603 -
mean_absolute_error: 0.2619 - mean_squared_error: 0.1485 - rmse: 0.3813 -
mean_absolute_percentage_error: 136.1413
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1570 -
mean_absolute_error: 0.2569 - mean_squared_error: 0.1452 - rmse: 0.3764 -
mean_absolute_percentage_error: 140.4794
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1568 -
mean_absolute_error: 0.2580 - mean_squared_error: 0.1450 - rmse: 0.3772 -
mean_absolute_percentage_error: 131.5810
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1594 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1476 - rmse: 0.3810 -
mean_absolute_percentage_error: 136.9590
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1565 -
mean_absolute_error: 0.2579 - mean_squared_error: 0.1448 - rmse: 0.3759 -
mean_absolute_percentage_error: 138.6390
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1578 -
mean_absolute_error: 0.2581 - mean_squared_error: 0.1460 - rmse: 0.3776 -
mean_absolute_percentage_error: 137.9542
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1571 -
mean_absolute_error: 0.2581 - mean_squared_error: 0.1453 - rmse: 0.3776 -
mean_absolute_percentage_error: 138.7533
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1601 -
mean_absolute_error: 0.2604 - mean_squared_error: 0.1483 - rmse: 0.3804 -
mean_absolute_percentage_error: 138.4225
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1610 -
mean_absolute_error: 0.2618 - mean_squared_error: 0.1492 - rmse: 0.3815 -
mean_absolute_percentage_error: 137.5564
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1572 -
mean_absolute_error: 0.2572 - mean_squared_error: 0.1454 - rmse: 0.3771 -
mean_absolute_percentage_error: 136.8207
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1556 -
mean_absolute_error: 0.2568 - mean_squared_error: 0.1438 - rmse: 0.3746 -
mean_absolute_percentage_error: 135.6575
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1573 -
mean_absolute_error: 0.2571 - mean_squared_error: 0.1455 - rmse: 0.3758 -
mean_absolute_percentage_error: 137.8667
Epoch 99/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1581 -
mean_absolute_error: 0.2588 - mean_squared_error: 0.1463 - rmse: 0.3785 -
mean_absolute_percentage_error: 137.3689
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1584 -
mean_absolute_error: 0.2582 - mean_squared_error: 0.1466 - rmse: 0.3777 -
mean_absolute_percentage_error: 134.8156
100/100 [==============================] - 0s 2ms/step - loss: 0.1645 -
mean_absolute_error: 0.2664 - mean_squared_error: 0.1527 - rmse: 0.3854 -
mean_absolute_percentage_error: 150.5726
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L2
--------------------------------------------------------------------------------
Training for fold 8 ...
Epoch 1/100
210/210 [==============================] - 3s 2ms/step - loss: 0.3471 -
mean_absolute_error: 0.4360 - mean_squared_error: 0.3377 - rmse: 0.5716 -
mean_absolute_percentage_error: 207.9424
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2447 -
mean_absolute_error: 0.3451 - mean_squared_error: 0.2343 - rmse: 0.4804 -
mean_absolute_percentage_error: 188.1360
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2274 -
mean_absolute_error: 0.3274 - mean_squared_error: 0.2168 - rmse: 0.4624 -
mean_absolute_percentage_error: 187.9893
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2161 -
mean_absolute_error: 0.3171 - mean_squared_error: 0.2054 - rmse: 0.4494 -
mean_absolute_percentage_error: 180.9857
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2122 -
mean_absolute_error: 0.3138 - mean_squared_error: 0.2015 - rmse: 0.4453 -
mean_absolute_percentage_error: 175.4613
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2068 -
mean_absolute_error: 0.3092 - mean_squared_error: 0.1960 - rmse: 0.4379 -
mean_absolute_percentage_error: 177.8611
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2035 -
mean_absolute_error: 0.3043 - mean_squared_error: 0.1926 - rmse: 0.4344 -
mean_absolute_percentage_error: 172.1220
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2004 -
mean_absolute_error: 0.3025 - mean_squared_error: 0.1894 - rmse: 0.4303 -
mean_absolute_percentage_error: 174.3061
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1963 -
```

```
mean_absolute_error: 0.2991 - mean_squared_error: 0.1852 - rmse: 0.4246 -
mean_absolute_percentage_error: 173.3093
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1957 -
mean_absolute_error: 0.2978 - mean_squared_error: 0.1845 - rmse: 0.4254 -
mean_absolute_percentage_error: 170.2181
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1937 -
mean_absolute_error: 0.2955 - mean_squared_error: 0.1825 - rmse: 0.4238 -
mean_absolute_percentage_error: 171.7435
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1899 -
mean_absolute_error: 0.2924 - mean_squared_error: 0.1786 - rmse: 0.4177 -
mean_absolute_percentage_error: 164.7761
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1884 -
mean_absolute_error: 0.2896 - mean_squared_error: 0.1770 - rmse: 0.4157 -
mean_absolute_percentage_error: 162.0431
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1877 -
mean_absolute_error: 0.2893 - mean_squared_error: 0.1763 - rmse: 0.4162 -
mean_absolute_percentage_error: 161.9926
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1863 -
mean_absolute_error: 0.2900 - mean_squared_error: 0.1748 - rmse: 0.4141 -
mean_absolute_percentage_error: 163.4827
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1867 -
mean_absolute_error: 0.2878 - mean_squared_error: 0.1751 - rmse: 0.4143 -
mean_absolute_percentage_error: 156.5008
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1849 -
mean_absolute_error: 0.2871 - mean_squared_error: 0.1732 - rmse: 0.4126 -
mean_absolute_percentage_error: 157.3997
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1825 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1708 - rmse: 0.4089 -
mean_absolute_percentage_error: 160.0125
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1819 -
mean_absolute_error: 0.2840 - mean_squared_error: 0.1701 - rmse: 0.4078 -
mean_absolute_percentage_error: 158.9332
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1786 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1668 - rmse: 0.4040 -
mean_absolute_percentage_error: 159.3028
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1789 -
```

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mean_absolute_error: 0.2822 - mean_squared_error: 0.1671 - rmse: 0.4044 -
mean_absolute_percentage_error: 156.9073
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1782 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1664 - rmse: 0.4037 -
mean_absolute_percentage_error: 156.1655
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1779 -
mean_absolute_error: 0.2798 - mean_squared_error: 0.1661 - rmse: 0.4027 -
mean_absolute_percentage_error: 160.0211
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1766 -
mean_absolute_error: 0.2788 - mean_squared_error: 0.1647 - rmse: 0.4015 -
mean_absolute_percentage_error: 158.3777
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1740 -
mean_absolute_error: 0.2760 - mean_squared_error: 0.1622 - rmse: 0.3969 -
mean_absolute_percentage_error: 157.2402
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1730 -
mean_absolute_error: 0.2754 - mean_squared_error: 0.1611 - rmse: 0.3975 -
mean_absolute_percentage_error: 152.6901
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1747 -
mean_absolute_error: 0.2772 - mean_squared_error: 0.1628 - rmse: 0.3990 -
mean_absolute_percentage_error: 154.0833
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1716 -
mean_absolute_error: 0.2738 - mean_squared_error: 0.1597 - rmse: 0.3957 -
mean_absolute_percentage_error: 153.1164
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1719 -
mean_absolute_error: 0.2745 - mean_squared_error: 0.1600 - rmse: 0.3963 -
mean_absolute_percentage_error: 148.9120
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1715 -
mean_absolute_error: 0.2748 - mean_squared_error: 0.1596 - rmse: 0.3959 -
mean_absolute_percentage_error: 152.0710
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1716 -
mean_absolute_error: 0.2738 - mean_squared_error: 0.1597 - rmse: 0.3945 -
mean_absolute_percentage_error: 148.3456
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1736 -
mean_absolute_error: 0.2759 - mean_squared_error: 0.1617 - rmse: 0.3982 -
mean_absolute_percentage_error: 152.5084
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1700 -
```

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mean_absolute_error: 0.2725 - mean_squared_error: 0.1580 - rmse: 0.3945 -
mean_absolute_percentage_error: 152.4205
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1695 -
mean_absolute_error: 0.2712 - mean_squared_error: 0.1576 - rmse: 0.3922 -
mean_absolute_percentage_error: 150.1817
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1678 -
mean_absolute_error: 0.2710 - mean_squared_error: 0.1558 - rmse: 0.3911 -
mean_absolute_percentage_error: 150.4614
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1686 -
mean_absolute_error: 0.2717 - mean_squared_error: 0.1566 - rmse: 0.3902 -
mean_absolute_percentage_error: 154.7195
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1676 -
mean_absolute_error: 0.2690 - mean_squared_error: 0.1557 - rmse: 0.3905 -
mean_absolute_percentage_error: 152.5299
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1679 -
mean_absolute_error: 0.2705 - mean_squared_error: 0.1559 - rmse: 0.3917 -
mean_absolute_percentage_error: 158.6885
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1675 -
mean_absolute_error: 0.2705 - mean_squared_error: 0.1556 - rmse: 0.3903 -
mean_absolute_percentage_error: 146.1325
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1686 -
mean_absolute_error: 0.2716 - mean_squared_error: 0.1566 - rmse: 0.3921 -
mean_absolute_percentage_error: 155.9369
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1679 -
mean_absolute_error: 0.2697 - mean_squared_error: 0.1560 - rmse: 0.3904 -
mean_absolute_percentage_error: 151.3498
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1657 -
mean_absolute_error: 0.2669 - mean_squared_error: 0.1538 - rmse: 0.3872 -
mean_absolute_percentage_error: 152.0060
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1648 -
mean_absolute_error: 0.2665 - mean_squared_error: 0.1528 - rmse: 0.3870 -
mean_absolute_percentage_error: 154.3011
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1643 -
mean_absolute_error: 0.2659 - mean_squared_error: 0.1523 - rmse: 0.3859 -
mean_absolute_percentage_error: 149.3992
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1646 -
```

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mean_absolute_error: 0.2666 - mean_squared_error: 0.1527 - rmse: 0.3869 -
mean_absolute_percentage_error: 148.5563
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1670 -
mean_absolute_error: 0.2679 - mean_squared_error: 0.1551 - rmse: 0.3887 -
mean_absolute_percentage_error: 147.9564
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1638 -
mean_absolute_error: 0.2655 - mean_squared_error: 0.1519 - rmse: 0.3854 -
mean_absolute_percentage_error: 150.0441
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1622 -
mean_absolute_error: 0.2642 - mean_squared_error: 0.1503 - rmse: 0.3833 -
mean_absolute_percentage_error: 149.5140
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1632 -
mean_absolute_error: 0.2646 - mean_squared_error: 0.1513 - rmse: 0.3855 -
mean_absolute_percentage_error: 143.0370
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1632 -
mean_absolute_error: 0.2644 - mean_squared_error: 0.1513 - rmse: 0.3847 -
mean_absolute_percentage_error: 143.9284
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1643 -
mean_absolute_error: 0.2662 - mean_squared_error: 0.1525 - rmse: 0.3865 -
mean_absolute_percentage_error: 143.1726
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1648 -
mean_absolute_error: 0.2667 - mean_squared_error: 0.1530 - rmse: 0.3875 -
mean_absolute_percentage_error: 144.7886
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1634 -
mean_absolute_error: 0.2659 - mean_squared_error: 0.1516 - rmse: 0.3850 -
mean_absolute_percentage_error: 153.1143
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1634 -
mean_absolute_error: 0.2640 - mean_squared_error: 0.1516 - rmse: 0.3852 -
mean_absolute_percentage_error: 145.1177
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1638 -
mean_absolute_error: 0.2655 - mean_squared_error: 0.1519 - rmse: 0.3855 -
mean_absolute_percentage_error: 152.4353
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1609 -
mean_absolute_error: 0.2634 - mean_squared_error: 0.1491 - rmse: 0.3817 -
mean_absolute_percentage_error: 146.4921
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1642 -
```

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mean_absolute_error: 0.2654 - mean_squared_error: 0.1523 - rmse: 0.3856 -
mean_absolute_percentage_error: 149.5017
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1626 -
mean_absolute_error: 0.2634 - mean_squared_error: 0.1507 - rmse: 0.3834 -
mean_absolute_percentage_error: 149.3752
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1594 -
mean_absolute_error: 0.2604 - mean_squared_error: 0.1476 - rmse: 0.3811 -
mean_absolute_percentage_error: 143.4700
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1604 -
mean_absolute_error: 0.2625 - mean_squared_error: 0.1486 - rmse: 0.3812 -
mean_absolute_percentage_error: 147.2572
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1657 -
mean_absolute_error: 0.2671 - mean_squared_error: 0.1539 - rmse: 0.3883 -
mean_absolute_percentage_error: 145.2998
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1609 -
mean_absolute_error: 0.2622 - mean_squared_error: 0.1491 - rmse: 0.3824 -
mean_absolute_percentage_error: 146.2818
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1588 -
mean_absolute_error: 0.2604 - mean_squared_error: 0.1470 - rmse: 0.3797 -
mean_absolute_percentage_error: 145.0386
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1611 -
mean_absolute_error: 0.2631 - mean_squared_error: 0.1493 - rmse: 0.3822 -
mean_absolute_percentage_error: 151.7165
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1585 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1467 - rmse: 0.3785 -
mean_absolute_percentage_error: 143.0412
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1634 -
mean_absolute_error: 0.2646 - mean_squared_error: 0.1516 - rmse: 0.3846 -
mean_absolute_percentage_error: 149.2519
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1620 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1502 - rmse: 0.3834 -
mean_absolute_percentage_error: 143.6327
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1599 -
mean_absolute_error: 0.2596 - mean_squared_error: 0.1481 - rmse: 0.3806 -
mean_absolute_percentage_error: 142.0444
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1610 -
```

```
mean_absolute_error: 0.2618 - mean_squared_error: 0.1492 - rmse: 0.3823 -
mean_absolute_percentage_error: 142.5511
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1620 -
mean_absolute_error: 0.2627 - mean_squared_error: 0.1502 - rmse: 0.3822 -
mean_absolute_percentage_error: 148.9630
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1600 -
mean_absolute_error: 0.2603 - mean_squared_error: 0.1482 - rmse: 0.3806 -
mean_absolute_percentage_error: 150.3457
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1599 -
mean_absolute_error: 0.2621 - mean_squared_error: 0.1482 - rmse: 0.3805 -
mean_absolute_percentage_error: 143.4802
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1601 -
mean_absolute_error: 0.2604 - mean_squared_error: 0.1483 - rmse: 0.3815 -
mean_absolute_percentage_error: 148.8817
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1584 -
mean_absolute_error: 0.2584 - mean_squared_error: 0.1466 - rmse: 0.3790 -
mean_absolute_percentage_error: 145.5493
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1565 -
mean_absolute_error: 0.2582 - mean_squared_error: 0.1448 - rmse: 0.3762 -
mean_absolute_percentage_error: 149.6867
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1582 -
mean_absolute_error: 0.2583 - mean_squared_error: 0.1464 - rmse: 0.3781 -
mean_absolute_percentage_error: 143.6274
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1638 -
mean_absolute_error: 0.2641 - mean_squared_error: 0.1520 - rmse: 0.3855 -
mean_absolute_percentage_error: 153.3531
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1576 -
mean_absolute_error: 0.2583 - mean_squared_error: 0.1459 - rmse: 0.3784 -
mean_absolute_percentage_error: 142.0626
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1592 -
mean_absolute_error: 0.2596 - mean_squared_error: 0.1474 - rmse: 0.3802 -
mean_absolute_percentage_error: 151.1653
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1578 -
mean_absolute_error: 0.2583 - mean_squared_error: 0.1460 - rmse: 0.3775 -
mean_absolute_percentage_error: 140.7307
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1564 -
```

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mean_absolute_error: 0.2572 - mean_squared_error: 0.1446 - rmse: 0.3772 -
mean_absolute_percentage_error: 144.4383
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1597 -
mean_absolute_error: 0.2608 - mean_squared_error: 0.1479 - rmse: 0.3805 -
mean_absolute_percentage_error: 144.9955
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1591 -
mean_absolute_error: 0.2611 - mean_squared_error: 0.1474 - rmse: 0.3790 -
mean_absolute_percentage_error: 142.3947
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1573 -
mean_absolute_error: 0.2573 - mean_squared_error: 0.1456 - rmse: 0.3776 -
mean_absolute_percentage_error: 148.3202
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1569 -
mean_absolute_error: 0.2571 - mean_squared_error: 0.1451 - rmse: 0.3766 -
mean_absolute_percentage_error: 141.2083
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1581 -
mean_absolute_error: 0.2587 - mean_squared_error: 0.1464 - rmse: 0.3773 -
mean_absolute_percentage_error: 143.0705
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1566 -
mean_absolute_error: 0.2568 - mean_squared_error: 0.1449 - rmse: 0.3767 -
mean_absolute_percentage_error: 145.3571
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1572 -
mean_absolute_error: 0.2574 - mean_squared_error: 0.1454 - rmse: 0.3765 -
mean_absolute_percentage_error: 146.4441
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1578 -
mean_absolute_error: 0.2578 - mean_squared_error: 0.1461 - rmse: 0.3773 -
mean_absolute_percentage_error: 142.8237
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1563 -
mean_absolute_error: 0.2563 - mean_squared_error: 0.1446 - rmse: 0.3767 -
mean_absolute_percentage_error: 139.6204
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1552 -
mean_absolute_error: 0.2551 - mean_squared_error: 0.1435 - rmse: 0.3743 -
mean_absolute_percentage_error: 141.5472
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1569 -
mean_absolute_error: 0.2567 - mean_squared_error: 0.1452 - rmse: 0.3772 -
mean_absolute_percentage_error: 144.7598
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1611 -
```

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mean_absolute_error: 0.2609 - mean_squared_error: 0.1494 - rmse: 0.3820 -
mean_absolute_percentage_error: 147.7459
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1552 -
mean_absolute_error: 0.2556 - mean_squared_error: 0.1435 - rmse: 0.3747 -
mean_absolute_percentage_error: 139.4705
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1570 -
mean_absolute_error: 0.2563 - mean_squared_error: 0.1453 - rmse: 0.3767 -
mean_absolute_percentage_error: 144.7815
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1560 -
mean_absolute_error: 0.2562 - mean_squared_error: 0.1442 - rmse: 0.3756 -
mean_absolute_percentage_error: 140.3587
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1537 -
mean_absolute_error: 0.2543 - mean_squared_error: 0.1419 - rmse: 0.3727 -
mean_absolute_percentage_error: 139.0376
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1554 -
mean_absolute_error: 0.2564 - mean_squared_error: 0.1436 - rmse: 0.3748 -
mean_absolute_percentage_error: 142.0380
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1575 -
mean_absolute_error: 0.2565 - mean_squared_error: 0.1458 - rmse: 0.3765 -
mean_absolute_percentage_error: 148.2877
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1577 -
mean_absolute_error: 0.2569 - mean_squared_error: 0.1460 - rmse: 0.3774 -
mean_absolute_percentage_error: 144.3447
100/100 [==============================] - 0s 2ms/step - loss: 0.1694 -
mean_absolute_error: 0.2720 - mean_squared_error: 0.1577 - rmse: 0.3920 -
mean_absolute_percentage_error: 167.6292
200/200 [==============================] - 1s 2ms/step
Regularizer chosen is L2
------------------------------------------------------------------------------
Training for fold 9 ...
Epoch 1/100
210/210 [==============================] - 1s 1ms/step - loss: 0.3585 -
mean_absolute_error: 0.4395 - mean_squared_error: 0.3487 - rmse: 0.5788 -
mean_absolute_percentage_error: 205.8125
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2460 -
mean_absolute_error: 0.3458 - mean_squared_error: 0.2352 - rmse: 0.4810 -
mean_absolute_percentage_error: 186.3632
Epoch 3/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2295 -
mean_absolute_error: 0.3306 - mean_squared_error: 0.2186 - rmse: 0.4649 -
```

```
mean_absolute_percentage_error: 185.5783
Epoch 4/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2205 -
mean_absolute_error: 0.3228 - mean_squared_error: 0.2094 - rmse: 0.4535 -
mean_absolute_percentage_error: 184.2438
Epoch 5/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2128 -
mean_absolute_error: 0.3138 - mean_squared_error: 0.2016 - rmse: 0.4448 -
mean_absolute_percentage_error: 181.9809
Epoch 6/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2078 -
mean_absolute_error: 0.3090 - mean_squared_error: 0.1966 - rmse: 0.4390 -
mean_absolute_percentage_error: 180.4025
Epoch 7/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2045 -
mean_absolute_error: 0.3050 - mean_squared_error: 0.1932 - rmse: 0.4355 -
mean_absolute_percentage_error: 170.5713
Epoch 8/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2014 -
mean_absolute_error: 0.3028 - mean_squared_error: 0.1902 - rmse: 0.4321 -
mean_absolute_percentage_error: 175.1893
Epoch 9/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1993 -
mean_absolute_error: 0.3011 - mean_squared_error: 0.1881 - rmse: 0.4297 -
mean_absolute_percentage_error: 174.9530
Epoch 10/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1977 -
mean_absolute_error: 0.2998 - mean_squared_error: 0.1864 - rmse: 0.4270 -
mean_absolute_percentage_error: 175.3082
Epoch 11/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1942 -
mean_absolute_error: 0.2958 - mean_squared_error: 0.1828 - rmse: 0.4236 -
mean_absolute_percentage_error: 170.5108
Epoch 12/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1959 -
mean_absolute_error: 0.2985 - mean_squared_error: 0.1845 - rmse: 0.4254 -
mean_absolute_percentage_error: 172.9950
Epoch 13/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1916 -
mean_absolute_error: 0.2934 - mean_squared_error: 0.1800 - rmse: 0.4206 -
mean_absolute_percentage_error: 168.2914
Epoch 14/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1906 -
mean_absolute_error: 0.2920 - mean_squared_error: 0.1790 - rmse: 0.4189 -
mean_absolute_percentage_error: 170.3195
Epoch 15/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1916 -
mean_absolute_error: 0.2942 - mean_squared_error: 0.1800 - rmse: 0.4195 -
```

```
mean_absolute_percentage_error: 168.4265
Epoch 16/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1883 -
mean_absolute_error: 0.2910 - mean_squared_error: 0.1767 - rmse: 0.4155 -
mean_absolute_percentage_error: 168.0173
Epoch 17/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1864 -
mean_absolute_error: 0.2896 - mean_squared_error: 0.1748 - rmse: 0.4137 -
mean_absolute_percentage_error: 162.9819
Epoch 18/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1860 -
mean_absolute_error: 0.2890 - mean_squared_error: 0.1743 - rmse: 0.4138 -
mean_absolute_percentage_error: 165.4386
Epoch 19/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1849 -
mean_absolute_error: 0.2876 - mean_squared_error: 0.1732 - rmse: 0.4124 -
mean_absolute_percentage_error: 160.2671
Epoch 20/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1861 -
mean_absolute_error: 0.2890 - mean_squared_error: 0.1744 - rmse: 0.4132 -
mean_absolute_percentage_error: 166.5672
Epoch 21/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1827 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1710 - rmse: 0.4098 -
mean_absolute_percentage_error: 161.8453
Epoch 22/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1798 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1681 - rmse: 0.4059 -
mean_absolute_percentage_error: 160.8079
Epoch 23/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1784 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1666 - rmse: 0.4037 -
mean_absolute_percentage_error: 158.3509
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1807 -
mean_absolute_error: 0.2836 - mean_squared_error: 0.1689 - rmse: 0.4068 -
mean_absolute_percentage_error: 159.9019
Epoch 25/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1772 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1655 - rmse: 0.4021 -
mean_absolute_percentage_error: 162.0752
Epoch 26/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1772 -
mean_absolute_error: 0.2804 - mean_squared_error: 0.1655 - rmse: 0.4032 -
mean_absolute_percentage_error: 158.7155
Epoch 27/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1802 -
mean_absolute_error: 0.2826 - mean_squared_error: 0.1686 - rmse: 0.4058 -
```

```
mean_absolute_percentage_error: 152.1725
Epoch 28/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1780 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1663 - rmse: 0.4036 -
mean_absolute_percentage_error: 163.1420
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1757 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1641 - rmse: 0.4012 -
mean_absolute_percentage_error: 161.0005
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1774 -
mean_absolute_error: 0.2804 - mean_squared_error: 0.1657 - rmse: 0.4029 -
mean_absolute_percentage_error: 159.7866
Epoch 31/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1760 -
mean_absolute_error: 0.2788 - mean_squared_error: 0.1643 - rmse: 0.4008 -
mean_absolute_percentage_error: 158.0636
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1745 -
mean_absolute_error: 0.2782 - mean_squared_error: 0.1628 - rmse: 0.3992 -
mean_absolute_percentage_error: 161.3948
Epoch 33/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1763 -
mean_absolute_error: 0.2790 - mean_squared_error: 0.1646 - rmse: 0.4016 -
mean_absolute_percentage_error: 156.3606
Epoch 34/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1753 -
mean_absolute_error: 0.2778 - mean_squared_error: 0.1637 - rmse: 0.4002 -
mean_absolute_percentage_error: 155.9444
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1739 -
mean_absolute_error: 0.2763 - mean_squared_error: 0.1623 - rmse: 0.3981 -
mean_absolute_percentage_error: 157.3699
Epoch 36/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1746 -
mean_absolute_error: 0.2779 - mean_squared_error: 0.1629 - rmse: 0.3994 -
mean_absolute_percentage_error: 161.3640
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1715 -
mean_absolute_error: 0.2739 - mean_squared_error: 0.1599 - rmse: 0.3954 -
mean_absolute_percentage_error: 156.8295
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1733 -
mean_absolute_error: 0.2766 - mean_squared_error: 0.1617 - rmse: 0.3980 -
mean_absolute_percentage_error: 157.3315
Epoch 39/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1760 -
mean_absolute_error: 0.2788 - mean_squared_error: 0.1644 - rmse: 0.4007 -
```

```
mean_absolute_percentage_error: 157.1398
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1716 -
mean_absolute_error: 0.2750 - mean_squared_error: 0.1600 - rmse: 0.3955 -
mean_absolute_percentage_error: 156.6063
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1723 -
mean_absolute_error: 0.2761 - mean_squared_error: 0.1607 - rmse: 0.3970 -
mean_absolute_percentage_error: 155.1234
Epoch 42/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1727 -
mean_absolute_error: 0.2746 - mean_squared_error: 0.1611 - rmse: 0.3976 -
mean_absolute_percentage_error: 152.8046
Epoch 43/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1736 -
mean_absolute_error: 0.2771 - mean_squared_error: 0.1620 - rmse: 0.3978 -
mean_absolute_percentage_error: 156.2826
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1699 -
mean_absolute_error: 0.2721 - mean_squared_error: 0.1583 - rmse: 0.3941 -
mean_absolute_percentage_error: 148.9109
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1692 -
mean_absolute_error: 0.2713 - mean_squared_error: 0.1576 - rmse: 0.3921 -
mean_absolute_percentage_error: 152.8702
Epoch 46/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1703 -
mean_absolute_error: 0.2734 - mean_squared_error: 0.1588 - rmse: 0.3943 -
mean_absolute_percentage_error: 156.5843
Epoch 47/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1703 -
mean_absolute_error: 0.2726 - mean_squared_error: 0.1587 - rmse: 0.3939 -
mean_absolute_percentage_error: 157.8961
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1686 -
mean_absolute_error: 0.2709 - mean_squared_error: 0.1570 - rmse: 0.3920 -
mean_absolute_percentage_error: 154.3538
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1680 -
mean_absolute_error: 0.2697 - mean_squared_error: 0.1564 - rmse: 0.3911 -
mean_absolute_percentage_error: 153.9128
Epoch 50/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1696 -
mean_absolute_error: 0.2714 - mean_squared_error: 0.1580 - rmse: 0.3927 -
mean_absolute_percentage_error: 152.9015
Epoch 51/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1710 -
mean_absolute_error: 0.2724 - mean_squared_error: 0.1594 - rmse: 0.3948 -
```

```
mean_absolute_percentage_error: 156.5489
Epoch 52/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1680 -
mean_absolute_error: 0.2708 - mean_squared_error: 0.1564 - rmse: 0.3907 -
mean_absolute_percentage_error: 150.7433
Epoch 53/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1678 -
mean_absolute_error: 0.2697 - mean_squared_error: 0.1562 - rmse: 0.3904 -
mean_absolute_percentage_error: 154.8027
Epoch 54/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1690 -
mean_absolute_error: 0.2711 - mean_squared_error: 0.1574 - rmse: 0.3924 -
mean_absolute_percentage_error: 156.8973
Epoch 55/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1647 -
mean_absolute_error: 0.2671 - mean_squared_error: 0.1532 - rmse: 0.3880 -
mean_absolute_percentage_error: 153.8306
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1668 -
mean_absolute_error: 0.2684 - mean_squared_error: 0.1553 - rmse: 0.3890 -
mean_absolute_percentage_error: 150.7268
Epoch 57/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1654 -
mean_absolute_error: 0.2678 - mean_squared_error: 0.1539 - rmse: 0.3882 -
mean_absolute_percentage_error: 151.3556
Epoch 58/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1649 -
mean_absolute_error: 0.2676 - mean_squared_error: 0.1534 - rmse: 0.3868 -
mean_absolute_percentage_error: 154.3511
Epoch 59/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1662 -
mean_absolute_error: 0.2690 - mean_squared_error: 0.1547 - rmse: 0.3882 -
mean_absolute_percentage_error: 150.4260
Epoch 60/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1663 -
mean_absolute_error: 0.2689 - mean_squared_error: 0.1548 - rmse: 0.3892 -
mean_absolute_percentage_error: 155.8603
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1695 -
mean_absolute_error: 0.2715 - mean_squared_error: 0.1580 - rmse: 0.3938 -
mean_absolute_percentage_error: 154.6625
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1689 -
mean_absolute_error: 0.2707 - mean_squared_error: 0.1574 - rmse: 0.3921 -
mean_absolute_percentage_error: 157.6482
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1642 -
mean_absolute_error: 0.2666 - mean_squared_error: 0.1528 - rmse: 0.3863 -
```

```
mean_absolute_percentage_error: 149.5693
Epoch 64/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1671 -
mean_absolute_error: 0.2689 - mean_squared_error: 0.1557 - rmse: 0.3898 -
mean_absolute_percentage_error: 156.7170
Epoch 65/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1650 -
mean_absolute_error: 0.2664 - mean_squared_error: 0.1535 - rmse: 0.3877 -
mean_absolute_percentage_error: 152.8488
Epoch 66/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1643 -
mean_absolute_error: 0.2662 - mean_squared_error: 0.1528 - rmse: 0.3867 -
mean_absolute_percentage_error: 148.3992
Epoch 67/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1626 -
mean_absolute_error: 0.2660 - mean_squared_error: 0.1512 - rmse: 0.3844 -
mean_absolute_percentage_error: 149.2655
Epoch 68/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1635 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1521 - rmse: 0.3867 -
mean_absolute_percentage_error: 151.6334
Epoch 69/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1670 -
mean_absolute_error: 0.2684 - mean_squared_error: 0.1555 - rmse: 0.3900 -
mean_absolute_percentage_error: 152.4706
Epoch 70/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1627 -
mean_absolute_error: 0.2651 - mean_squared_error: 0.1513 - rmse: 0.3849 -
mean_absolute_percentage_error: 152.0946
Epoch 71/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1623 -
mean_absolute_error: 0.2652 - mean_squared_error: 0.1508 - rmse: 0.3843 -
mean_absolute_percentage_error: 153.2890
Epoch 72/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1631 -
mean_absolute_error: 0.2649 - mean_squared_error: 0.1516 - rmse: 0.3848 -
mean_absolute_percentage_error: 150.0186
Epoch 73/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1640 -
mean_absolute_error: 0.2652 - mean_squared_error: 0.1526 - rmse: 0.3865 -
mean_absolute_percentage_error: 154.2045
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1648 -
mean_absolute_error: 0.2675 - mean_squared_error: 0.1533 - rmse: 0.3872 -
mean_absolute_percentage_error: 151.6054
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1622 -
mean_absolute_error: 0.2638 - mean_squared_error: 0.1508 - rmse: 0.3846 -
```

```
mean_absolute_percentage_error: 154.7982
Epoch 76/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1624 -
mean_absolute_error: 0.2648 - mean_squared_error: 0.1509 - rmse: 0.3850 -
mean_absolute_percentage_error: 152.3273
Epoch 77/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1636 -
mean_absolute_error: 0.2655 - mean_squared_error: 0.1522 - rmse: 0.3852 -
mean_absolute_percentage_error: 148.5392
Epoch 78/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1614 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1499 - rmse: 0.3828 -
mean_absolute_percentage_error: 156.1740
Epoch 79/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1631 -
mean_absolute_error: 0.2645 - mean_squared_error: 0.1517 - rmse: 0.3847 -
mean_absolute_percentage_error: 151.6469
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1614 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1499 - rmse: 0.3836 -
mean_absolute_percentage_error: 151.2447
Epoch 81/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1645 -
mean_absolute_error: 0.2670 - mean_squared_error: 0.1530 - rmse: 0.3871 -
mean_absolute_percentage_error: 155.8665
Epoch 82/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1635 -
mean_absolute_error: 0.2647 - mean_squared_error: 0.1520 - rmse: 0.3845 -
mean_absolute_percentage_error: 147.8666
Epoch 83/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1605 -
mean_absolute_error: 0.2611 - mean_squared_error: 0.1490 - rmse: 0.3806 -
mean_absolute_percentage_error: 147.8843
Epoch 84/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1618 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1502 - rmse: 0.3833 -
mean_absolute_percentage_error: 156.0429
Epoch 85/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1615 -
mean_absolute_error: 0.2625 - mean_squared_error: 0.1500 - rmse: 0.3836 -
mean_absolute_percentage_error: 144.1738
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1622 -
mean_absolute_error: 0.2631 - mean_squared_error: 0.1507 - rmse: 0.3833 -
mean_absolute_percentage_error: 153.5266
Epoch 87/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1591 -
mean_absolute_error: 0.2605 - mean_squared_error: 0.1476 - rmse: 0.3800 -
```

```
mean_absolute_percentage_error: 153.2478
Epoch 88/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1617 -
mean_absolute_error: 0.2627 - mean_squared_error: 0.1501 - rmse: 0.3828 -
mean_absolute_percentage_error: 145.8741
Epoch 89/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1609 -
mean_absolute_error: 0.2613 - mean_squared_error: 0.1494 - rmse: 0.3822 -
mean_absolute_percentage_error: 153.0812
Epoch 90/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1617 -
mean_absolute_error: 0.2635 - mean_squared_error: 0.1502 - rmse: 0.3824 -
mean_absolute_percentage_error: 150.9272
Epoch 91/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1639 -
mean_absolute_error: 0.2646 - mean_squared_error: 0.1524 - rmse: 0.3860 -
mean_absolute_percentage_error: 153.5570
Epoch 92/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1601 -
mean_absolute_error: 0.2607 - mean_squared_error: 0.1486 - rmse: 0.3809 -
mean_absolute_percentage_error: 150.5728
Epoch 93/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1601 -
mean_absolute_error: 0.2624 - mean_squared_error: 0.1486 - rmse: 0.3811 -
mean_absolute_percentage_error: 150.0796
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1595 -
mean_absolute_error: 0.2601 - mean_squared_error: 0.1480 - rmse: 0.3810 -
mean_absolute_percentage_error: 149.8518
Epoch 95/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1595 -
mean_absolute_error: 0.2600 - mean_squared_error: 0.1480 - rmse: 0.3802 -
mean_absolute_percentage_error: 147.9601
Epoch 96/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1612 -
mean_absolute_error: 0.2630 - mean_squared_error: 0.1496 - rmse: 0.3820 -
mean_absolute_percentage_error: 153.1510
Epoch 97/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1578 -
mean_absolute_error: 0.2595 - mean_squared_error: 0.1463 - rmse: 0.3770 -
mean_absolute_percentage_error: 155.5789
Epoch 98/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1625 -
mean_absolute_error: 0.2631 - mean_squared_error: 0.1510 - rmse: 0.3838 -
mean_absolute_percentage_error: 150.7380
Epoch 99/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1591 -
mean_absolute_error: 0.2593 - mean_squared_error: 0.1475 - rmse: 0.3799 -
```

```
mean_absolute_percentage_error: 146.2443
Epoch 100/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1578 -
mean_absolute_error: 0.2594 - mean_squared_error: 0.1463 - rmse: 0.3779 -
mean_absolute_percentage_error: 151.4678
100/100 [==============================] - 0s 1ms/step - loss: 0.1659 -
mean_absolute_error: 0.2599 - mean_squared_error: 0.1543 - rmse: 0.3867 -
mean_absolute_percentage_error: 148.3445
200/200 [==============================] - 0s 968us/step
Regularizer chosen is L2
-------------------------------------------------------------------------------
Training for fold 10 ...
Epoch 1/100
210/210 [==============================] - 1s 1ms/step - loss: 0.3523 -
mean_absolute_error: 0.4410 - mean_squared_error: 0.3424 - rmse: 0.5748 -
mean_absolute_percentage_error: 189.1951
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2406 -
mean_absolute_error: 0.3400 - mean_squared_error: 0.2297 - rmse: 0.4756 -
mean_absolute_percentage_error: 186.1202
Epoch 3/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2245 -
mean_absolute_error: 0.3253 - mean_squared_error: 0.2136 - rmse: 0.4592 -
mean_absolute_percentage_error: 190.4005
Epoch 4/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2142 -
mean_absolute_error: 0.3152 - mean_squared_error: 0.2033 - rmse: 0.4466 -
mean_absolute_percentage_error: 186.8311
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2109 -
mean_absolute_error: 0.3118 - mean_squared_error: 0.1999 - rmse: 0.4430 -
mean_absolute_percentage_error: 189.8540
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2040 -
mean_absolute_error: 0.3052 - mean_squared_error: 0.1929 - rmse: 0.4353 -
mean_absolute_percentage_error: 185.5418
Epoch 7/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2007 -
mean_absolute_error: 0.3018 - mean_squared_error: 0.1895 - rmse: 0.4312 -
mean_absolute_percentage_error: 181.3169
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1996 -
mean_absolute_error: 0.3006 - mean_squared_error: 0.1884 - rmse: 0.4295 -
mean_absolute_percentage_error: 178.2522
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1938 -
mean_absolute_error: 0.2943 - mean_squared_error: 0.1825 - rmse: 0.4227 -
mean_absolute_percentage_error: 170.6253
```

```
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1921 -
mean_absolute_error: 0.2929 - mean_squared_error: 0.1808 - rmse: 0.4215 -
mean_absolute_percentage_error: 174.9456
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1908 -
mean_absolute_error: 0.2934 - mean_squared_error: 0.1794 - rmse: 0.4204 -
mean_absolute_percentage_error: 166.6864
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1885 -
mean_absolute_error: 0.2902 - mean_squared_error: 0.1771 - rmse: 0.4168 -
mean_absolute_percentage_error: 167.2412
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1861 -
mean_absolute_error: 0.2871 - mean_squared_error: 0.1746 - rmse: 0.4135 -
mean_absolute_percentage_error: 173.4353
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1843 -
mean_absolute_error: 0.2857 - mean_squared_error: 0.1728 - rmse: 0.4102 -
mean_absolute_percentage_error: 172.3238
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1849 -
mean_absolute_error: 0.2874 - mean_squared_error: 0.1734 - rmse: 0.4125 -
mean_absolute_percentage_error: 165.9501
Epoch 16/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1830 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1715 - rmse: 0.4097 -
mean_absolute_percentage_error: 167.3933
Epoch 17/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1827 -
mean_absolute_error: 0.2840 - mean_squared_error: 0.1711 - rmse: 0.4091 -
mean_absolute_percentage_error: 161.8396
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1793 -
mean_absolute_error: 0.2793 - mean_squared_error: 0.1677 - rmse: 0.4049 -
mean_absolute_percentage_error: 160.6901
Epoch 19/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1792 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1676 - rmse: 0.4047 -
mean_absolute_percentage_error: 161.9519
Epoch 20/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1789 -
mean_absolute_error: 0.2795 - mean_squared_error: 0.1674 - rmse: 0.4054 -
mean_absolute_percentage_error: 158.7036
Epoch 21/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1815 -
mean_absolute_error: 0.2821 - mean_squared_error: 0.1700 - rmse: 0.4083 -
mean_absolute_percentage_error: 160.1466
```

```
Epoch 22/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1771 -
mean_absolute_error: 0.2782 - mean_squared_error: 0.1655 - rmse: 0.4024 -
mean_absolute_percentage_error: 159.5303
Epoch 23/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1754 -
mean_absolute_error: 0.2772 - mean_squared_error: 0.1639 - rmse: 0.4004 -
mean_absolute_percentage_error: 159.4115
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1741 -
mean_absolute_error: 0.2751 - mean_squared_error: 0.1626 - rmse: 0.3990 -
mean_absolute_percentage_error: 154.8371
Epoch 25/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1745 -
mean_absolute_error: 0.2754 - mean_squared_error: 0.1630 - rmse: 0.4004 -
mean_absolute_percentage_error: 156.5130
Epoch 26/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1768 -
mean_absolute_error: 0.2779 - mean_squared_error: 0.1653 - rmse: 0.4018 -
mean_absolute_percentage_error: 158.8785
Epoch 27/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1713 -
mean_absolute_error: 0.2724 - mean_squared_error: 0.1598 - rmse: 0.3956 -
mean_absolute_percentage_error: 154.0964
Epoch 28/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1724 -
mean_absolute_error: 0.2735 - mean_squared_error: 0.1609 - rmse: 0.3968 -
mean_absolute_percentage_error: 161.7136
Epoch 29/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1710 -
mean_absolute_error: 0.2714 - mean_squared_error: 0.1595 - rmse: 0.3950 -
mean_absolute_percentage_error: 151.9604
Epoch 30/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1701 -
mean_absolute_error: 0.2709 - mean_squared_error: 0.1587 - rmse: 0.3946 -
mean_absolute_percentage_error: 155.7685
Epoch 31/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1693 -
mean_absolute_error: 0.2706 - mean_squared_error: 0.1579 - rmse: 0.3932 -
mean_absolute_percentage_error: 158.5642
Epoch 32/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1690 -
mean_absolute_error: 0.2698 - mean_squared_error: 0.1575 - rmse: 0.3933 -
mean_absolute_percentage_error: 157.2376
Epoch 33/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1719 -
mean_absolute_error: 0.2743 - mean_squared_error: 0.1605 - rmse: 0.3967 -
mean_absolute_percentage_error: 157.5458
```

```
Epoch 34/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1725 -
mean_absolute_error: 0.2734 - mean_squared_error: 0.1611 - rmse: 0.3969 -
mean_absolute_percentage_error: 157.5701
Epoch 35/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1699 -
mean_absolute_error: 0.2706 - mean_squared_error: 0.1584 - rmse: 0.3931 -
mean_absolute_percentage_error: 155.4675
Epoch 36/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1681 -
mean_absolute_error: 0.2685 - mean_squared_error: 0.1566 - rmse: 0.3913 -
mean_absolute_percentage_error: 158.0702
Epoch 37/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1697 -
mean_absolute_error: 0.2712 - mean_squared_error: 0.1583 - rmse: 0.3934 -
mean_absolute_percentage_error: 160.3545
Epoch 38/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1668 -
mean_absolute_error: 0.2683 - mean_squared_error: 0.1553 - rmse: 0.3901 -
mean_absolute_percentage_error: 153.1386
Epoch 39/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1666 -
mean_absolute_error: 0.2677 - mean_squared_error: 0.1552 - rmse: 0.3899 -
mean_absolute_percentage_error: 156.9570
Epoch 40/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1655 -
mean_absolute_error: 0.2666 - mean_squared_error: 0.1540 - rmse: 0.3898 -
mean_absolute_percentage_error: 159.4767
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1671 -
mean_absolute_error: 0.2689 - mean_squared_error: 0.1557 - rmse: 0.3892 -
mean_absolute_percentage_error: 152.3472
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1688 -
mean_absolute_error: 0.2701 - mean_squared_error: 0.1574 - rmse: 0.3920 -
mean_absolute_percentage_error: 152.3740
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1649 -
mean_absolute_error: 0.2658 - mean_squared_error: 0.1535 - rmse: 0.3875 -
mean_absolute_percentage_error: 150.7597
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1642 -
mean_absolute_error: 0.2652 - mean_squared_error: 0.1528 - rmse: 0.3864 -
mean_absolute_percentage_error: 151.7338
Epoch 45/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1642 -
mean_absolute_error: 0.2663 - mean_squared_error: 0.1528 - rmse: 0.3857 -
mean_absolute_percentage_error: 155.4558
```

```
Epoch 46/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1644 -
mean_absolute_error: 0.2652 - mean_squared_error: 0.1531 - rmse: 0.3864 -
mean_absolute_percentage_error: 152.9763
Epoch 47/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1627 -
mean_absolute_error: 0.2627 - mean_squared_error: 0.1514 - rmse: 0.3850 -
mean_absolute_percentage_error: 147.1135
Epoch 48/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1641 -
mean_absolute_error: 0.2661 - mean_squared_error: 0.1528 - rmse: 0.3863 -
mean_absolute_percentage_error: 152.3433
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1658 -
mean_absolute_error: 0.2665 - mean_squared_error: 0.1544 - rmse: 0.3883 -
mean_absolute_percentage_error: 153.7497
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1666 -
mean_absolute_error: 0.2671 - mean_squared_error: 0.1553 - rmse: 0.3891 -
mean_absolute_percentage_error: 149.5073
Epoch 51/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1618 -
mean_absolute_error: 0.2628 - mean_squared_error: 0.1504 - rmse: 0.3833 -
mean_absolute_percentage_error: 149.4599
Epoch 52/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1625 -
mean_absolute_error: 0.2635 - mean_squared_error: 0.1511 - rmse: 0.3850 -
mean_absolute_percentage_error: 155.1474
Epoch 53/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1644 -
mean_absolute_error: 0.2666 - mean_squared_error: 0.1530 - rmse: 0.3868 -
mean_absolute_percentage_error: 149.7785
Epoch 54/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1619 -
mean_absolute_error: 0.2627 - mean_squared_error: 0.1505 - rmse: 0.3839 -
mean_absolute_percentage_error: 151.6342
Epoch 55/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1638 -
mean_absolute_error: 0.2645 - mean_squared_error: 0.1524 - rmse: 0.3857 -
mean_absolute_percentage_error: 155.3951
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1620 -
mean_absolute_error: 0.2623 - mean_squared_error: 0.1506 - rmse: 0.3831 -
mean_absolute_percentage_error: 155.2751
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1639 -
mean_absolute_error: 0.2650 - mean_squared_error: 0.1525 - rmse: 0.3859 -
mean_absolute_percentage_error: 148.6020
```

```
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1583 -
mean_absolute_error: 0.2595 - mean_squared_error: 0.1469 - rmse: 0.3786 -
mean_absolute_percentage_error: 150.9622
Epoch 59/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1582 -
mean_absolute_error: 0.2591 - mean_squared_error: 0.1468 - rmse: 0.3793 -
mean_absolute_percentage_error: 150.1444
Epoch 60/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1596 -
mean_absolute_error: 0.2609 - mean_squared_error: 0.1483 - rmse: 0.3815 -
mean_absolute_percentage_error: 150.1704
Epoch 61/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1646 -
mean_absolute_error: 0.2654 - mean_squared_error: 0.1533 - rmse: 0.3875 -
mean_absolute_percentage_error: 153.0615
Epoch 62/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1599 -
mean_absolute_error: 0.2608 - mean_squared_error: 0.1485 - rmse: 0.3810 -
mean_absolute_percentage_error: 146.6658
Epoch 63/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1600 -
mean_absolute_error: 0.2623 - mean_squared_error: 0.1487 - rmse: 0.3821 -
mean_absolute_percentage_error: 146.8273
Epoch 64/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1600 -
mean_absolute_error: 0.2610 - mean_squared_error: 0.1486 - rmse: 0.3812 -
mean_absolute_percentage_error: 149.1649
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1581 -
mean_absolute_error: 0.2591 - mean_squared_error: 0.1468 - rmse: 0.3789 -
mean_absolute_percentage_error: 149.1702
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1575 -
mean_absolute_error: 0.2582 - mean_squared_error: 0.1461 - rmse: 0.3772 -
mean_absolute_percentage_error: 146.4603
Epoch 67/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1578 -
mean_absolute_error: 0.2591 - mean_squared_error: 0.1465 - rmse: 0.3777 -
mean_absolute_percentage_error: 147.7756
Epoch 68/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1580 -
mean_absolute_error: 0.2575 - mean_squared_error: 0.1467 - rmse: 0.3786 -
mean_absolute_percentage_error: 142.9027
Epoch 69/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1567 -
mean_absolute_error: 0.2577 - mean_squared_error: 0.1455 - rmse: 0.3765 -
mean_absolute_percentage_error: 146.9249
```

```
Epoch 70/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1599 -
mean_absolute_error: 0.2603 - mean_squared_error: 0.1486 - rmse: 0.3807 -
mean_absolute_percentage_error: 148.6578
Epoch 71/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1618 -
mean_absolute_error: 0.2632 - mean_squared_error: 0.1505 - rmse: 0.3845 -
mean_absolute_percentage_error: 148.4704
Epoch 72/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1576 -
mean_absolute_error: 0.2578 - mean_squared_error: 0.1463 - rmse: 0.3776 -
mean_absolute_percentage_error: 147.5966
Epoch 73/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1583 -
mean_absolute_error: 0.2584 - mean_squared_error: 0.1471 - rmse: 0.3792 -
mean_absolute_percentage_error: 148.2915
Epoch 74/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1573 -
mean_absolute_error: 0.2578 - mean_squared_error: 0.1460 - rmse: 0.3783 -
mean_absolute_percentage_error: 145.7167
Epoch 75/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1577 -
mean_absolute_error: 0.2586 - mean_squared_error: 0.1464 - rmse: 0.3778 -
mean_absolute_percentage_error: 148.9312
Epoch 76/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1563 -
mean_absolute_error: 0.2574 - mean_squared_error: 0.1450 - rmse: 0.3768 -
mean_absolute_percentage_error: 146.5743
Epoch 77/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1576 -
mean_absolute_error: 0.2585 - mean_squared_error: 0.1462 - rmse: 0.3779 -
mean_absolute_percentage_error: 143.4171
Epoch 78/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1603 -
mean_absolute_error: 0.2607 - mean_squared_error: 0.1490 - rmse: 0.3821 -
mean_absolute_percentage_error: 149.8651
Epoch 79/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1596 -
mean_absolute_error: 0.2602 - mean_squared_error: 0.1483 - rmse: 0.3806 -
mean_absolute_percentage_error: 146.4008
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1559 -
mean_absolute_error: 0.2563 - mean_squared_error: 0.1446 - rmse: 0.3759 -
mean_absolute_percentage_error: 145.2379
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1566 -
mean_absolute_error: 0.2567 - mean_squared_error: 0.1453 - rmse: 0.3763 -
mean_absolute_percentage_error: 149.5519
```

```
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1547 -
mean_absolute_error: 0.2551 - mean_squared_error: 0.1433 - rmse: 0.3734 -
mean_absolute_percentage_error: 148.2307
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1570 -
mean_absolute_error: 0.2568 - mean_squared_error: 0.1457 - rmse: 0.3769 -
mean_absolute_percentage_error: 143.3188
Epoch 84/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1565 -
mean_absolute_error: 0.2570 - mean_squared_error: 0.1452 - rmse: 0.3769 -
mean_absolute_percentage_error: 146.9486
Epoch 85/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1571 -
mean_absolute_error: 0.2579 - mean_squared_error: 0.1458 - rmse: 0.3780 -
mean_absolute_percentage_error: 144.6694
Epoch 86/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1581 -
mean_absolute_error: 0.2581 - mean_squared_error: 0.1468 - rmse: 0.3793 -
mean_absolute_percentage_error: 150.9308
Epoch 87/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1587 -
mean_absolute_error: 0.2590 - mean_squared_error: 0.1474 - rmse: 0.3797 -
mean_absolute_percentage_error: 148.9212
Epoch 88/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1572 -
mean_absolute_error: 0.2566 - mean_squared_error: 0.1459 - rmse: 0.3773 -
mean_absolute_percentage_error: 147.1255
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1569 -
mean_absolute_error: 0.2574 - mean_squared_error: 0.1456 - rmse: 0.3770 -
mean_absolute_percentage_error: 142.3946
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1565 -
mean_absolute_error: 0.2567 - mean_squared_error: 0.1451 - rmse: 0.3761 -
mean_absolute_percentage_error: 143.5425
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1560 -
mean_absolute_error: 0.2558 - mean_squared_error: 0.1447 - rmse: 0.3767 -
mean_absolute_percentage_error: 146.4290
Epoch 92/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1550 -
mean_absolute_error: 0.2563 - mean_squared_error: 0.1436 - rmse: 0.3750 -
mean_absolute_percentage_error: 145.7126
Epoch 93/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1551 -
mean_absolute_error: 0.2554 - mean_squared_error: 0.1437 - rmse: 0.3744 -
mean_absolute_percentage_error: 147.3756
```
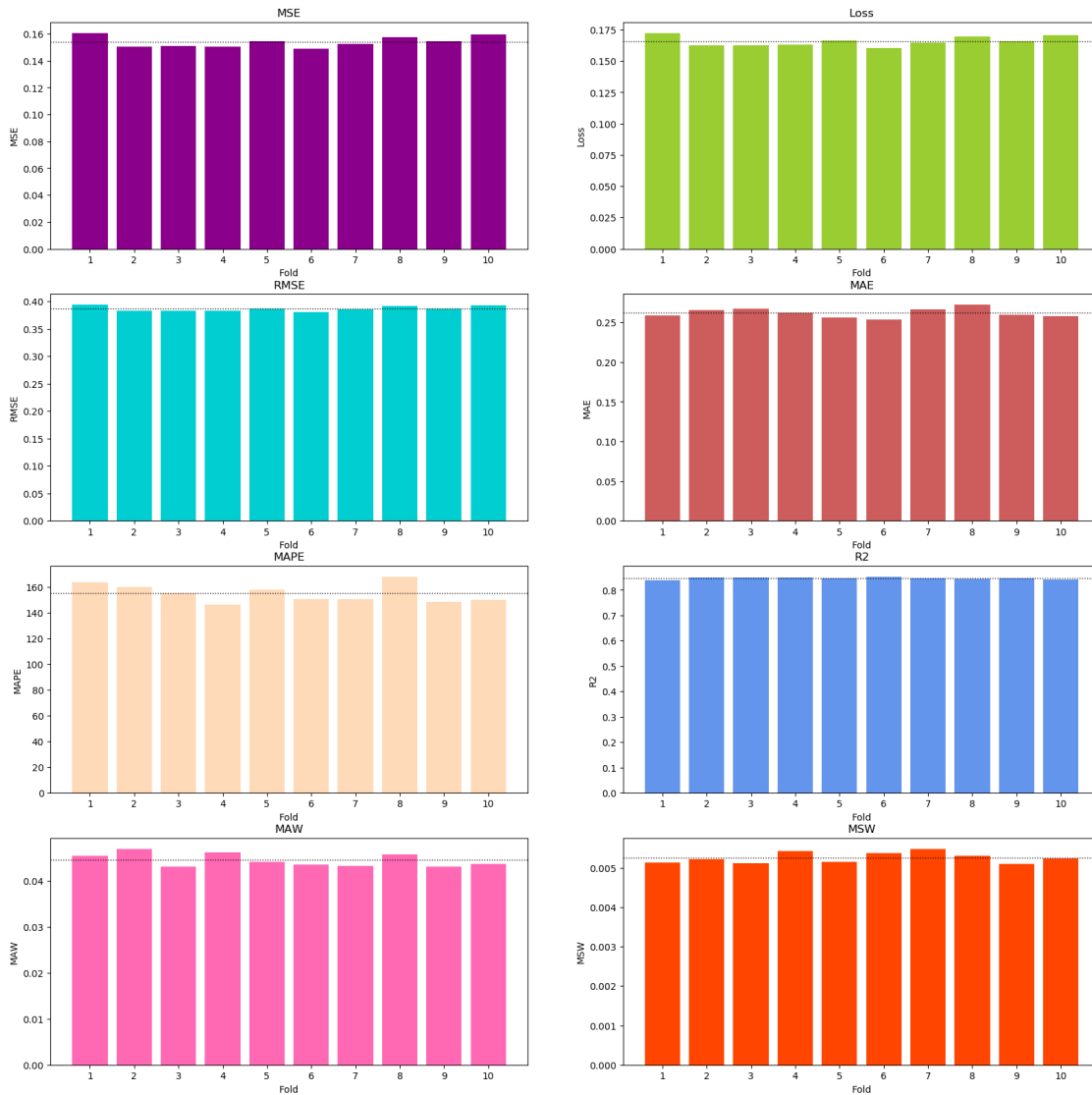
```
Epoch 94/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1557 -
mean_absolute_error: 0.2561 - mean_squared_error: 0.1443 - rmse: 0.3754 -
mean_absolute_percentage_error: 146.5350
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1557 -
mean_absolute_error: 0.2563 - mean_squared_error: 0.1443 - rmse: 0.3755 -
mean_absolute_percentage_error: 146.7817
Epoch 96/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1551 -
mean_absolute_error: 0.2553 - mean_squared_error: 0.1437 - rmse: 0.3757 -
mean_absolute_percentage_error: 146.8592
Epoch 97/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1549 -
mean_absolute_error: 0.2551 - mean_squared_error: 0.1435 - rmse: 0.3741 -
mean_absolute_percentage_error: 145.8322
Epoch 98/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1534 -
mean_absolute_error: 0.2548 - mean_squared_error: 0.1420 - rmse: 0.3728 -
mean_absolute_percentage_error: 145.1925
Epoch 99/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1535 -
mean_absolute_error: 0.2553 - mean_squared_error: 0.1421 - rmse: 0.3730 -
mean_absolute_percentage_error: 149.8220
Epoch 100/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1562 -
mean_absolute_error: 0.2555 - mean_squared_error: 0.1448 - rmse: 0.3762 -
mean_absolute_percentage_error: 140.9520
100/100 [==============================] - 0s 1ms/step - loss: 0.1709 -
mean_absolute_error: 0.2575 - mean_squared_error: 0.1595 - rmse: 0.3925 -
mean_absolute_percentage_error: 149.6678
200/200 [==============================] - 0s 1ms/step
```
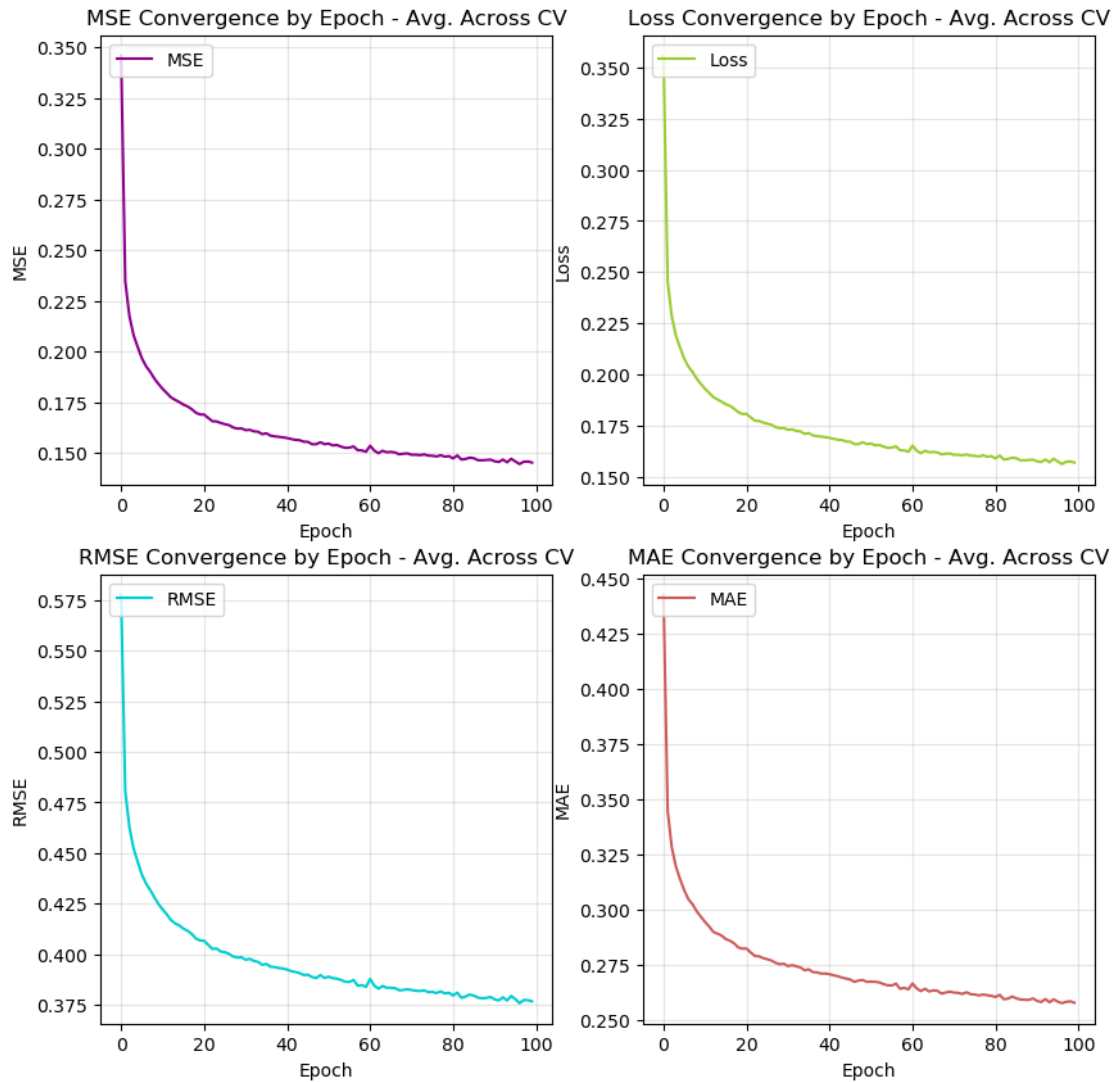
[20]:
```
#Graph for Measures
figure_l2 = graph_metric_by_fold(compendium_l2)
plt.show()
```

```
[21]:  #Graph for Convergence
       figure_l2 = graph_epoch_convergence(compendium_l2)
       plt.show()
```

MSE Convergence by Epoch - Avg. Across CV

Loss Convergence by Epoch - Avg. Across CV

RMSE Convergence by Epoch - Avg. Across CV

MAE Convergence by Epoch - Avg. Across CV

7 L1L2 Regularization

```
[22]: #Creating the MLP
compendium_mixed = folds_and_model(x_tr, y_tr, x_ts, y_ts,
                          neurons = 41, regularizer = 'Mixed', input_no = 81,
                          batch = 64, epochs_no = 100)
```

```
Regularizer chosen is L1L2
----------------------------------------------------------------------------
Training for fold 1 ...
Epoch 1/100
210/210 [==============================] - 1s 1ms/step - loss: 0.4604 -
mean_absolute_error: 0.4475 - mean_squared_error: 0.3523 - rmse: 0.5833 -
```

```
mean_absolute_percentage_error: 212.3537
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3125 -
mean_absolute_error: 0.3567 - mean_squared_error: 0.2461 - rmse: 0.4919 -
mean_absolute_percentage_error: 187.4679
Epoch 3/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2832 -
mean_absolute_error: 0.3402 - mean_squared_error: 0.2309 - rmse: 0.4765 -
mean_absolute_percentage_error: 189.5739
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2700 -
mean_absolute_error: 0.3370 - mean_squared_error: 0.2247 - rmse: 0.4694 -
mean_absolute_percentage_error: 189.6677
Epoch 5/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2596 -
mean_absolute_error: 0.3301 - mean_squared_error: 0.2178 - rmse: 0.4619 -
mean_absolute_percentage_error: 187.6602
Epoch 6/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2514 -
mean_absolute_error: 0.3247 - mean_squared_error: 0.2122 - rmse: 0.4572 -
mean_absolute_percentage_error: 186.8194
Epoch 7/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2456 -
mean_absolute_error: 0.3209 - mean_squared_error: 0.2081 - rmse: 0.4522 -
mean_absolute_percentage_error: 187.8604
Epoch 8/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2417 -
mean_absolute_error: 0.3187 - mean_squared_error: 0.2052 - rmse: 0.4493 -
mean_absolute_percentage_error: 186.2835
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2401 -
mean_absolute_error: 0.3190 - mean_squared_error: 0.2049 - rmse: 0.4488 -
mean_absolute_percentage_error: 180.8165
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2393 -
mean_absolute_error: 0.3182 - mean_squared_error: 0.2046 - rmse: 0.4487 -
mean_absolute_percentage_error: 181.8690
Epoch 11/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2349 -
mean_absolute_error: 0.3135 - mean_squared_error: 0.2009 - rmse: 0.4452 -
mean_absolute_percentage_error: 181.5285
Epoch 12/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2339 -
mean_absolute_error: 0.3143 - mean_squared_error: 0.2004 - rmse: 0.4429 -
mean_absolute_percentage_error: 183.7668
Epoch 13/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2293 -
mean_absolute_error: 0.3106 - mean_squared_error: 0.1961 - rmse: 0.4389 -
```

```
mean_absolute_percentage_error: 178.6537
Epoch 14/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2294 -
mean_absolute_error: 0.3099 - mean_squared_error: 0.1965 - rmse: 0.4395 -
mean_absolute_percentage_error: 178.4037
Epoch 15/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2273 -
mean_absolute_error: 0.3079 - mean_squared_error: 0.1949 - rmse: 0.4372 -
mean_absolute_percentage_error: 180.5442
Epoch 16/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2266 -
mean_absolute_error: 0.3075 - mean_squared_error: 0.1943 - rmse: 0.4370 -
mean_absolute_percentage_error: 166.3111
Epoch 17/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2253 -
mean_absolute_error: 0.3067 - mean_squared_error: 0.1935 - rmse: 0.4365 -
mean_absolute_percentage_error: 178.1228
Epoch 18/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2232 -
mean_absolute_error: 0.3048 - mean_squared_error: 0.1915 - rmse: 0.4329 -
mean_absolute_percentage_error: 174.5952
Epoch 19/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2229 -
mean_absolute_error: 0.3040 - mean_squared_error: 0.1916 - rmse: 0.4340 -
mean_absolute_percentage_error: 174.7315
Epoch 20/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2190 -
mean_absolute_error: 0.3015 - mean_squared_error: 0.1880 - rmse: 0.4297 -
mean_absolute_percentage_error: 170.2029
Epoch 21/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2205 -
mean_absolute_error: 0.3025 - mean_squared_error: 0.1896 - rmse: 0.4297 -
mean_absolute_percentage_error: 171.2059
Epoch 22/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2183 -
mean_absolute_error: 0.2998 - mean_squared_error: 0.1878 - rmse: 0.4286 -
mean_absolute_percentage_error: 168.2468
Epoch 23/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2178 -
mean_absolute_error: 0.3009 - mean_squared_error: 0.1875 - rmse: 0.4297 -
mean_absolute_percentage_error: 170.2819
Epoch 24/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2142 -
mean_absolute_error: 0.2969 - mean_squared_error: 0.1843 - rmse: 0.4247 -
mean_absolute_percentage_error: 172.6366
Epoch 25/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2145 -
mean_absolute_error: 0.2975 - mean_squared_error: 0.1850 - rmse: 0.4262 -
```

```
mean_absolute_percentage_error: 161.1314
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2136 -
mean_absolute_error: 0.2976 - mean_squared_error: 0.1842 - rmse: 0.4253 -
mean_absolute_percentage_error: 164.8581
Epoch 27/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2122 -
mean_absolute_error: 0.2968 - mean_squared_error: 0.1831 - rmse: 0.4228 -
mean_absolute_percentage_error: 166.9976
Epoch 28/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2115 -
mean_absolute_error: 0.2965 - mean_squared_error: 0.1828 - rmse: 0.4227 -
mean_absolute_percentage_error: 171.9895
Epoch 29/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2136 -
mean_absolute_error: 0.2980 - mean_squared_error: 0.1851 - rmse: 0.4258 -
mean_absolute_percentage_error: 167.1924
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2105 -
mean_absolute_error: 0.2950 - mean_squared_error: 0.1821 - rmse: 0.4233 -
mean_absolute_percentage_error: 172.9965
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2098 -
mean_absolute_error: 0.2952 - mean_squared_error: 0.1817 - rmse: 0.4215 -
mean_absolute_percentage_error: 172.2270
Epoch 32/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2098 -
mean_absolute_error: 0.2951 - mean_squared_error: 0.1818 - rmse: 0.4220 -
mean_absolute_percentage_error: 166.2500
Epoch 33/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2097 -
mean_absolute_error: 0.2951 - mean_squared_error: 0.1819 - rmse: 0.4227 -
mean_absolute_percentage_error: 168.4449
Epoch 34/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2078 -
mean_absolute_error: 0.2930 - mean_squared_error: 0.1802 - rmse: 0.4202 -
mean_absolute_percentage_error: 163.3656
Epoch 35/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2049 -
mean_absolute_error: 0.2905 - mean_squared_error: 0.1777 - rmse: 0.4176 -
mean_absolute_percentage_error: 169.9465
Epoch 36/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2050 -
mean_absolute_error: 0.2907 - mean_squared_error: 0.1779 - rmse: 0.4176 -
mean_absolute_percentage_error: 163.3069
Epoch 37/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2036 -
mean_absolute_error: 0.2897 - mean_squared_error: 0.1767 - rmse: 0.4163 -
```

```
mean_absolute_percentage_error: 164.3039
Epoch 38/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2062 -
mean_absolute_error: 0.2913 - mean_squared_error: 0.1793 - rmse: 0.4193 -
mean_absolute_percentage_error: 167.1785
Epoch 39/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2046 -
mean_absolute_error: 0.2909 - mean_squared_error: 0.1778 - rmse: 0.4180 -
mean_absolute_percentage_error: 158.3560
Epoch 40/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2065 -
mean_absolute_error: 0.2937 - mean_squared_error: 0.1797 - rmse: 0.4195 -
mean_absolute_percentage_error: 167.9454
Epoch 41/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2025 -
mean_absolute_error: 0.2895 - mean_squared_error: 0.1759 - rmse: 0.4145 -
mean_absolute_percentage_error: 162.7774
Epoch 42/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2044 -
mean_absolute_error: 0.2898 - mean_squared_error: 0.1777 - rmse: 0.4164 -
mean_absolute_percentage_error: 164.1572
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2012 -
mean_absolute_error: 0.2877 - mean_squared_error: 0.1746 - rmse: 0.4125 -
mean_absolute_percentage_error: 161.6167
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2032 -
mean_absolute_error: 0.2893 - mean_squared_error: 0.1767 - rmse: 0.4150 -
mean_absolute_percentage_error: 165.5336
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2020 -
mean_absolute_error: 0.2880 - mean_squared_error: 0.1757 - rmse: 0.4144 -
mean_absolute_percentage_error: 163.7026
Epoch 46/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2008 -
mean_absolute_error: 0.2883 - mean_squared_error: 0.1744 - rmse: 0.4140 -
mean_absolute_percentage_error: 164.4837
Epoch 47/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2013 -
mean_absolute_error: 0.2884 - mean_squared_error: 0.1751 - rmse: 0.4135 -
mean_absolute_percentage_error: 167.8199
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1993 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1731 - rmse: 0.4119 -
mean_absolute_percentage_error: 161.5753
Epoch 49/100
210/210 [==============================] - 1s 3ms/step - loss: 0.2013 -
mean_absolute_error: 0.2870 - mean_squared_error: 0.1753 - rmse: 0.4136 -
```

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mean_absolute_percentage_error: 165.0478
Epoch 50/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1993 -
mean_absolute_error: 0.2859 - mean_squared_error: 0.1734 - rmse: 0.4116 -
mean_absolute_percentage_error: 159.8365
Epoch 51/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1988 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1731 - rmse: 0.4114 -
mean_absolute_percentage_error: 164.9812
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1974 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1719 - rmse: 0.4101 -
mean_absolute_percentage_error: 157.3396
Epoch 53/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1995 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1741 - rmse: 0.4136 -
mean_absolute_percentage_error: 164.1367
Epoch 54/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1990 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1736 - rmse: 0.4126 -
mean_absolute_percentage_error: 162.9658
Epoch 55/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1975 -
mean_absolute_error: 0.2845 - mean_squared_error: 0.1722 - rmse: 0.4107 -
mean_absolute_percentage_error: 163.5949
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1972 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1718 - rmse: 0.4110 -
mean_absolute_percentage_error: 163.5756
Epoch 57/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1976 -
mean_absolute_error: 0.2857 - mean_squared_error: 0.1723 - rmse: 0.4106 -
mean_absolute_percentage_error: 161.0042
Epoch 58/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1978 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1725 - rmse: 0.4114 -
mean_absolute_percentage_error: 160.7844
Epoch 59/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1960 -
mean_absolute_error: 0.2845 - mean_squared_error: 0.1708 - rmse: 0.4083 -
mean_absolute_percentage_error: 156.7421
Epoch 60/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1961 -
mean_absolute_error: 0.2851 - mean_squared_error: 0.1709 - rmse: 0.4096 -
mean_absolute_percentage_error: 160.2107
Epoch 61/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1948 -
mean_absolute_error: 0.2826 - mean_squared_error: 0.1698 - rmse: 0.4083 -
```

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mean_absolute_percentage_error: 160.8138
Epoch 62/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1960 -
mean_absolute_error: 0.2834 - mean_squared_error: 0.1709 - rmse: 0.4085 -
mean_absolute_percentage_error: 155.2328
Epoch 63/100
210/210 [==============================] - 1s 2ms/step - loss: 0.1978 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1727 - rmse: 0.4108 -
mean_absolute_percentage_error: 164.4331
Epoch 64/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1948 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1696 - rmse: 0.4083 -
mean_absolute_percentage_error: 165.1980
Epoch 65/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1962 -
mean_absolute_error: 0.2834 - mean_squared_error: 0.1712 - rmse: 0.4095 -
mean_absolute_percentage_error: 162.1919
Epoch 66/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1934 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1684 - rmse: 0.4055 -
mean_absolute_percentage_error: 157.7965
Epoch 67/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1945 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1695 - rmse: 0.4073 -
mean_absolute_percentage_error: 159.5626
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1938 -
mean_absolute_error: 0.2812 - mean_squared_error: 0.1689 - rmse: 0.4072 -
mean_absolute_percentage_error: 160.1412
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1948 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1699 - rmse: 0.4074 -
mean_absolute_percentage_error: 157.7568
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1946 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1698 - rmse: 0.4073 -
mean_absolute_percentage_error: 159.4143
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1926 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1677 - rmse: 0.4047 -
mean_absolute_percentage_error: 162.0941
Epoch 72/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1958 -
mean_absolute_error: 0.2845 - mean_squared_error: 0.1711 - rmse: 0.4092 -
mean_absolute_percentage_error: 162.0232
Epoch 73/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1914 -
mean_absolute_error: 0.2794 - mean_squared_error: 0.1666 - rmse: 0.4045 -
```

```
mean_absolute_percentage_error: 155.2869
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1940 -
mean_absolute_error: 0.2822 - mean_squared_error: 0.1694 - rmse: 0.4063 -
mean_absolute_percentage_error: 159.5654
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1922 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1676 - rmse: 0.4054 -
mean_absolute_percentage_error: 161.1230
Epoch 76/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1922 -
mean_absolute_error: 0.2801 - mean_squared_error: 0.1676 - rmse: 0.4055 -
mean_absolute_percentage_error: 162.2074
Epoch 77/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1937 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1691 - rmse: 0.4063 -
mean_absolute_percentage_error: 164.5298
Epoch 78/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1911 -
mean_absolute_error: 0.2801 - mean_squared_error: 0.1665 - rmse: 0.4035 -
mean_absolute_percentage_error: 158.1123
Epoch 79/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1914 -
mean_absolute_error: 0.2797 - mean_squared_error: 0.1667 - rmse: 0.4034 -
mean_absolute_percentage_error: 160.1400
Epoch 80/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1934 -
mean_absolute_error: 0.2806 - mean_squared_error: 0.1688 - rmse: 0.4053 -
mean_absolute_percentage_error: 149.5777
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1934 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1688 - rmse: 0.4063 -
mean_absolute_percentage_error: 157.9685
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1941 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1695 - rmse: 0.4072 -
mean_absolute_percentage_error: 156.0155
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1938 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1693 - rmse: 0.4068 -
mean_absolute_percentage_error: 158.4645
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2801 - mean_squared_error: 0.1674 - rmse: 0.4033 -
mean_absolute_percentage_error: 158.2417
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1908 -
mean_absolute_error: 0.2785 - mean_squared_error: 0.1663 - rmse: 0.4030 -
```

```
mean_absolute_percentage_error: 158.9846
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1935 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1689 - rmse: 0.4067 -
mean_absolute_percentage_error: 150.6717
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1932 -
mean_absolute_error: 0.2811 - mean_squared_error: 0.1687 - rmse: 0.4052 -
mean_absolute_percentage_error: 159.3853
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1897 -
mean_absolute_error: 0.2777 - mean_squared_error: 0.1652 - rmse: 0.4024 -
mean_absolute_percentage_error: 156.5055
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1913 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1669 - rmse: 0.4042 -
mean_absolute_percentage_error: 161.3389
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1910 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1667 - rmse: 0.4038 -
mean_absolute_percentage_error: 157.1118
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1912 -
mean_absolute_error: 0.2786 - mean_squared_error: 0.1669 - rmse: 0.4047 -
mean_absolute_percentage_error: 159.5434
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1903 -
mean_absolute_error: 0.2787 - mean_squared_error: 0.1658 - rmse: 0.4024 -
mean_absolute_percentage_error: 158.0919
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1892 -
mean_absolute_error: 0.2779 - mean_squared_error: 0.1648 - rmse: 0.4007 -
mean_absolute_percentage_error: 159.2329
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1912 -
mean_absolute_error: 0.2787 - mean_squared_error: 0.1669 - rmse: 0.4038 -
mean_absolute_percentage_error: 158.9063
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1886 -
mean_absolute_error: 0.2779 - mean_squared_error: 0.1642 - rmse: 0.4013 -
mean_absolute_percentage_error: 156.4640
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1922 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1679 - rmse: 0.4057 -
mean_absolute_percentage_error: 156.5457
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1910 -
mean_absolute_error: 0.2795 - mean_squared_error: 0.1668 - rmse: 0.4049 -
```

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mean_absolute_percentage_error: 158.6525
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1913 -
mean_absolute_error: 0.2804 - mean_squared_error: 0.1669 - rmse: 0.4043 -
mean_absolute_percentage_error: 160.9047
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1963 -
mean_absolute_error: 0.2842 - mean_squared_error: 0.1720 - rmse: 0.4091 -
mean_absolute_percentage_error: 155.8277
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1926 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1683 - rmse: 0.4058 -
mean_absolute_percentage_error: 158.3050
100/100 [==============================] - 0s 1ms/step - loss: 0.1944 -
mean_absolute_error: 0.2890 - mean_squared_error: 0.1702 - rmse: 0.4078 -
mean_absolute_percentage_error: 154.9128
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1L2
------------------------------------------------------------------------
Training for fold 2 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4612 -
mean_absolute_error: 0.4443 - mean_squared_error: 0.3491 - rmse: 0.5807 -
mean_absolute_percentage_error: 207.3885
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3126 -
mean_absolute_error: 0.3531 - mean_squared_error: 0.2417 - rmse: 0.4877 -
mean_absolute_percentage_error: 196.5695
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2833 -
mean_absolute_error: 0.3420 - mean_squared_error: 0.2289 - rmse: 0.4758 -
mean_absolute_percentage_error: 195.0724
Epoch 4/100
210/210 [==============================] - 1s 2ms/step - loss: 0.2714 -
mean_absolute_error: 0.3373 - mean_squared_error: 0.2241 - rmse: 0.4697 -
mean_absolute_percentage_error: 195.6680
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2614 -
mean_absolute_error: 0.3314 - mean_squared_error: 0.2184 - rmse: 0.4640 -
mean_absolute_percentage_error: 197.3309
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2557 -
mean_absolute_error: 0.3285 - mean_squared_error: 0.2153 - rmse: 0.4609 -
mean_absolute_percentage_error: 190.2465
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2512 -
mean_absolute_error: 0.3267 - mean_squared_error: 0.2126 - rmse: 0.4572 -
mean_absolute_percentage_error: 188.8552
```

```
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2469 -
mean_absolute_error: 0.3222 - mean_squared_error: 0.2099 - rmse: 0.4548 -
mean_absolute_percentage_error: 191.3212
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2459 -
mean_absolute_error: 0.3218 - mean_squared_error: 0.2095 - rmse: 0.4542 -
mean_absolute_percentage_error: 191.9458
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2418 -
mean_absolute_error: 0.3193 - mean_squared_error: 0.2063 - rmse: 0.4502 -
mean_absolute_percentage_error: 183.4085
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2399 -
mean_absolute_error: 0.3175 - mean_squared_error: 0.2047 - rmse: 0.4488 -
mean_absolute_percentage_error: 192.3489
Epoch 12/100
210/210 [==============================] - 1s 2ms/step - loss: 0.2372 -
mean_absolute_error: 0.3152 - mean_squared_error: 0.2023 - rmse: 0.4458 -
mean_absolute_percentage_error: 187.3188
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2346 -
mean_absolute_error: 0.3147 - mean_squared_error: 0.2000 - rmse: 0.4434 -
mean_absolute_percentage_error: 183.6443
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2315 -
mean_absolute_error: 0.3107 - mean_squared_error: 0.1970 - rmse: 0.4403 -
mean_absolute_percentage_error: 185.4442
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2344 -
mean_absolute_error: 0.3135 - mean_squared_error: 0.2000 - rmse: 0.4432 -
mean_absolute_percentage_error: 178.2371
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2262 -
mean_absolute_error: 0.3065 - mean_squared_error: 0.1922 - rmse: 0.4335 -
mean_absolute_percentage_error: 179.9247
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2259 -
mean_absolute_error: 0.3058 - mean_squared_error: 0.1919 - rmse: 0.4351 -
mean_absolute_percentage_error: 180.6962
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2267 -
mean_absolute_error: 0.3062 - mean_squared_error: 0.1931 - rmse: 0.4342 -
mean_absolute_percentage_error: 180.8644
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2273 -
mean_absolute_error: 0.3073 - mean_squared_error: 0.1938 - rmse: 0.4360 -
mean_absolute_percentage_error: 179.7786
```

```
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2243 -
mean_absolute_error: 0.3050 - mean_squared_error: 0.1912 - rmse: 0.4329 -
mean_absolute_percentage_error: 181.9735
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2234 -
mean_absolute_error: 0.3046 - mean_squared_error: 0.1905 - rmse: 0.4324 -
mean_absolute_percentage_error: 184.9699
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2205 -
mean_absolute_error: 0.3031 - mean_squared_error: 0.1878 - rmse: 0.4297 -
mean_absolute_percentage_error: 178.2940
Epoch 23/100
210/210 [==============================] - 1s 2ms/step - loss: 0.2213 -
mean_absolute_error: 0.3025 - mean_squared_error: 0.1889 - rmse: 0.4314 -
mean_absolute_percentage_error: 180.3200
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2194 -
mean_absolute_error: 0.3019 - mean_squared_error: 0.1872 - rmse: 0.4298 -
mean_absolute_percentage_error: 172.4733
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2177 -
mean_absolute_error: 0.3000 - mean_squared_error: 0.1859 - rmse: 0.4274 -
mean_absolute_percentage_error: 175.2957
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2176 -
mean_absolute_error: 0.3008 - mean_squared_error: 0.1859 - rmse: 0.4276 -
mean_absolute_percentage_error: 177.6649
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2134 -
mean_absolute_error: 0.2959 - mean_squared_error: 0.1821 - rmse: 0.4237 -
mean_absolute_percentage_error: 175.9334
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2142 -
mean_absolute_error: 0.2977 - mean_squared_error: 0.1831 - rmse: 0.4244 -
mean_absolute_percentage_error: 173.8551
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2148 -
mean_absolute_error: 0.2985 - mean_squared_error: 0.1838 - rmse: 0.4253 -
mean_absolute_percentage_error: 173.2836
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2111 -
mean_absolute_error: 0.2952 - mean_squared_error: 0.1802 - rmse: 0.4201 -
mean_absolute_percentage_error: 175.5989
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2111 -
mean_absolute_error: 0.2950 - mean_squared_error: 0.1805 - rmse: 0.4210 -
mean_absolute_percentage_error: 172.0140
```

```
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2128 -
mean_absolute_error: 0.2977 - mean_squared_error: 0.1824 - rmse: 0.4234 -
mean_absolute_percentage_error: 174.1791
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2152 -
mean_absolute_error: 0.2989 - mean_squared_error: 0.1851 - rmse: 0.4251 -
mean_absolute_percentage_error: 175.1537
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2085 -
mean_absolute_error: 0.2940 - mean_squared_error: 0.1786 - rmse: 0.4188 -
mean_absolute_percentage_error: 170.2639
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2076 -
mean_absolute_error: 0.2933 - mean_squared_error: 0.1780 - rmse: 0.4184 -
mean_absolute_percentage_error: 173.7063
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2081 -
mean_absolute_error: 0.2940 - mean_squared_error: 0.1785 - rmse: 0.4185 -
mean_absolute_percentage_error: 172.0321
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2090 -
mean_absolute_error: 0.2944 - mean_squared_error: 0.1794 - rmse: 0.4202 -
mean_absolute_percentage_error: 175.0640
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2068 -
mean_absolute_error: 0.2931 - mean_squared_error: 0.1775 - rmse: 0.4178 -
mean_absolute_percentage_error: 173.2476
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2057 -
mean_absolute_error: 0.2901 - mean_squared_error: 0.1764 - rmse: 0.4165 -
mean_absolute_percentage_error: 168.2610
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2077 -
mean_absolute_error: 0.2925 - mean_squared_error: 0.1786 - rmse: 0.4185 -
mean_absolute_percentage_error: 175.7940
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2048 -
mean_absolute_error: 0.2911 - mean_squared_error: 0.1758 - rmse: 0.4146 -
mean_absolute_percentage_error: 175.2740
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2058 -
mean_absolute_error: 0.2906 - mean_squared_error: 0.1767 - rmse: 0.4164 -
mean_absolute_percentage_error: 172.3338
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2046 -
mean_absolute_error: 0.2898 - mean_squared_error: 0.1758 - rmse: 0.4156 -
mean_absolute_percentage_error: 167.0901
```

```
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2046 -
mean_absolute_error: 0.2901 - mean_squared_error: 0.1757 - rmse: 0.4148 -
mean_absolute_percentage_error: 174.9006
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2024 -
mean_absolute_error: 0.2888 - mean_squared_error: 0.1735 - rmse: 0.4125 -
mean_absolute_percentage_error: 169.7662
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2032 -
mean_absolute_error: 0.2881 - mean_squared_error: 0.1745 - rmse: 0.4139 -
mean_absolute_percentage_error: 172.9588
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2018 -
mean_absolute_error: 0.2883 - mean_squared_error: 0.1732 - rmse: 0.4119 -
mean_absolute_percentage_error: 163.3496
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2005 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1718 - rmse: 0.4106 -
mean_absolute_percentage_error: 170.0173
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2007 -
mean_absolute_error: 0.2859 - mean_squared_error: 0.1720 - rmse: 0.4103 -
mean_absolute_percentage_error: 164.3225
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2024 -
mean_absolute_error: 0.2887 - mean_squared_error: 0.1739 - rmse: 0.4123 -
mean_absolute_percentage_error: 170.3192
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2015 -
mean_absolute_error: 0.2880 - mean_squared_error: 0.1728 - rmse: 0.4118 -
mean_absolute_percentage_error: 163.6977
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1999 -
mean_absolute_error: 0.2863 - mean_squared_error: 0.1713 - rmse: 0.4094 -
mean_absolute_percentage_error: 163.8883
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1996 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1712 - rmse: 0.4100 -
mean_absolute_percentage_error: 169.6203
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2036 -
mean_absolute_error: 0.2899 - mean_squared_error: 0.1751 - rmse: 0.4148 -
mean_absolute_percentage_error: 166.2999
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1984 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1701 - rmse: 0.4089 -
mean_absolute_percentage_error: 168.0025
```

```
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1979 -
mean_absolute_error: 0.2847 - mean_squared_error: 0.1697 - rmse: 0.4070 -
mean_absolute_percentage_error: 169.6341
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1960 -
mean_absolute_error: 0.2829 - mean_squared_error: 0.1678 - rmse: 0.4049 -
mean_absolute_percentage_error: 164.6599
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1982 -
mean_absolute_error: 0.2854 - mean_squared_error: 0.1701 - rmse: 0.4080 -
mean_absolute_percentage_error: 177.7929
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1973 -
mean_absolute_error: 0.2841 - mean_squared_error: 0.1694 - rmse: 0.4069 -
mean_absolute_percentage_error: 168.8162
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1986 -
mean_absolute_error: 0.2853 - mean_squared_error: 0.1706 - rmse: 0.4082 -
mean_absolute_percentage_error: 170.6744
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1953 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1674 - rmse: 0.4043 -
mean_absolute_percentage_error: 168.3708
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2002 -
mean_absolute_error: 0.2861 - mean_squared_error: 0.1722 - rmse: 0.4109 -
mean_absolute_percentage_error: 171.1408
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1990 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1712 - rmse: 0.4085 -
mean_absolute_percentage_error: 170.4892
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1953 -
mean_absolute_error: 0.2823 - mean_squared_error: 0.1675 - rmse: 0.4050 -
mean_absolute_percentage_error: 166.5157
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1983 -
mean_absolute_error: 0.2853 - mean_squared_error: 0.1705 - rmse: 0.4088 -
mean_absolute_percentage_error: 166.7668
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1995 -
mean_absolute_error: 0.2851 - mean_squared_error: 0.1720 - rmse: 0.4110 -
mean_absolute_percentage_error: 179.1754
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1924 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1650 - rmse: 0.4021 -
mean_absolute_percentage_error: 165.6876
```

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Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1983 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1709 - rmse: 0.4094 -
mean_absolute_percentage_error: 171.2785
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1948 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1676 - rmse: 0.4049 -
mean_absolute_percentage_error: 166.2855
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1952 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1680 - rmse: 0.4049 -
mean_absolute_percentage_error: 169.7504
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1649 - rmse: 0.4026 -
mean_absolute_percentage_error: 169.6354
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1965 -
mean_absolute_error: 0.2834 - mean_squared_error: 0.1694 - rmse: 0.4078 -
mean_absolute_percentage_error: 170.1884
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1950 -
mean_absolute_error: 0.2824 - mean_squared_error: 0.1680 - rmse: 0.4062 -
mean_absolute_percentage_error: 172.8360
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1946 -
mean_absolute_error: 0.2820 - mean_squared_error: 0.1677 - rmse: 0.4060 -
mean_absolute_percentage_error: 173.8302
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1941 -
mean_absolute_error: 0.2817 - mean_squared_error: 0.1672 - rmse: 0.4049 -
mean_absolute_percentage_error: 169.2004
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1658 - rmse: 0.4032 -
mean_absolute_percentage_error: 167.9970
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1918 -
mean_absolute_error: 0.2793 - mean_squared_error: 0.1650 - rmse: 0.4027 -
mean_absolute_percentage_error: 168.3665
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1932 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1666 - rmse: 0.4041 -
mean_absolute_percentage_error: 168.5782
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1975 -
mean_absolute_error: 0.2841 - mean_squared_error: 0.1707 - rmse: 0.4084 -
mean_absolute_percentage_error: 165.1441
```

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Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1898 -
mean_absolute_error: 0.2789 - mean_squared_error: 0.1631 - rmse: 0.3997 -
mean_absolute_percentage_error: 168.7290
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1952 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1686 - rmse: 0.4056 -
mean_absolute_percentage_error: 162.2791
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1920 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1654 - rmse: 0.4034 -
mean_absolute_percentage_error: 167.6490
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1924 -
mean_absolute_error: 0.2802 - mean_squared_error: 0.1660 - rmse: 0.4034 -
mean_absolute_percentage_error: 160.7975
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1923 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1660 - rmse: 0.4035 -
mean_absolute_percentage_error: 168.8084
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1909 -
mean_absolute_error: 0.2795 - mean_squared_error: 0.1646 - rmse: 0.4013 -
mean_absolute_percentage_error: 160.7413
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1932 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1670 - rmse: 0.4043 -
mean_absolute_percentage_error: 165.3073
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1912 -
mean_absolute_error: 0.2802 - mean_squared_error: 0.1651 - rmse: 0.4026 -
mean_absolute_percentage_error: 167.7283
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1911 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1651 - rmse: 0.4019 -
mean_absolute_percentage_error: 168.1155
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1933 -
mean_absolute_error: 0.2820 - mean_squared_error: 0.1674 - rmse: 0.4042 -
mean_absolute_percentage_error: 168.9106
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1899 -
mean_absolute_error: 0.2792 - mean_squared_error: 0.1642 - rmse: 0.4011 -
mean_absolute_percentage_error: 174.1048
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1899 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1644 - rmse: 0.4010 -
mean_absolute_percentage_error: 165.1538
```

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Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1664 - rmse: 0.4032 -
mean_absolute_percentage_error: 163.5288
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1932 -
mean_absolute_error: 0.2817 - mean_squared_error: 0.1677 - rmse: 0.4054 -
mean_absolute_percentage_error: 162.7222
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1891 -
mean_absolute_error: 0.2779 - mean_squared_error: 0.1637 - rmse: 0.4005 -
mean_absolute_percentage_error: 164.6715
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1888 -
mean_absolute_error: 0.2785 - mean_squared_error: 0.1635 - rmse: 0.4001 -
mean_absolute_percentage_error: 163.5031
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1904 -
mean_absolute_error: 0.2791 - mean_squared_error: 0.1651 - rmse: 0.4021 -
mean_absolute_percentage_error: 163.2936
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1914 -
mean_absolute_error: 0.2805 - mean_squared_error: 0.1661 - rmse: 0.4045 -
mean_absolute_percentage_error: 162.3704
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1883 -
mean_absolute_error: 0.2784 - mean_squared_error: 0.1630 - rmse: 0.3996 -
mean_absolute_percentage_error: 162.3112
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1908 -
mean_absolute_error: 0.2795 - mean_squared_error: 0.1656 - rmse: 0.4028 -
mean_absolute_percentage_error: 165.9630
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1876 -
mean_absolute_error: 0.2774 - mean_squared_error: 0.1624 - rmse: 0.3983 -
mean_absolute_percentage_error: 163.7048
100/100 [==============================] - 0s 1ms/step - loss: 0.1979 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1726 - rmse: 0.4097 -
mean_absolute_percentage_error: 175.8527
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1L2
-------------------------------------------------------------------------
Training for fold 3 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4582 -
mean_absolute_error: 0.4400 - mean_squared_error: 0.3447 - rmse: 0.5763 -
mean_absolute_percentage_error: 193.8796
Epoch 2/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.3116 -
mean_absolute_error: 0.3502 - mean_squared_error: 0.2395 - rmse: 0.4855 -
mean_absolute_percentage_error: 195.2160
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2798 -
mean_absolute_error: 0.3370 - mean_squared_error: 0.2251 - rmse: 0.4701 -
mean_absolute_percentage_error: 197.8163
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2661 -
mean_absolute_error: 0.3319 - mean_squared_error: 0.2195 - rmse: 0.4647 -
mean_absolute_percentage_error: 196.0671
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2586 -
mean_absolute_error: 0.3290 - mean_squared_error: 0.2161 - rmse: 0.4608 -
mean_absolute_percentage_error: 193.0410
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2511 -
mean_absolute_error: 0.3235 - mean_squared_error: 0.2112 - rmse: 0.4564 -
mean_absolute_percentage_error: 190.8284
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2479 -
mean_absolute_error: 0.3224 - mean_squared_error: 0.2094 - rmse: 0.4536 -
mean_absolute_percentage_error: 193.5540
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2431 -
mean_absolute_error: 0.3190 - mean_squared_error: 0.2062 - rmse: 0.4499 -
mean_absolute_percentage_error: 194.0663
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2407 -
mean_absolute_error: 0.3189 - mean_squared_error: 0.2045 - rmse: 0.4475 -
mean_absolute_percentage_error: 186.8971
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2371 -
mean_absolute_error: 0.3153 - mean_squared_error: 0.2020 - rmse: 0.4460 -
mean_absolute_percentage_error: 187.7451
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2358 -
mean_absolute_error: 0.3151 - mean_squared_error: 0.2014 - rmse: 0.4455 -
mean_absolute_percentage_error: 191.0914
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2326 -
mean_absolute_error: 0.3128 - mean_squared_error: 0.1989 - rmse: 0.4418 -
mean_absolute_percentage_error: 191.2928
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2315 -
mean_absolute_error: 0.3107 - mean_squared_error: 0.1985 - rmse: 0.4416 -
mean_absolute_percentage_error: 183.0700
Epoch 14/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.2313 -
mean_absolute_error: 0.3119 - mean_squared_error: 0.1986 - rmse: 0.4419 -
mean_absolute_percentage_error: 184.1885
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2286 -
mean_absolute_error: 0.3104 - mean_squared_error: 0.1964 - rmse: 0.4382 -
mean_absolute_percentage_error: 182.0800
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2287 -
mean_absolute_error: 0.3096 - mean_squared_error: 0.1969 - rmse: 0.4395 -
mean_absolute_percentage_error: 181.2495
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2262 -
mean_absolute_error: 0.3079 - mean_squared_error: 0.1948 - rmse: 0.4371 -
mean_absolute_percentage_error: 184.3224
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2254 -
mean_absolute_error: 0.3072 - mean_squared_error: 0.1946 - rmse: 0.4375 -
mean_absolute_percentage_error: 181.0919
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2227 -
mean_absolute_error: 0.3055 - mean_squared_error: 0.1919 - rmse: 0.4337 -
mean_absolute_percentage_error: 183.9412
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2225 -
mean_absolute_error: 0.3067 - mean_squared_error: 0.1923 - rmse: 0.4341 -
mean_absolute_percentage_error: 181.5118
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2199 -
mean_absolute_error: 0.3043 - mean_squared_error: 0.1899 - rmse: 0.4311 -
mean_absolute_percentage_error: 183.2895
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2188 -
mean_absolute_error: 0.3030 - mean_squared_error: 0.1890 - rmse: 0.4309 -
mean_absolute_percentage_error: 173.8756
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2193 -
mean_absolute_error: 0.3045 - mean_squared_error: 0.1896 - rmse: 0.4309 -
mean_absolute_percentage_error: 184.3760
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2185 -
mean_absolute_error: 0.3039 - mean_squared_error: 0.1891 - rmse: 0.4306 -
mean_absolute_percentage_error: 178.8038
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2160 -
mean_absolute_error: 0.3007 - mean_squared_error: 0.1867 - rmse: 0.4278 -
mean_absolute_percentage_error: 179.0571
Epoch 26/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.2147 -
mean_absolute_error: 0.3005 - mean_squared_error: 0.1857 - rmse: 0.4267 -
mean_absolute_percentage_error: 179.4293
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2170 -
mean_absolute_error: 0.3021 - mean_squared_error: 0.1881 - rmse: 0.4299 -
mean_absolute_percentage_error: 182.0890
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2157 -
mean_absolute_error: 0.3020 - mean_squared_error: 0.1872 - rmse: 0.4293 -
mean_absolute_percentage_error: 175.6677
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2156 -
mean_absolute_error: 0.3009 - mean_squared_error: 0.1873 - rmse: 0.4284 -
mean_absolute_percentage_error: 173.0222
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2152 -
mean_absolute_error: 0.3000 - mean_squared_error: 0.1869 - rmse: 0.4291 -
mean_absolute_percentage_error: 170.8759
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2152 -
mean_absolute_error: 0.3010 - mean_squared_error: 0.1872 - rmse: 0.4277 -
mean_absolute_percentage_error: 178.2851
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2148 -
mean_absolute_error: 0.3016 - mean_squared_error: 0.1868 - rmse: 0.4273 -
mean_absolute_percentage_error: 178.6148
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2123 -
mean_absolute_error: 0.2988 - mean_squared_error: 0.1842 - rmse: 0.4254 -
mean_absolute_percentage_error: 180.1682
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2109 -
mean_absolute_error: 0.2971 - mean_squared_error: 0.1829 - rmse: 0.4241 -
mean_absolute_percentage_error: 185.2151
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2103 -
mean_absolute_error: 0.2975 - mean_squared_error: 0.1828 - rmse: 0.4235 -
mean_absolute_percentage_error: 180.7032
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2121 -
mean_absolute_error: 0.2991 - mean_squared_error: 0.1845 - rmse: 0.4258 -
mean_absolute_percentage_error: 172.9053
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2087 -
mean_absolute_error: 0.2965 - mean_squared_error: 0.1813 - rmse: 0.4220 -
mean_absolute_percentage_error: 180.6913
Epoch 38/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.2086 -
mean_absolute_error: 0.2966 - mean_squared_error: 0.1813 - rmse: 0.4218 -
mean_absolute_percentage_error: 177.7800
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2093 -
mean_absolute_error: 0.2969 - mean_squared_error: 0.1820 - rmse: 0.4223 -
mean_absolute_percentage_error: 180.9343
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2061 -
mean_absolute_error: 0.2935 - mean_squared_error: 0.1789 - rmse: 0.4188 -
mean_absolute_percentage_error: 175.4273
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2072 -
mean_absolute_error: 0.2949 - mean_squared_error: 0.1802 - rmse: 0.4202 -
mean_absolute_percentage_error: 178.0805
Epoch 42/100
210/210 [==============================] - 1s 3ms/step - loss: 0.2049 -
mean_absolute_error: 0.2930 - mean_squared_error: 0.1780 - rmse: 0.4176 -
mean_absolute_percentage_error: 173.9997
Epoch 43/100
210/210 [==============================] - 1s 2ms/step - loss: 0.2060 -
mean_absolute_error: 0.2944 - mean_squared_error: 0.1794 - rmse: 0.4199 -
mean_absolute_percentage_error: 179.8214
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2052 -
mean_absolute_error: 0.2939 - mean_squared_error: 0.1787 - rmse: 0.4176 -
mean_absolute_percentage_error: 180.5499
Epoch 45/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2039 -
mean_absolute_error: 0.2933 - mean_squared_error: 0.1775 - rmse: 0.4176 -
mean_absolute_percentage_error: 174.6533
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2042 -
mean_absolute_error: 0.2921 - mean_squared_error: 0.1779 - rmse: 0.4179 -
mean_absolute_percentage_error: 175.1689
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2049 -
mean_absolute_error: 0.2929 - mean_squared_error: 0.1785 - rmse: 0.4184 -
mean_absolute_percentage_error: 174.4265
Epoch 48/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2048 -
mean_absolute_error: 0.2929 - mean_squared_error: 0.1783 - rmse: 0.4184 -
mean_absolute_percentage_error: 173.5596
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2056 -
mean_absolute_error: 0.2932 - mean_squared_error: 0.1792 - rmse: 0.4193 -
mean_absolute_percentage_error: 178.3436
Epoch 50/100
```

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210/210 [==============================] - 0s 1ms/step - loss: 0.2023 -
mean_absolute_error: 0.2909 - mean_squared_error: 0.1758 - rmse: 0.4158 -
mean_absolute_percentage_error: 177.4639
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2005 -
mean_absolute_error: 0.2891 - mean_squared_error: 0.1741 - rmse: 0.4142 -
mean_absolute_percentage_error: 171.3520
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2017 -
mean_absolute_error: 0.2908 - mean_squared_error: 0.1754 - rmse: 0.4153 -
mean_absolute_percentage_error: 175.0126
Epoch 53/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2026 -
mean_absolute_error: 0.2908 - mean_squared_error: 0.1764 - rmse: 0.4165 -
mean_absolute_percentage_error: 176.3138
Epoch 54/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2028 -
mean_absolute_error: 0.2905 - mean_squared_error: 0.1768 - rmse: 0.4160 -
mean_absolute_percentage_error: 178.4041
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1999 -
mean_absolute_error: 0.2892 - mean_squared_error: 0.1738 - rmse: 0.4122 -
mean_absolute_percentage_error: 175.3925
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2011 -
mean_absolute_error: 0.2899 - mean_squared_error: 0.1752 - rmse: 0.4145 -
mean_absolute_percentage_error: 174.1407
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2057 -
mean_absolute_error: 0.2935 - mean_squared_error: 0.1799 - rmse: 0.4199 -
mean_absolute_percentage_error: 174.7942
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1994 -
mean_absolute_error: 0.2885 - mean_squared_error: 0.1738 - rmse: 0.4113 -
mean_absolute_percentage_error: 173.8403
Epoch 59/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1986 -
mean_absolute_error: 0.2881 - mean_squared_error: 0.1730 - rmse: 0.4115 -
mean_absolute_percentage_error: 169.7337
Epoch 60/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1977 -
mean_absolute_error: 0.2874 - mean_squared_error: 0.1722 - rmse: 0.4103 -
mean_absolute_percentage_error: 170.1703
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1972 -
mean_absolute_error: 0.2869 - mean_squared_error: 0.1716 - rmse: 0.4096 -
mean_absolute_percentage_error: 170.1995
Epoch 62/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1991 -
mean_absolute_error: 0.2875 - mean_squared_error: 0.1736 - rmse: 0.4130 -
mean_absolute_percentage_error: 174.2393
Epoch 63/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1969 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1716 - rmse: 0.4100 -
mean_absolute_percentage_error: 178.4389
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1972 -
mean_absolute_error: 0.2867 - mean_squared_error: 0.1719 - rmse: 0.4102 -
mean_absolute_percentage_error: 175.9438
Epoch 65/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1982 -
mean_absolute_error: 0.2881 - mean_squared_error: 0.1731 - rmse: 0.4118 -
mean_absolute_percentage_error: 175.0621
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1958 -
mean_absolute_error: 0.2856 - mean_squared_error: 0.1707 - rmse: 0.4087 -
mean_absolute_percentage_error: 173.8902
Epoch 67/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1975 -
mean_absolute_error: 0.2890 - mean_squared_error: 0.1725 - rmse: 0.4116 -
mean_absolute_percentage_error: 172.0564
Epoch 68/100
210/210 [==============================] - 1s 4ms/step - loss: 0.1972 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1721 - rmse: 0.4105 -
mean_absolute_percentage_error: 171.3856
Epoch 69/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1948 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1699 - rmse: 0.4074 -
mean_absolute_percentage_error: 167.7056
Epoch 70/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1962 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1713 - rmse: 0.4097 -
mean_absolute_percentage_error: 168.8155
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2849 - mean_squared_error: 0.1702 - rmse: 0.4080 -
mean_absolute_percentage_error: 171.9834
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1954 -
mean_absolute_error: 0.2859 - mean_squared_error: 0.1705 - rmse: 0.4092 -
mean_absolute_percentage_error: 168.9530
Epoch 73/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1961 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1712 - rmse: 0.4091 -
mean_absolute_percentage_error: 168.9923
Epoch 74/100
```

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210/210 [==============================] - 0s 1ms/step - loss: 0.1971 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1723 - rmse: 0.4109 -
mean_absolute_percentage_error: 172.3888
Epoch 75/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1940 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1691 - rmse: 0.4065 -
mean_absolute_percentage_error: 171.0956
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1967 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1720 - rmse: 0.4105 -
mean_absolute_percentage_error: 172.6418
Epoch 77/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1935 -
mean_absolute_error: 0.2823 - mean_squared_error: 0.1688 - rmse: 0.4069 -
mean_absolute_percentage_error: 169.3305
Epoch 78/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1937 -
mean_absolute_error: 0.2845 - mean_squared_error: 0.1691 - rmse: 0.4062 -
mean_absolute_percentage_error: 172.6021
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2853 - mean_squared_error: 0.1706 - rmse: 0.4095 -
mean_absolute_percentage_error: 170.3173
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2831 - mean_squared_error: 0.1680 - rmse: 0.4048 -
mean_absolute_percentage_error: 166.8364
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1961 -
mean_absolute_error: 0.2867 - mean_squared_error: 0.1714 - rmse: 0.4102 -
mean_absolute_percentage_error: 168.7722
Epoch 82/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1928 -
mean_absolute_error: 0.2829 - mean_squared_error: 0.1681 - rmse: 0.4059 -
mean_absolute_percentage_error: 170.6521
Epoch 83/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1947 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1701 - rmse: 0.4078 -
mean_absolute_percentage_error: 169.9282
Epoch 84/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1926 -
mean_absolute_error: 0.2836 - mean_squared_error: 0.1680 - rmse: 0.4056 -
mean_absolute_percentage_error: 167.8035
Epoch 85/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1941 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1695 - rmse: 0.4080 -
mean_absolute_percentage_error: 169.6261
Epoch 86/100
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210/210 [==============================] - 0s 1ms/step - loss: 0.1928 -
mean_absolute_error: 0.2831 - mean_squared_error: 0.1682 - rmse: 0.4059 -
mean_absolute_percentage_error: 168.2686
Epoch 87/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1966 -
mean_absolute_error: 0.2871 - mean_squared_error: 0.1719 - rmse: 0.4103 -
mean_absolute_percentage_error: 163.6501
Epoch 88/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1947 -
mean_absolute_error: 0.2842 - mean_squared_error: 0.1700 - rmse: 0.4077 -
mean_absolute_percentage_error: 167.4058
Epoch 89/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1914 -
mean_absolute_error: 0.2811 - mean_squared_error: 0.1668 - rmse: 0.4041 -
mean_absolute_percentage_error: 164.9091
Epoch 90/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1930 -
mean_absolute_error: 0.2834 - mean_squared_error: 0.1685 - rmse: 0.4068 -
mean_absolute_percentage_error: 168.0105
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1947 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1701 - rmse: 0.4084 -
mean_absolute_percentage_error: 161.8618
Epoch 92/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1959 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1713 - rmse: 0.4089 -
mean_absolute_percentage_error: 167.0883
Epoch 93/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1930 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1684 - rmse: 0.4060 -
mean_absolute_percentage_error: 169.6131
Epoch 94/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1933 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1688 - rmse: 0.4058 -
mean_absolute_percentage_error: 168.3051
Epoch 95/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1886 -
mean_absolute_error: 0.2791 - mean_squared_error: 0.1642 - rmse: 0.4010 -
mean_absolute_percentage_error: 174.0667
Epoch 96/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1919 -
mean_absolute_error: 0.2820 - mean_squared_error: 0.1674 - rmse: 0.4042 -
mean_absolute_percentage_error: 164.7039
Epoch 97/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1929 -
mean_absolute_error: 0.2817 - mean_squared_error: 0.1685 - rmse: 0.4067 -
mean_absolute_percentage_error: 163.8300
Epoch 98/100
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210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2834 - mean_squared_error: 0.1684 - rmse: 0.4063 -
mean_absolute_percentage_error: 167.3615
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1894 -
mean_absolute_error: 0.2798 - mean_squared_error: 0.1651 - rmse: 0.4020 -
mean_absolute_percentage_error: 169.7185
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1923 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1680 - rmse: 0.4055 -
mean_absolute_percentage_error: 168.4476
100/100 [==============================] - 0s 1ms/step - loss: 0.1943 -
mean_absolute_error: 0.2820 - mean_squared_error: 0.1700 - rmse: 0.4065 -
mean_absolute_percentage_error: 169.1079
200/200 [==============================] - 0s 867us/step
Regularizer chosen is L1L2
------------------------------------------------------------------------
Training for fold 4 ...
Epoch 1/100
210/210 [==============================] - 1s 1ms/step - loss: 0.4756 -
mean_absolute_error: 0.4566 - mean_squared_error: 0.3654 - rmse: 0.5918 -
mean_absolute_percentage_error: 204.8010
Epoch 2/100
210/210 [==============================] - 0s 1ms/step - loss: 0.3130 -
mean_absolute_error: 0.3517 - mean_squared_error: 0.2417 - rmse: 0.4883 -
mean_absolute_percentage_error: 193.5186
Epoch 3/100
210/210 [==============================] - 1s 3ms/step - loss: 0.2801 -
mean_absolute_error: 0.3379 - mean_squared_error: 0.2263 - rmse: 0.4718 -
mean_absolute_percentage_error: 190.3912
Epoch 4/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2643 -
mean_absolute_error: 0.3303 - mean_squared_error: 0.2182 - rmse: 0.4632 -
mean_absolute_percentage_error: 192.0415
Epoch 5/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2573 -
mean_absolute_error: 0.3284 - mean_squared_error: 0.2157 - rmse: 0.4608 -
mean_absolute_percentage_error: 183.0669
Epoch 6/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2521 -
mean_absolute_error: 0.3258 - mean_squared_error: 0.2130 - rmse: 0.4578 -
mean_absolute_percentage_error: 183.2653
Epoch 7/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2453 -
mean_absolute_error: 0.3222 - mean_squared_error: 0.2083 - rmse: 0.4523 -
mean_absolute_percentage_error: 187.6648
Epoch 8/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2442 -
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mean_absolute_error: 0.3224 - mean_squared_error: 0.2081 - rmse: 0.4528 -
mean_absolute_percentage_error: 186.2559
Epoch 9/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2390 -
mean_absolute_error: 0.3185 - mean_squared_error: 0.2045 - rmse: 0.4486 -
mean_absolute_percentage_error: 185.1179
Epoch 10/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2357 -
mean_absolute_error: 0.3150 - mean_squared_error: 0.2018 - rmse: 0.4454 -
mean_absolute_percentage_error: 182.0288
Epoch 11/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2349 -
mean_absolute_error: 0.3146 - mean_squared_error: 0.2017 - rmse: 0.4454 -
mean_absolute_percentage_error: 182.5902
Epoch 12/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2336 -
mean_absolute_error: 0.3145 - mean_squared_error: 0.2007 - rmse: 0.4433 -
mean_absolute_percentage_error: 189.1384
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2289 -
mean_absolute_error: 0.3101 - mean_squared_error: 0.1966 - rmse: 0.4395 -
mean_absolute_percentage_error: 182.2551
Epoch 14/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2304 -
mean_absolute_error: 0.3101 - mean_squared_error: 0.1984 - rmse: 0.4406 -
mean_absolute_percentage_error: 181.2327
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2273 -
mean_absolute_error: 0.3087 - mean_squared_error: 0.1953 - rmse: 0.4384 -
mean_absolute_percentage_error: 173.4466
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2289 -
mean_absolute_error: 0.3111 - mean_squared_error: 0.1972 - rmse: 0.4394 -
mean_absolute_percentage_error: 182.5492
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2252 -
mean_absolute_error: 0.3067 - mean_squared_error: 0.1938 - rmse: 0.4359 -
mean_absolute_percentage_error: 177.4449
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2251 -
mean_absolute_error: 0.3069 - mean_squared_error: 0.1940 - rmse: 0.4374 -
mean_absolute_percentage_error: 178.0358
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2229 -
mean_absolute_error: 0.3047 - mean_squared_error: 0.1921 - rmse: 0.4345 -
mean_absolute_percentage_error: 181.3176
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2206 -
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mean_absolute_error: 0.3041 - mean_squared_error: 0.1900 - rmse: 0.4321 -
mean_absolute_percentage_error: 179.3617
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2206 -
mean_absolute_error: 0.3029 - mean_squared_error: 0.1902 - rmse: 0.4322 -
mean_absolute_percentage_error: 175.3535
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2200 -
mean_absolute_error: 0.3032 - mean_squared_error: 0.1894 - rmse: 0.4321 -
mean_absolute_percentage_error: 176.9415
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2165 -
mean_absolute_error: 0.2995 - mean_squared_error: 0.1864 - rmse: 0.4280 -
mean_absolute_percentage_error: 174.2496
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2162 -
mean_absolute_error: 0.3006 - mean_squared_error: 0.1862 - rmse: 0.4279 -
mean_absolute_percentage_error: 176.3365
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2191 -
mean_absolute_error: 0.3023 - mean_squared_error: 0.1892 - rmse: 0.4309 -
mean_absolute_percentage_error: 175.8863
Epoch 26/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2148 -
mean_absolute_error: 0.2992 - mean_squared_error: 0.1849 - rmse: 0.4267 -
mean_absolute_percentage_error: 175.7736
Epoch 27/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2147 -
mean_absolute_error: 0.2981 - mean_squared_error: 0.1852 - rmse: 0.4261 -
mean_absolute_percentage_error: 172.7604
Epoch 28/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2121 -
mean_absolute_error: 0.2960 - mean_squared_error: 0.1826 - rmse: 0.4237 -
mean_absolute_percentage_error: 174.2366
Epoch 29/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2121 -
mean_absolute_error: 0.2961 - mean_squared_error: 0.1828 - rmse: 0.4232 -
mean_absolute_percentage_error: 173.5547
Epoch 30/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2138 -
mean_absolute_error: 0.2983 - mean_squared_error: 0.1845 - rmse: 0.4251 -
mean_absolute_percentage_error: 171.5132
Epoch 31/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2121 -
mean_absolute_error: 0.2968 - mean_squared_error: 0.1831 - rmse: 0.4229 -
mean_absolute_percentage_error: 171.7498
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2133 -
```

```
mean_absolute_error: 0.2974 - mean_squared_error: 0.1842 - rmse: 0.4255 -
mean_absolute_percentage_error: 168.1197
Epoch 33/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2127 -
mean_absolute_error: 0.2989 - mean_squared_error: 0.1838 - rmse: 0.4255 -
mean_absolute_percentage_error: 168.1471
Epoch 34/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2088 -
mean_absolute_error: 0.2940 - mean_squared_error: 0.1801 - rmse: 0.4203 -
mean_absolute_percentage_error: 166.9777
Epoch 35/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2096 -
mean_absolute_error: 0.2956 - mean_squared_error: 0.1812 - rmse: 0.4216 -
mean_absolute_percentage_error: 168.8387
Epoch 36/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2078 -
mean_absolute_error: 0.2939 - mean_squared_error: 0.1793 - rmse: 0.4197 -
mean_absolute_percentage_error: 176.0213
Epoch 37/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2110 -
mean_absolute_error: 0.2969 - mean_squared_error: 0.1826 - rmse: 0.4232 -
mean_absolute_percentage_error: 170.1400
Epoch 38/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2063 -
mean_absolute_error: 0.2930 - mean_squared_error: 0.1780 - rmse: 0.4177 -
mean_absolute_percentage_error: 167.9561
Epoch 39/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2059 -
mean_absolute_error: 0.2922 - mean_squared_error: 0.1776 - rmse: 0.4175 -
mean_absolute_percentage_error: 169.7307
Epoch 40/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2066 -
mean_absolute_error: 0.2930 - mean_squared_error: 0.1786 - rmse: 0.4176 -
mean_absolute_percentage_error: 172.5782
Epoch 41/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2060 -
mean_absolute_error: 0.2925 - mean_squared_error: 0.1779 - rmse: 0.4174 -
mean_absolute_percentage_error: 171.2636
Epoch 42/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2084 -
mean_absolute_error: 0.2936 - mean_squared_error: 0.1804 - rmse: 0.4213 -
mean_absolute_percentage_error: 169.2306
Epoch 43/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2086 -
mean_absolute_error: 0.2945 - mean_squared_error: 0.1806 - rmse: 0.4200 -
mean_absolute_percentage_error: 166.0278
Epoch 44/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2054 -
```

```
mean_absolute_error: 0.2914 - mean_squared_error: 0.1775 - rmse: 0.4172 -
mean_absolute_percentage_error: 169.4674
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2039 -
mean_absolute_error: 0.2907 - mean_squared_error: 0.1762 - rmse: 0.4163 -
mean_absolute_percentage_error: 170.9991
Epoch 46/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2032 -
mean_absolute_error: 0.2896 - mean_squared_error: 0.1756 - rmse: 0.4150 -
mean_absolute_percentage_error: 167.3415
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2033 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1759 - rmse: 0.4155 -
mean_absolute_percentage_error: 166.7986
Epoch 48/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2074 -
mean_absolute_error: 0.2932 - mean_squared_error: 0.1799 - rmse: 0.4202 -
mean_absolute_percentage_error: 168.0534
Epoch 49/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2016 -
mean_absolute_error: 0.2885 - mean_squared_error: 0.1742 - rmse: 0.4131 -
mean_absolute_percentage_error: 167.7580
Epoch 50/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2049 -
mean_absolute_error: 0.2914 - mean_squared_error: 0.1775 - rmse: 0.4169 -
mean_absolute_percentage_error: 168.7230
Epoch 51/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2038 -
mean_absolute_error: 0.2898 - mean_squared_error: 0.1764 - rmse: 0.4164 -
mean_absolute_percentage_error: 169.4656
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2001 -
mean_absolute_error: 0.2878 - mean_squared_error: 0.1727 - rmse: 0.4111 -
mean_absolute_percentage_error: 168.7984
Epoch 53/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2041 -
mean_absolute_error: 0.2905 - mean_squared_error: 0.1767 - rmse: 0.4162 -
mean_absolute_percentage_error: 165.7154
Epoch 54/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2001 -
mean_absolute_error: 0.2861 - mean_squared_error: 0.1729 - rmse: 0.4119 -
mean_absolute_percentage_error: 166.1668
Epoch 55/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1996 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1724 - rmse: 0.4120 -
mean_absolute_percentage_error: 168.1806
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2008 -
```

```
mean_absolute_error: 0.2878 - mean_squared_error: 0.1736 - rmse: 0.4123 -
mean_absolute_percentage_error: 171.8060
Epoch 57/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1998 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1727 - rmse: 0.4118 -
mean_absolute_percentage_error: 170.9464
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1987 -
mean_absolute_error: 0.2861 - mean_squared_error: 0.1716 - rmse: 0.4107 -
mean_absolute_percentage_error: 165.9058
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1979 -
mean_absolute_error: 0.2842 - mean_squared_error: 0.1709 - rmse: 0.4085 -
mean_absolute_percentage_error: 162.9033
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2022 -
mean_absolute_error: 0.2886 - mean_squared_error: 0.1752 - rmse: 0.4142 -
mean_absolute_percentage_error: 166.0182
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1994 -
mean_absolute_error: 0.2856 - mean_squared_error: 0.1726 - rmse: 0.4117 -
mean_absolute_percentage_error: 167.8850
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1987 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1720 - rmse: 0.4105 -
mean_absolute_percentage_error: 166.9313
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1988 -
mean_absolute_error: 0.2863 - mean_squared_error: 0.1722 - rmse: 0.4100 -
mean_absolute_percentage_error: 168.4268
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1998 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1733 - rmse: 0.4116 -
mean_absolute_percentage_error: 169.2807
Epoch 65/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1998 -
mean_absolute_error: 0.2867 - mean_squared_error: 0.1733 - rmse: 0.4127 -
mean_absolute_percentage_error: 165.9405
Epoch 66/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1977 -
mean_absolute_error: 0.2856 - mean_squared_error: 0.1711 - rmse: 0.4093 -
mean_absolute_percentage_error: 169.6488
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2002 -
mean_absolute_error: 0.2869 - mean_squared_error: 0.1736 - rmse: 0.4130 -
mean_absolute_percentage_error: 163.0088
Epoch 68/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1953 -
```

```
mean_absolute_error: 0.2824 - mean_squared_error: 0.1689 - rmse: 0.4064 -
mean_absolute_percentage_error: 163.9713
Epoch 69/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1958 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1695 - rmse: 0.4075 -
mean_absolute_percentage_error: 165.1416
Epoch 70/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1969 -
mean_absolute_error: 0.2847 - mean_squared_error: 0.1707 - rmse: 0.4090 -
mean_absolute_percentage_error: 164.0715
Epoch 71/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1960 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1697 - rmse: 0.4081 -
mean_absolute_percentage_error: 161.8248
Epoch 72/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1950 -
mean_absolute_error: 0.2831 - mean_squared_error: 0.1688 - rmse: 0.4064 -
mean_absolute_percentage_error: 170.5412
Epoch 73/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1948 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1685 - rmse: 0.4068 -
mean_absolute_percentage_error: 160.8696
Epoch 74/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1944 -
mean_absolute_error: 0.2822 - mean_squared_error: 0.1682 - rmse: 0.4056 -
mean_absolute_percentage_error: 169.0211
Epoch 75/100
210/210 [==============================] - 1s 3ms/step - loss: 0.1947 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1685 - rmse: 0.4063 -
mean_absolute_percentage_error: 164.4598
Epoch 76/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1983 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1721 - rmse: 0.4103 -
mean_absolute_percentage_error: 168.7529
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2826 - mean_squared_error: 0.1690 - rmse: 0.4062 -
mean_absolute_percentage_error: 164.2360
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1933 -
mean_absolute_error: 0.2811 - mean_squared_error: 0.1673 - rmse: 0.4037 -
mean_absolute_percentage_error: 163.4751
Epoch 79/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1938 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1678 - rmse: 0.4056 -
mean_absolute_percentage_error: 166.3481
Epoch 80/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1937 -
```

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mean_absolute_error: 0.2815 - mean_squared_error: 0.1677 - rmse: 0.4056 -
mean_absolute_percentage_error: 161.6221
Epoch 81/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1921 -
mean_absolute_error: 0.2804 - mean_squared_error: 0.1663 - rmse: 0.4034 -
mean_absolute_percentage_error: 162.3402
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1918 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1660 - rmse: 0.4035 -
mean_absolute_percentage_error: 165.9022
Epoch 83/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1906 -
mean_absolute_error: 0.2781 - mean_squared_error: 0.1649 - rmse: 0.4015 -
mean_absolute_percentage_error: 165.1180
Epoch 84/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1928 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1670 - rmse: 0.4041 -
mean_absolute_percentage_error: 158.5757
Epoch 85/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1934 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1676 - rmse: 0.4048 -
mean_absolute_percentage_error: 166.1146
Epoch 86/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1930 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1674 - rmse: 0.4057 -
mean_absolute_percentage_error: 165.4865
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1923 -
mean_absolute_error: 0.2790 - mean_squared_error: 0.1667 - rmse: 0.4035 -
mean_absolute_percentage_error: 164.0301
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1925 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1670 - rmse: 0.4041 -
mean_absolute_percentage_error: 159.4189
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1906 -
mean_absolute_error: 0.2792 - mean_squared_error: 0.1649 - rmse: 0.4022 -
mean_absolute_percentage_error: 164.1265
Epoch 90/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1942 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1686 - rmse: 0.4051 -
mean_absolute_percentage_error: 159.1288
Epoch 91/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1901 -
mean_absolute_error: 0.2783 - mean_squared_error: 0.1645 - rmse: 0.4015 -
mean_absolute_percentage_error: 162.6446
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1904 -
```

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mean_absolute_error: 0.2775 - mean_squared_error: 0.1647 - rmse: 0.4020 -
mean_absolute_percentage_error: 162.8864
Epoch 93/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1929 -
mean_absolute_error: 0.2816 - mean_squared_error: 0.1674 - rmse: 0.4045 -
mean_absolute_percentage_error: 160.8354
Epoch 94/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1932 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1676 - rmse: 0.4051 -
mean_absolute_percentage_error: 162.6865
Epoch 95/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1931 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1675 - rmse: 0.4042 -
mean_absolute_percentage_error: 164.6961
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1912 -
mean_absolute_error: 0.2784 - mean_squared_error: 0.1657 - rmse: 0.4026 -
mean_absolute_percentage_error: 160.2980
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1908 -
mean_absolute_error: 0.2786 - mean_squared_error: 0.1654 - rmse: 0.4018 -
mean_absolute_percentage_error: 160.5181
Epoch 98/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1909 -
mean_absolute_error: 0.2789 - mean_squared_error: 0.1655 - rmse: 0.4034 -
mean_absolute_percentage_error: 167.4168
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1921 -
mean_absolute_error: 0.2801 - mean_squared_error: 0.1667 - rmse: 0.4032 -
mean_absolute_percentage_error: 161.6791
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1907 -
mean_absolute_error: 0.2798 - mean_squared_error: 0.1653 - rmse: 0.4023 -
mean_absolute_percentage_error: 162.6708
100/100 [==============================] - 0s 1ms/step - loss: 0.1889 -
mean_absolute_error: 0.2730 - mean_squared_error: 0.1637 - rmse: 0.3988 -
mean_absolute_percentage_error: 157.2176
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1L2
------------------------------------------------------------------------
Training for fold 5 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4568 -
mean_absolute_error: 0.4344 - mean_squared_error: 0.3423 - rmse: 0.5750 -
mean_absolute_percentage_error: 185.6205
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3095 -
mean_absolute_error: 0.3478 - mean_squared_error: 0.2376 - rmse: 0.4836 -
```

```
mean_absolute_percentage_error: 177.2094
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2831 -
mean_absolute_error: 0.3406 - mean_squared_error: 0.2283 - rmse: 0.4737 -
mean_absolute_percentage_error: 175.6477
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2702 -
mean_absolute_error: 0.3361 - mean_squared_error: 0.2228 - rmse: 0.4681 -
mean_absolute_percentage_error: 173.0814
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2594 -
mean_absolute_error: 0.3290 - mean_squared_error: 0.2165 - rmse: 0.4616 -
mean_absolute_percentage_error: 175.4980
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2560 -
mean_absolute_error: 0.3302 - mean_squared_error: 0.2159 - rmse: 0.4607 -
mean_absolute_percentage_error: 177.8887
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2509 -
mean_absolute_error: 0.3259 - mean_squared_error: 0.2129 - rmse: 0.4588 -
mean_absolute_percentage_error: 176.6632
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2457 -
mean_absolute_error: 0.3226 - mean_squared_error: 0.2094 - rmse: 0.4536 -
mean_absolute_percentage_error: 174.5949
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2444 -
mean_absolute_error: 0.3219 - mean_squared_error: 0.2093 - rmse: 0.4544 -
mean_absolute_percentage_error: 172.0852
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2417 -
mean_absolute_error: 0.3205 - mean_squared_error: 0.2074 - rmse: 0.4518 -
mean_absolute_percentage_error: 173.8482
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2395 -
mean_absolute_error: 0.3185 - mean_squared_error: 0.2062 - rmse: 0.4505 -
mean_absolute_percentage_error: 168.8340
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2367 -
mean_absolute_error: 0.3174 - mean_squared_error: 0.2043 - rmse: 0.4484 -
mean_absolute_percentage_error: 172.8958
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2338 -
mean_absolute_error: 0.3147 - mean_squared_error: 0.2018 - rmse: 0.4453 -
mean_absolute_percentage_error: 168.7971
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2345 -
mean_absolute_error: 0.3174 - mean_squared_error: 0.2030 - rmse: 0.4467 -
```

```
mean_absolute_percentage_error: 173.3188
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2308 -
mean_absolute_error: 0.3144 - mean_squared_error: 0.1998 - rmse: 0.4431 -
mean_absolute_percentage_error: 169.8151
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2312 -
mean_absolute_error: 0.3145 - mean_squared_error: 0.2004 - rmse: 0.4442 -
mean_absolute_percentage_error: 170.0334
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2293 -
mean_absolute_error: 0.3112 - mean_squared_error: 0.1985 - rmse: 0.4423 -
mean_absolute_percentage_error: 169.7598
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2277 -
mean_absolute_error: 0.3105 - mean_squared_error: 0.1971 - rmse: 0.4395 -
mean_absolute_percentage_error: 164.6279
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2264 -
mean_absolute_error: 0.3100 - mean_squared_error: 0.1958 - rmse: 0.4387 -
mean_absolute_percentage_error: 164.6823
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2309 -
mean_absolute_error: 0.3134 - mean_squared_error: 0.2001 - rmse: 0.4426 -
mean_absolute_percentage_error: 166.9446
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2225 -
mean_absolute_error: 0.3057 - mean_squared_error: 0.1922 - rmse: 0.4339 -
mean_absolute_percentage_error: 164.5093
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2237 -
mean_absolute_error: 0.3073 - mean_squared_error: 0.1934 - rmse: 0.4365 -
mean_absolute_percentage_error: 168.4645
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2207 -
mean_absolute_error: 0.3041 - mean_squared_error: 0.1908 - rmse: 0.4330 -
mean_absolute_percentage_error: 167.9149
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2235 -
mean_absolute_error: 0.3068 - mean_squared_error: 0.1937 - rmse: 0.4358 -
mean_absolute_percentage_error: 164.7898
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2209 -
mean_absolute_error: 0.3043 - mean_squared_error: 0.1914 - rmse: 0.4332 -
mean_absolute_percentage_error: 160.7376
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2190 -
mean_absolute_error: 0.3032 - mean_squared_error: 0.1896 - rmse: 0.4313 -
```

```
mean_absolute_percentage_error: 165.3223
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2198 -
mean_absolute_error: 0.3033 - mean_squared_error: 0.1904 - rmse: 0.4314 -
mean_absolute_percentage_error: 164.4955
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2197 -
mean_absolute_error: 0.3033 - mean_squared_error: 0.1905 - rmse: 0.4322 -
mean_absolute_percentage_error: 167.6576
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2185 -
mean_absolute_error: 0.3026 - mean_squared_error: 0.1895 - rmse: 0.4315 -
mean_absolute_percentage_error: 163.0781
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2139 -
mean_absolute_error: 0.2986 - mean_squared_error: 0.1850 - rmse: 0.4255 -
mean_absolute_percentage_error: 162.1343
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2154 -
mean_absolute_error: 0.3005 - mean_squared_error: 0.1868 - rmse: 0.4279 -
mean_absolute_percentage_error: 165.4132
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2139 -
mean_absolute_error: 0.2991 - mean_squared_error: 0.1854 - rmse: 0.4264 -
mean_absolute_percentage_error: 163.5433
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2134 -
mean_absolute_error: 0.2994 - mean_squared_error: 0.1852 - rmse: 0.4265 -
mean_absolute_percentage_error: 163.2859
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2130 -
mean_absolute_error: 0.2992 - mean_squared_error: 0.1849 - rmse: 0.4257 -
mean_absolute_percentage_error: 158.1678
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2129 -
mean_absolute_error: 0.2982 - mean_squared_error: 0.1848 - rmse: 0.4257 -
mean_absolute_percentage_error: 161.3094
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2132 -
mean_absolute_error: 0.2982 - mean_squared_error: 0.1853 - rmse: 0.4267 -
mean_absolute_percentage_error: 160.4222
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2116 -
mean_absolute_error: 0.2971 - mean_squared_error: 0.1837 - rmse: 0.4237 -
mean_absolute_percentage_error: 160.3325
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2111 -
mean_absolute_error: 0.2958 - mean_squared_error: 0.1832 - rmse: 0.4235 -
```

```
mean_absolute_percentage_error: 161.6651
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2118 -
mean_absolute_error: 0.2968 - mean_squared_error: 0.1841 - rmse: 0.4248 -
mean_absolute_percentage_error: 161.8783
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2102 -
mean_absolute_error: 0.2955 - mean_squared_error: 0.1826 - rmse: 0.4228 -
mean_absolute_percentage_error: 160.9824
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2092 -
mean_absolute_error: 0.2936 - mean_squared_error: 0.1815 - rmse: 0.4209 -
mean_absolute_percentage_error: 162.4280
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2093 -
mean_absolute_error: 0.2953 - mean_squared_error: 0.1817 - rmse: 0.4214 -
mean_absolute_percentage_error: 155.6563
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2077 -
mean_absolute_error: 0.2935 - mean_squared_error: 0.1802 - rmse: 0.4204 -
mean_absolute_percentage_error: 154.0754
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2083 -
mean_absolute_error: 0.2934 - mean_squared_error: 0.1809 - rmse: 0.4212 -
mean_absolute_percentage_error: 159.0588
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2090 -
mean_absolute_error: 0.2943 - mean_squared_error: 0.1815 - rmse: 0.4220 -
mean_absolute_percentage_error: 158.5169
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2121 -
mean_absolute_error: 0.2966 - mean_squared_error: 0.1847 - rmse: 0.4259 -
mean_absolute_percentage_error: 160.3915
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2061 -
mean_absolute_error: 0.2914 - mean_squared_error: 0.1790 - rmse: 0.4180 -
mean_absolute_percentage_error: 156.9665
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2102 -
mean_absolute_error: 0.2952 - mean_squared_error: 0.1830 - rmse: 0.4231 -
mean_absolute_percentage_error: 158.8927
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2067 -
mean_absolute_error: 0.2924 - mean_squared_error: 0.1796 - rmse: 0.4191 -
mean_absolute_percentage_error: 161.2558
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2070 -
mean_absolute_error: 0.2920 - mean_squared_error: 0.1800 - rmse: 0.4194 -
```

```
mean_absolute_percentage_error: 162.7403
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2064 -
mean_absolute_error: 0.2920 - mean_squared_error: 0.1795 - rmse: 0.4194 -
mean_absolute_percentage_error: 153.8736
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2050 -
mean_absolute_error: 0.2914 - mean_squared_error: 0.1782 - rmse: 0.4185 -
mean_absolute_percentage_error: 158.1717
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2050 -
mean_absolute_error: 0.2913 - mean_squared_error: 0.1779 - rmse: 0.4176 -
mean_absolute_percentage_error: 156.1831
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2029 -
mean_absolute_error: 0.2883 - mean_squared_error: 0.1759 - rmse: 0.4154 -
mean_absolute_percentage_error: 156.6693
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2051 -
mean_absolute_error: 0.2909 - mean_squared_error: 0.1781 - rmse: 0.4180 -
mean_absolute_percentage_error: 159.4194
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2049 -
mean_absolute_error: 0.2900 - mean_squared_error: 0.1782 - rmse: 0.4174 -
mean_absolute_percentage_error: 154.8179
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2030 -
mean_absolute_error: 0.2896 - mean_squared_error: 0.1763 - rmse: 0.4162 -
mean_absolute_percentage_error: 159.1620
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2026 -
mean_absolute_error: 0.2886 - mean_squared_error: 0.1759 - rmse: 0.4155 -
mean_absolute_percentage_error: 155.0462
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2086 -
mean_absolute_error: 0.2937 - mean_squared_error: 0.1819 - rmse: 0.4224 -
mean_absolute_percentage_error: 160.0313
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2009 -
mean_absolute_error: 0.2879 - mean_squared_error: 0.1742 - rmse: 0.4130 -
mean_absolute_percentage_error: 153.6413
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2018 -
mean_absolute_error: 0.2883 - mean_squared_error: 0.1751 - rmse: 0.4142 -
mean_absolute_percentage_error: 158.7003
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2019 -
mean_absolute_error: 0.2877 - mean_squared_error: 0.1751 - rmse: 0.4135 -
```

```
mean_absolute_percentage_error: 153.6617
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2003 -
mean_absolute_error: 0.2867 - mean_squared_error: 0.1738 - rmse: 0.4121 -
mean_absolute_percentage_error: 156.3007
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2009 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1743 - rmse: 0.4140 -
mean_absolute_percentage_error: 153.4268
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2042 -
mean_absolute_error: 0.2898 - mean_squared_error: 0.1776 - rmse: 0.4172 -
mean_absolute_percentage_error: 152.6423
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1996 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1731 - rmse: 0.4124 -
mean_absolute_percentage_error: 151.2407
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1999 -
mean_absolute_error: 0.2857 - mean_squared_error: 0.1734 - rmse: 0.4120 -
mean_absolute_percentage_error: 152.9368
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1999 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1735 - rmse: 0.4123 -
mean_absolute_percentage_error: 159.7790
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2025 -
mean_absolute_error: 0.2890 - mean_squared_error: 0.1762 - rmse: 0.4159 -
mean_absolute_percentage_error: 154.6740
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2004 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1743 - rmse: 0.4139 -
mean_absolute_percentage_error: 158.3063
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1989 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1728 - rmse: 0.4118 -
mean_absolute_percentage_error: 152.2631
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1993 -
mean_absolute_error: 0.2858 - mean_squared_error: 0.1732 - rmse: 0.4117 -
mean_absolute_percentage_error: 154.6836
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2006 -
mean_absolute_error: 0.2878 - mean_squared_error: 0.1746 - rmse: 0.4139 -
mean_absolute_percentage_error: 157.5050
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2006 -
mean_absolute_error: 0.2886 - mean_squared_error: 0.1747 - rmse: 0.4137 -
```

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mean_absolute_percentage_error: 158.4551
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1977 -
mean_absolute_error: 0.2845 - mean_squared_error: 0.1718 - rmse: 0.4099 -
mean_absolute_percentage_error: 153.9561
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1983 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1724 - rmse: 0.4112 -
mean_absolute_percentage_error: 154.1059
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1985 -
mean_absolute_error: 0.2857 - mean_squared_error: 0.1727 - rmse: 0.4118 -
mean_absolute_percentage_error: 150.7624
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1965 -
mean_absolute_error: 0.2841 - mean_squared_error: 0.1709 - rmse: 0.4089 -
mean_absolute_percentage_error: 151.9234
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1995 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1737 - rmse: 0.4125 -
mean_absolute_percentage_error: 152.5479
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1961 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1704 - rmse: 0.4083 -
mean_absolute_percentage_error: 154.6108
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1694 - rmse: 0.4068 -
mean_absolute_percentage_error: 151.6778
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1954 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1697 - rmse: 0.4086 -
mean_absolute_percentage_error: 156.5870
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1982 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1725 - rmse: 0.4109 -
mean_absolute_percentage_error: 151.8029
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1960 -
mean_absolute_error: 0.2839 - mean_squared_error: 0.1704 - rmse: 0.4093 -
mean_absolute_percentage_error: 151.3028
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1689 - rmse: 0.4075 -
mean_absolute_percentage_error: 153.4759
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1942 -
mean_absolute_error: 0.2823 - mean_squared_error: 0.1688 - rmse: 0.4050 -
```

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mean_absolute_percentage_error: 154.8536
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1947 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1693 - rmse: 0.4070 -
mean_absolute_percentage_error: 153.1604
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1928 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1675 - rmse: 0.4053 -
mean_absolute_percentage_error: 149.7092
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1933 -
mean_absolute_error: 0.2815 - mean_squared_error: 0.1681 - rmse: 0.4061 -
mean_absolute_percentage_error: 152.6476
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1945 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1693 - rmse: 0.4066 -
mean_absolute_percentage_error: 152.0793
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1949 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1698 - rmse: 0.4079 -
mean_absolute_percentage_error: 155.5156
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1982 -
mean_absolute_error: 0.2849 - mean_squared_error: 0.1729 - rmse: 0.4118 -
mean_absolute_percentage_error: 149.6630
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1974 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1722 - rmse: 0.4102 -
mean_absolute_percentage_error: 151.3386
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1934 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1682 - rmse: 0.4054 -
mean_absolute_percentage_error: 151.4890
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1938 -
mean_absolute_error: 0.2812 - mean_squared_error: 0.1686 - rmse: 0.4064 -
mean_absolute_percentage_error: 148.9809
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1991 -
mean_absolute_error: 0.2861 - mean_squared_error: 0.1739 - rmse: 0.4122 -
mean_absolute_percentage_error: 152.8613
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1918 -
mean_absolute_error: 0.2811 - mean_squared_error: 0.1667 - rmse: 0.4043 -
mean_absolute_percentage_error: 152.5567
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1956 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1706 - rmse: 0.4097 -
```

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mean_absolute_percentage_error: 151.4478
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1676 - rmse: 0.4043 -
mean_absolute_percentage_error: 156.1176
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1950 -
mean_absolute_error: 0.2826 - mean_squared_error: 0.1700 - rmse: 0.4081 -
mean_absolute_percentage_error: 157.7737
100/100 [==============================] - 0s 1ms/step - loss: 0.2148 -
mean_absolute_error: 0.3078 - mean_squared_error: 0.1897 - rmse: 0.4306 -
mean_absolute_percentage_error: 177.7371
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1L2
--------------------------------------------------------------------------------
Training for fold 6 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4788 -
mean_absolute_error: 0.4633 - mean_squared_error: 0.3664 - rmse: 0.5929 -
mean_absolute_percentage_error: 203.1348
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3150 -
mean_absolute_error: 0.3555 - mean_squared_error: 0.2465 - rmse: 0.4929 -
mean_absolute_percentage_error: 186.7875
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2837 -
mean_absolute_error: 0.3428 - mean_squared_error: 0.2312 - rmse: 0.4777 -
mean_absolute_percentage_error: 188.6583
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2682 -
mean_absolute_error: 0.3331 - mean_squared_error: 0.2231 - rmse: 0.4690 -
mean_absolute_percentage_error: 190.4557
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2603 -
mean_absolute_error: 0.3299 - mean_squared_error: 0.2187 - rmse: 0.4639 -
mean_absolute_percentage_error: 190.0538
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2575 -
mean_absolute_error: 0.3286 - mean_squared_error: 0.2186 - rmse: 0.4629 -
mean_absolute_percentage_error: 191.4440
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2531 -
mean_absolute_error: 0.3266 - mean_squared_error: 0.2155 - rmse: 0.4605 -
mean_absolute_percentage_error: 185.4984
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2493 -
mean_absolute_error: 0.3230 - mean_squared_error: 0.2124 - rmse: 0.4563 -
mean_absolute_percentage_error: 186.9574
```

```
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2433 -
mean_absolute_error: 0.3183 - mean_squared_error: 0.2076 - rmse: 0.4512 -
mean_absolute_percentage_error: 186.0718
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2397 -
mean_absolute_error: 0.3157 - mean_squared_error: 0.2046 - rmse: 0.4485 -
mean_absolute_percentage_error: 185.1445
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2399 -
mean_absolute_error: 0.3167 - mean_squared_error: 0.2055 - rmse: 0.4485 -
mean_absolute_percentage_error: 182.6450
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2392 -
mean_absolute_error: 0.3172 - mean_squared_error: 0.2052 - rmse: 0.4490 -
mean_absolute_percentage_error: 184.6039
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2359 -
mean_absolute_error: 0.3135 - mean_squared_error: 0.2026 - rmse: 0.4458 -
mean_absolute_percentage_error: 183.6503
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2309 -
mean_absolute_error: 0.3085 - mean_squared_error: 0.1979 - rmse: 0.4403 -
mean_absolute_percentage_error: 180.5809
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2276 -
mean_absolute_error: 0.3062 - mean_squared_error: 0.1952 - rmse: 0.4376 -
mean_absolute_percentage_error: 179.3125
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2290 -
mean_absolute_error: 0.3067 - mean_squared_error: 0.1967 - rmse: 0.4391 -
mean_absolute_percentage_error: 179.5214
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2275 -
mean_absolute_error: 0.3060 - mean_squared_error: 0.1953 - rmse: 0.4367 -
mean_absolute_percentage_error: 180.0099
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2271 -
mean_absolute_error: 0.3059 - mean_squared_error: 0.1953 - rmse: 0.4378 -
mean_absolute_percentage_error: 177.6409
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2242 -
mean_absolute_error: 0.3042 - mean_squared_error: 0.1926 - rmse: 0.4341 -
mean_absolute_percentage_error: 175.4084
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2230 -
mean_absolute_error: 0.3030 - mean_squared_error: 0.1915 - rmse: 0.4337 -
mean_absolute_percentage_error: 176.3222
```

```
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2251 -
mean_absolute_error: 0.3038 - mean_squared_error: 0.1938 - rmse: 0.4353 -
mean_absolute_percentage_error: 173.1761
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2206 -
mean_absolute_error: 0.3004 - mean_squared_error: 0.1897 - rmse: 0.4317 -
mean_absolute_percentage_error: 176.3272
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2186 -
mean_absolute_error: 0.2986 - mean_squared_error: 0.1879 - rmse: 0.4294 -
mean_absolute_percentage_error: 173.6167
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2179 -
mean_absolute_error: 0.2981 - mean_squared_error: 0.1874 - rmse: 0.4284 -
mean_absolute_percentage_error: 174.2161
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2177 -
mean_absolute_error: 0.2990 - mean_squared_error: 0.1873 - rmse: 0.4283 -
mean_absolute_percentage_error: 172.1703
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2137 -
mean_absolute_error: 0.2935 - mean_squared_error: 0.1835 - rmse: 0.4235 -
mean_absolute_percentage_error: 174.2804
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2188 -
mean_absolute_error: 0.2983 - mean_squared_error: 0.1888 - rmse: 0.4297 -
mean_absolute_percentage_error: 169.7654
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2134 -
mean_absolute_error: 0.2950 - mean_squared_error: 0.1835 - rmse: 0.4241 -
mean_absolute_percentage_error: 171.8674
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2133 -
mean_absolute_error: 0.2946 - mean_squared_error: 0.1835 - rmse: 0.4237 -
mean_absolute_percentage_error: 173.8528
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2130 -
mean_absolute_error: 0.2946 - mean_squared_error: 0.1834 - rmse: 0.4231 -
mean_absolute_percentage_error: 170.9084
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2125 -
mean_absolute_error: 0.2936 - mean_squared_error: 0.1830 - rmse: 0.4238 -
mean_absolute_percentage_error: 169.7659
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2145 -
mean_absolute_error: 0.2954 - mean_squared_error: 0.1848 - rmse: 0.4262 -
mean_absolute_percentage_error: 176.3555
```

```
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2150 -
mean_absolute_error: 0.2956 - mean_squared_error: 0.1855 - rmse: 0.4260 -
mean_absolute_percentage_error: 169.9673
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2142 -
mean_absolute_error: 0.2952 - mean_squared_error: 0.1847 - rmse: 0.4240 -
mean_absolute_percentage_error: 174.7159
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2087 -
mean_absolute_error: 0.2907 - mean_squared_error: 0.1793 - rmse: 0.4191 -
mean_absolute_percentage_error: 169.7550
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2119 -
mean_absolute_error: 0.2936 - mean_squared_error: 0.1825 - rmse: 0.4232 -
mean_absolute_percentage_error: 175.3220
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2105 -
mean_absolute_error: 0.2931 - mean_squared_error: 0.1812 - rmse: 0.4211 -
mean_absolute_percentage_error: 167.3653
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2111 -
mean_absolute_error: 0.2927 - mean_squared_error: 0.1820 - rmse: 0.4214 -
mean_absolute_percentage_error: 168.2492
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2083 -
mean_absolute_error: 0.2913 - mean_squared_error: 0.1793 - rmse: 0.4191 -
mean_absolute_percentage_error: 170.4493
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2079 -
mean_absolute_error: 0.2910 - mean_squared_error: 0.1791 - rmse: 0.4186 -
mean_absolute_percentage_error: 173.7978
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2065 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1778 - rmse: 0.4177 -
mean_absolute_percentage_error: 165.6542
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2086 -
mean_absolute_error: 0.2905 - mean_squared_error: 0.1799 - rmse: 0.4203 -
mean_absolute_percentage_error: 175.4783
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2040 -
mean_absolute_error: 0.2877 - mean_squared_error: 0.1754 - rmse: 0.4152 -
mean_absolute_percentage_error: 171.4122
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2088 -
mean_absolute_error: 0.2912 - mean_squared_error: 0.1803 - rmse: 0.4201 -
mean_absolute_percentage_error: 171.4572
```

```
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2051 -
mean_absolute_error: 0.2886 - mean_squared_error: 0.1769 - rmse: 0.4171 -
mean_absolute_percentage_error: 164.7527
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2048 -
mean_absolute_error: 0.2884 - mean_squared_error: 0.1764 - rmse: 0.4152 -
mean_absolute_percentage_error: 167.5750
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2034 -
mean_absolute_error: 0.2870 - mean_squared_error: 0.1755 - rmse: 0.4160 -
mean_absolute_percentage_error: 171.1528
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2064 -
mean_absolute_error: 0.2908 - mean_squared_error: 0.1784 - rmse: 0.4178 -
mean_absolute_percentage_error: 167.5046
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2028 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1749 - rmse: 0.4140 -
mean_absolute_percentage_error: 162.8207
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2054 -
mean_absolute_error: 0.2882 - mean_squared_error: 0.1773 - rmse: 0.4176 -
mean_absolute_percentage_error: 168.0123
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2028 -
mean_absolute_error: 0.2863 - mean_squared_error: 0.1749 - rmse: 0.4139 -
mean_absolute_percentage_error: 168.1928
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1996 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1720 - rmse: 0.4109 -
mean_absolute_percentage_error: 167.9536
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2003 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1726 - rmse: 0.4116 -
mean_absolute_percentage_error: 166.5836
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2024 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1748 - rmse: 0.4135 -
mean_absolute_percentage_error: 164.3343
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2009 -
mean_absolute_error: 0.2853 - mean_squared_error: 0.1735 - rmse: 0.4118 -
mean_absolute_percentage_error: 164.5126
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2021 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1747 - rmse: 0.4135 -
mean_absolute_percentage_error: 170.9899
```

```
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1988 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1713 - rmse: 0.4100 -
mean_absolute_percentage_error: 161.9016
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2014 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1741 - rmse: 0.4131 -
mean_absolute_percentage_error: 167.1595
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2000 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1727 - rmse: 0.4118 -
mean_absolute_percentage_error: 163.4849
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1984 -
mean_absolute_error: 0.2836 - mean_squared_error: 0.1712 - rmse: 0.4083 -
mean_absolute_percentage_error: 171.5797
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1989 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1718 - rmse: 0.4106 -
mean_absolute_percentage_error: 163.8457
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1986 -
mean_absolute_error: 0.2830 - mean_squared_error: 0.1715 - rmse: 0.4089 -
mean_absolute_percentage_error: 167.8338
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1992 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1722 - rmse: 0.4104 -
mean_absolute_percentage_error: 167.0869
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1986 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1716 - rmse: 0.4096 -
mean_absolute_percentage_error: 157.9799
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1970 -
mean_absolute_error: 0.2824 - mean_squared_error: 0.1701 - rmse: 0.4074 -
mean_absolute_percentage_error: 164.7700
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1956 -
mean_absolute_error: 0.2812 - mean_squared_error: 0.1687 - rmse: 0.4063 -
mean_absolute_percentage_error: 159.3202
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1966 -
mean_absolute_error: 0.2830 - mean_squared_error: 0.1697 - rmse: 0.4077 -
mean_absolute_percentage_error: 161.7533
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1966 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1698 - rmse: 0.4081 -
mean_absolute_percentage_error: 161.0721
```

```
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1975 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1707 - rmse: 0.4085 -
mean_absolute_percentage_error: 168.3183
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1993 -
mean_absolute_error: 0.2839 - mean_squared_error: 0.1725 - rmse: 0.4108 -
mean_absolute_percentage_error: 167.4997
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1957 -
mean_absolute_error: 0.2824 - mean_squared_error: 0.1690 - rmse: 0.4065 -
mean_absolute_percentage_error: 164.9979
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1945 -
mean_absolute_error: 0.2801 - mean_squared_error: 0.1679 - rmse: 0.4051 -
mean_absolute_percentage_error: 162.7665
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1940 -
mean_absolute_error: 0.2805 - mean_squared_error: 0.1675 - rmse: 0.4040 -
mean_absolute_percentage_error: 167.7332
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1946 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1682 - rmse: 0.4065 -
mean_absolute_percentage_error: 168.4130
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1953 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1689 - rmse: 0.4071 -
mean_absolute_percentage_error: 161.2242
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1977 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1715 - rmse: 0.4105 -
mean_absolute_percentage_error: 155.0748
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2817 - mean_squared_error: 0.1682 - rmse: 0.4060 -
mean_absolute_percentage_error: 163.8778
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1939 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1678 - rmse: 0.4051 -
mean_absolute_percentage_error: 161.8112
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1934 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1672 - rmse: 0.4042 -
mean_absolute_percentage_error: 165.3905
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1938 -
mean_absolute_error: 0.2805 - mean_squared_error: 0.1677 - rmse: 0.4062 -
mean_absolute_percentage_error: 162.6374
```

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Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1913 -
mean_absolute_error: 0.2783 - mean_squared_error: 0.1653 - rmse: 0.4022 -
mean_absolute_percentage_error: 164.0025
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1940 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1680 - rmse: 0.4057 -
mean_absolute_percentage_error: 164.6595
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1920 -
mean_absolute_error: 0.2791 - mean_squared_error: 0.1660 - rmse: 0.4026 -
mean_absolute_percentage_error: 160.3472
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1913 -
mean_absolute_error: 0.2782 - mean_squared_error: 0.1654 - rmse: 0.4022 -
mean_absolute_percentage_error: 163.0600
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1928 -
mean_absolute_error: 0.2791 - mean_squared_error: 0.1670 - rmse: 0.4048 -
mean_absolute_percentage_error: 160.7756
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2811 - mean_squared_error: 0.1692 - rmse: 0.4067 -
mean_absolute_percentage_error: 161.0109
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1900 -
mean_absolute_error: 0.2759 - mean_squared_error: 0.1641 - rmse: 0.4012 -
mean_absolute_percentage_error: 157.7660
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1939 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1681 - rmse: 0.4049 -
mean_absolute_percentage_error: 162.7735
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1901 -
mean_absolute_error: 0.2776 - mean_squared_error: 0.1643 - rmse: 0.4009 -
mean_absolute_percentage_error: 161.2626
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1914 -
mean_absolute_error: 0.2776 - mean_squared_error: 0.1656 - rmse: 0.4017 -
mean_absolute_percentage_error: 157.2679
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1881 -
mean_absolute_error: 0.2750 - mean_squared_error: 0.1625 - rmse: 0.3988 -
mean_absolute_percentage_error: 162.2821
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1886 -
mean_absolute_error: 0.2766 - mean_squared_error: 0.1630 - rmse: 0.3993 -
mean_absolute_percentage_error: 159.8875
```

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Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1942 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1688 - rmse: 0.4063 -
mean_absolute_percentage_error: 161.9094
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2789 - mean_squared_error: 0.1663 - rmse: 0.4028 -
mean_absolute_percentage_error: 157.8449
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1948 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1691 - rmse: 0.4067 -
mean_absolute_percentage_error: 165.6141
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1893 -
mean_absolute_error: 0.2764 - mean_squared_error: 0.1637 - rmse: 0.4003 -
mean_absolute_percentage_error: 162.6380
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1899 -
mean_absolute_error: 0.2765 - mean_squared_error: 0.1643 - rmse: 0.4007 -
mean_absolute_percentage_error: 161.0639
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1916 -
mean_absolute_error: 0.2784 - mean_squared_error: 0.1661 - rmse: 0.4024 -
mean_absolute_percentage_error: 167.0691
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1902 -
mean_absolute_error: 0.2777 - mean_squared_error: 0.1647 - rmse: 0.4011 -
mean_absolute_percentage_error: 163.5498
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1894 -
mean_absolute_error: 0.2768 - mean_squared_error: 0.1640 - rmse: 0.4003 -
mean_absolute_percentage_error: 159.9139
100/100 [==============================] - 0s 1ms/step - loss: 0.2053 -
mean_absolute_error: 0.2905 - mean_squared_error: 0.1796 - rmse: 0.4187 -
mean_absolute_percentage_error: 157.9616
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1L2
-------------------------------------------------------------------------
Training for fold 7 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4520 -
mean_absolute_error: 0.4443 - mean_squared_error: 0.3448 - rmse: 0.5776 -
mean_absolute_percentage_error: 209.5254
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3080 -
mean_absolute_error: 0.3507 - mean_squared_error: 0.2410 - rmse: 0.4875 -
mean_absolute_percentage_error: 197.8771
Epoch 3/100
```

210/210 [==============================] - 0s 2ms/step - loss: 0.2795 - mean_absolute_error: 0.3380 - mean_squared_error: 0.2278 - rmse: 0.4732 - mean_absolute_percentage_error: 196.4375
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2664 - mean_absolute_error: 0.3315 - mean_squared_error: 0.2211 - rmse: 0.4667 - mean_absolute_percentage_error: 192.8304
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2600 - mean_absolute_error: 0.3300 - mean_squared_error: 0.2185 - rmse: 0.4634 - mean_absolute_percentage_error: 186.3028
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2511 - mean_absolute_error: 0.3246 - mean_squared_error: 0.2122 - rmse: 0.4559 - mean_absolute_percentage_error: 187.9255
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2486 - mean_absolute_error: 0.3238 - mean_squared_error: 0.2115 - rmse: 0.4554 - mean_absolute_percentage_error: 191.3001
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2450 - mean_absolute_error: 0.3220 - mean_squared_error: 0.2094 - rmse: 0.4535 - mean_absolute_percentage_error: 189.9464
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2406 - mean_absolute_error: 0.3175 - mean_squared_error: 0.2057 - rmse: 0.4497 - mean_absolute_percentage_error: 184.6584
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2418 - mean_absolute_error: 0.3206 - mean_squared_error: 0.2075 - rmse: 0.4514 - mean_absolute_percentage_error: 183.4317
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2388 - mean_absolute_error: 0.3188 - mean_squared_error: 0.2055 - rmse: 0.4493 - mean_absolute_percentage_error: 182.2960
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2331 - mean_absolute_error: 0.3150 - mean_squared_error: 0.2005 - rmse: 0.4441 - mean_absolute_percentage_error: 181.0175
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2316 - mean_absolute_error: 0.3130 - mean_squared_error: 0.1995 - rmse: 0.4432 - mean_absolute_percentage_error: 182.3795
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2298 - mean_absolute_error: 0.3113 - mean_squared_error: 0.1982 - rmse: 0.4413 - mean_absolute_percentage_error: 183.9423
Epoch 15/100

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210/210 [==============================] - 0s 2ms/step - loss: 0.2305 -
mean_absolute_error: 0.3130 - mean_squared_error: 0.1989 - rmse: 0.4418 -
mean_absolute_percentage_error: 180.7726
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2288 -
mean_absolute_error: 0.3107 - mean_squared_error: 0.1976 - rmse: 0.4404 -
mean_absolute_percentage_error: 181.6141
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2259 -
mean_absolute_error: 0.3087 - mean_squared_error: 0.1950 - rmse: 0.4373 -
mean_absolute_percentage_error: 180.5360
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2251 -
mean_absolute_error: 0.3077 - mean_squared_error: 0.1945 - rmse: 0.4366 -
mean_absolute_percentage_error: 182.2312
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2234 -
mean_absolute_error: 0.3052 - mean_squared_error: 0.1930 - rmse: 0.4350 -
mean_absolute_percentage_error: 176.3005
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2205 -
mean_absolute_error: 0.3038 - mean_squared_error: 0.1907 - rmse: 0.4324 -
mean_absolute_percentage_error: 179.8579
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2209 -
mean_absolute_error: 0.3047 - mean_squared_error: 0.1913 - rmse: 0.4334 -
mean_absolute_percentage_error: 180.1548
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2193 -
mean_absolute_error: 0.3033 - mean_squared_error: 0.1900 - rmse: 0.4326 -
mean_absolute_percentage_error: 178.0511
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2181 -
mean_absolute_error: 0.3022 - mean_squared_error: 0.1889 - rmse: 0.4317 -
mean_absolute_percentage_error: 171.8015
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2215 -
mean_absolute_error: 0.3052 - mean_squared_error: 0.1924 - rmse: 0.4340 -
mean_absolute_percentage_error: 176.3077
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2150 -
mean_absolute_error: 0.2997 - mean_squared_error: 0.1861 - rmse: 0.4275 -
mean_absolute_percentage_error: 178.3824
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2176 -
mean_absolute_error: 0.3018 - mean_squared_error: 0.1888 - rmse: 0.4299 -
mean_absolute_percentage_error: 176.2535
Epoch 27/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.2131 -
mean_absolute_error: 0.2982 - mean_squared_error: 0.1847 - rmse: 0.4255 -
mean_absolute_percentage_error: 179.1943
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2131 -
mean_absolute_error: 0.2981 - mean_squared_error: 0.1852 - rmse: 0.4264 -
mean_absolute_percentage_error: 177.0708
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2118 -
mean_absolute_error: 0.2968 - mean_squared_error: 0.1837 - rmse: 0.4249 -
mean_absolute_percentage_error: 171.0750
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2128 -
mean_absolute_error: 0.2993 - mean_squared_error: 0.1849 - rmse: 0.4257 -
mean_absolute_percentage_error: 170.2241
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2111 -
mean_absolute_error: 0.2974 - mean_squared_error: 0.1833 - rmse: 0.4246 -
mean_absolute_percentage_error: 175.5062
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2105 -
mean_absolute_error: 0.2969 - mean_squared_error: 0.1828 - rmse: 0.4232 -
mean_absolute_percentage_error: 172.9944
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2121 -
mean_absolute_error: 0.2984 - mean_squared_error: 0.1844 - rmse: 0.4245 -
mean_absolute_percentage_error: 175.6657
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2086 -
mean_absolute_error: 0.2948 - mean_squared_error: 0.1811 - rmse: 0.4219 -
mean_absolute_percentage_error: 173.1275
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2087 -
mean_absolute_error: 0.2953 - mean_squared_error: 0.1813 - rmse: 0.4219 -
mean_absolute_percentage_error: 172.2486
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2070 -
mean_absolute_error: 0.2943 - mean_squared_error: 0.1797 - rmse: 0.4198 -
mean_absolute_percentage_error: 173.7696
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2067 -
mean_absolute_error: 0.2946 - mean_squared_error: 0.1795 - rmse: 0.4195 -
mean_absolute_percentage_error: 176.4921
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2064 -
mean_absolute_error: 0.2940 - mean_squared_error: 0.1794 - rmse: 0.4194 -
mean_absolute_percentage_error: 175.7150
Epoch 39/100
```

```
210/210 [==============================] - 0s 2ms/step - loss: 0.2079 -
mean_absolute_error: 0.2953 - mean_squared_error: 0.1810 - rmse: 0.4213 -
mean_absolute_percentage_error: 167.6422
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2101 -
mean_absolute_error: 0.2974 - mean_squared_error: 0.1831 - rmse: 0.4234 -
mean_absolute_percentage_error: 167.6255
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2056 -
mean_absolute_error: 0.2938 - mean_squared_error: 0.1789 - rmse: 0.4189 -
mean_absolute_percentage_error: 172.8226
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2052 -
mean_absolute_error: 0.2934 - mean_squared_error: 0.1785 - rmse: 0.4183 -
mean_absolute_percentage_error: 173.6792
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2017 -
mean_absolute_error: 0.2901 - mean_squared_error: 0.1753 - rmse: 0.4146 -
mean_absolute_percentage_error: 169.1246
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2033 -
mean_absolute_error: 0.2911 - mean_squared_error: 0.1768 - rmse: 0.4159 -
mean_absolute_percentage_error: 171.8114
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2040 -
mean_absolute_error: 0.2922 - mean_squared_error: 0.1776 - rmse: 0.4173 -
mean_absolute_percentage_error: 176.7924
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2017 -
mean_absolute_error: 0.2900 - mean_squared_error: 0.1754 - rmse: 0.4151 -
mean_absolute_percentage_error: 172.7259
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2030 -
mean_absolute_error: 0.2923 - mean_squared_error: 0.1768 - rmse: 0.4170 -
mean_absolute_percentage_error: 170.7255
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2027 -
mean_absolute_error: 0.2923 - mean_squared_error: 0.1765 - rmse: 0.4158 -
mean_absolute_percentage_error: 167.0521
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2048 -
mean_absolute_error: 0.2932 - mean_squared_error: 0.1786 - rmse: 0.4189 -
mean_absolute_percentage_error: 164.7496
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2009 -
mean_absolute_error: 0.2893 - mean_squared_error: 0.1747 - rmse: 0.4144 -
mean_absolute_percentage_error: 172.9797
Epoch 51/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1995 -
mean_absolute_error: 0.2894 - mean_squared_error: 0.1734 - rmse: 0.4128 -
mean_absolute_percentage_error: 173.7540
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2027 -
mean_absolute_error: 0.2919 - mean_squared_error: 0.1765 - rmse: 0.4165 -
mean_absolute_percentage_error: 169.6968
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1993 -
mean_absolute_error: 0.2876 - mean_squared_error: 0.1734 - rmse: 0.4111 -
mean_absolute_percentage_error: 168.7418
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2011 -
mean_absolute_error: 0.2890 - mean_squared_error: 0.1752 - rmse: 0.4146 -
mean_absolute_percentage_error: 171.2272
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1984 -
mean_absolute_error: 0.2887 - mean_squared_error: 0.1725 - rmse: 0.4111 -
mean_absolute_percentage_error: 170.7825
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2007 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1749 - rmse: 0.4154 -
mean_absolute_percentage_error: 170.3856
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1997 -
mean_absolute_error: 0.2884 - mean_squared_error: 0.1739 - rmse: 0.4133 -
mean_absolute_percentage_error: 173.4139
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2021 -
mean_absolute_error: 0.2916 - mean_squared_error: 0.1763 - rmse: 0.4172 -
mean_absolute_percentage_error: 177.7167
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1999 -
mean_absolute_error: 0.2891 - mean_squared_error: 0.1742 - rmse: 0.4132 -
mean_absolute_percentage_error: 165.7178
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2856 - mean_squared_error: 0.1696 - rmse: 0.4085 -
mean_absolute_percentage_error: 168.0494
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1966 -
mean_absolute_error: 0.2877 - mean_squared_error: 0.1714 - rmse: 0.4100 -
mean_absolute_percentage_error: 168.3921
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1969 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1717 - rmse: 0.4098 -
mean_absolute_percentage_error: 175.4276
Epoch 63/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1966 -
mean_absolute_error: 0.2870 - mean_squared_error: 0.1716 - rmse: 0.4096 -
mean_absolute_percentage_error: 168.9061
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1701 - rmse: 0.4069 -
mean_absolute_percentage_error: 171.5526
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1987 -
mean_absolute_error: 0.2889 - mean_squared_error: 0.1738 - rmse: 0.4126 -
mean_absolute_percentage_error: 170.1460
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1983 -
mean_absolute_error: 0.2888 - mean_squared_error: 0.1734 - rmse: 0.4116 -
mean_absolute_percentage_error: 172.6472
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1952 -
mean_absolute_error: 0.2863 - mean_squared_error: 0.1704 - rmse: 0.4089 -
mean_absolute_percentage_error: 163.6896
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1940 -
mean_absolute_error: 0.2847 - mean_squared_error: 0.1693 - rmse: 0.4080 -
mean_absolute_percentage_error: 166.3734
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2848 - mean_squared_error: 0.1697 - rmse: 0.4075 -
mean_absolute_percentage_error: 167.4552
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1967 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1722 - rmse: 0.4109 -
mean_absolute_percentage_error: 168.4444
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1942 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1698 - rmse: 0.4076 -
mean_absolute_percentage_error: 167.2828
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1971 -
mean_absolute_error: 0.2880 - mean_squared_error: 0.1725 - rmse: 0.4108 -
mean_absolute_percentage_error: 170.3395
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1953 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1710 - rmse: 0.4089 -
mean_absolute_percentage_error: 164.5971
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1941 -
mean_absolute_error: 0.2849 - mean_squared_error: 0.1698 - rmse: 0.4078 -
mean_absolute_percentage_error: 162.7806
Epoch 75/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1959 -
mean_absolute_error: 0.2869 - mean_squared_error: 0.1715 - rmse: 0.4090 -
mean_absolute_percentage_error: 166.6810
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1930 -
mean_absolute_error: 0.2836 - mean_squared_error: 0.1688 - rmse: 0.4071 -
mean_absolute_percentage_error: 168.8645
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1950 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1708 - rmse: 0.4098 -
mean_absolute_percentage_error: 165.3378
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1709 - rmse: 0.4090 -
mean_absolute_percentage_error: 167.6011
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1936 -
mean_absolute_error: 0.2843 - mean_squared_error: 0.1695 - rmse: 0.4081 -
mean_absolute_percentage_error: 170.0480
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1950 -
mean_absolute_error: 0.2853 - mean_squared_error: 0.1709 - rmse: 0.4084 -
mean_absolute_percentage_error: 167.6803
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1934 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1694 - rmse: 0.4076 -
mean_absolute_percentage_error: 165.0499
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1938 -
mean_absolute_error: 0.2842 - mean_squared_error: 0.1698 - rmse: 0.4079 -
mean_absolute_percentage_error: 168.1740
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1920 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1680 - rmse: 0.4059 -
mean_absolute_percentage_error: 167.4487
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1906 -
mean_absolute_error: 0.2815 - mean_squared_error: 0.1666 - rmse: 0.4041 -
mean_absolute_percentage_error: 163.6250
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1952 -
mean_absolute_error: 0.2859 - mean_squared_error: 0.1711 - rmse: 0.4095 -
mean_absolute_percentage_error: 166.4804
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1704 - rmse: 0.4090 -
mean_absolute_percentage_error: 166.2220
Epoch 87/100
```

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210/210 [==============================] - 0s 2ms/step - loss: 0.1919 -
mean_absolute_error: 0.2844 - mean_squared_error: 0.1679 - rmse: 0.4058 -
mean_absolute_percentage_error: 167.2371
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1928 -
mean_absolute_error: 0.2839 - mean_squared_error: 0.1689 - rmse: 0.4070 -
mean_absolute_percentage_error: 167.4679
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1911 -
mean_absolute_error: 0.2819 - mean_squared_error: 0.1672 - rmse: 0.4050 -
mean_absolute_percentage_error: 163.7090
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1909 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1671 - rmse: 0.4046 -
mean_absolute_percentage_error: 166.6240
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1922 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1683 - rmse: 0.4054 -
mean_absolute_percentage_error: 165.3634
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1893 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1656 - rmse: 0.4025 -
mean_absolute_percentage_error: 171.1313
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1914 -
mean_absolute_error: 0.2820 - mean_squared_error: 0.1677 - rmse: 0.4050 -
mean_absolute_percentage_error: 163.1419
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1881 -
mean_absolute_error: 0.2792 - mean_squared_error: 0.1643 - rmse: 0.4013 -
mean_absolute_percentage_error: 170.6532
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1926 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1688 - rmse: 0.4055 -
mean_absolute_percentage_error: 174.8696
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1881 -
mean_absolute_error: 0.2794 - mean_squared_error: 0.1642 - rmse: 0.4013 -
mean_absolute_percentage_error: 168.9138
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1928 -
mean_absolute_error: 0.2823 - mean_squared_error: 0.1689 - rmse: 0.4071 -
mean_absolute_percentage_error: 161.1838
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1923 -
mean_absolute_error: 0.2830 - mean_squared_error: 0.1685 - rmse: 0.4073 -
mean_absolute_percentage_error: 163.6052
Epoch 99/100
```

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210/210 [==============================] - 1s 3ms/step - loss: 0.1929 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1691 - rmse: 0.4067 -
mean_absolute_percentage_error: 170.3252
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1882 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1644 - rmse: 0.4011 -
mean_absolute_percentage_error: 168.7039
100/100 [==============================] - 0s 2ms/step - loss: 0.1934 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1695 - rmse: 0.4062 -
mean_absolute_percentage_error: 170.3021
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1L2
--------------------------------------------------------------------------------
Training for fold 8 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4630 -
mean_absolute_error: 0.4447 - mean_squared_error: 0.3489 - rmse: 0.5798 -
mean_absolute_percentage_error: 203.9984
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3143 -
mean_absolute_error: 0.3532 - mean_squared_error: 0.2432 - rmse: 0.4900 -
mean_absolute_percentage_error: 194.1922
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2830 -
mean_absolute_error: 0.3400 - mean_squared_error: 0.2282 - rmse: 0.4742 -
mean_absolute_percentage_error: 197.5921
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2686 -
mean_absolute_error: 0.3342 - mean_squared_error: 0.2216 - rmse: 0.4666 -
mean_absolute_percentage_error: 193.0657
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2614 -
mean_absolute_error: 0.3311 - mean_squared_error: 0.2192 - rmse: 0.4650 -
mean_absolute_percentage_error: 193.0970
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2563 -
mean_absolute_error: 0.3302 - mean_squared_error: 0.2166 - rmse: 0.4614 -
mean_absolute_percentage_error: 197.1499
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2494 -
mean_absolute_error: 0.3243 - mean_squared_error: 0.2114 - rmse: 0.4564 -
mean_absolute_percentage_error: 194.8846
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2438 -
mean_absolute_error: 0.3206 - mean_squared_error: 0.2074 - rmse: 0.4515 -
mean_absolute_percentage_error: 189.7425
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2433 -
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mean_absolute_error: 0.3206 - mean_squared_error: 0.2076 - rmse: 0.4519 -
mean_absolute_percentage_error: 187.1045
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2394 -
mean_absolute_error: 0.3172 - mean_squared_error: 0.2046 - rmse: 0.4480 -
mean_absolute_percentage_error: 186.2449
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2364 -
mean_absolute_error: 0.3158 - mean_squared_error: 0.2020 - rmse: 0.4456 -
mean_absolute_percentage_error: 188.2021
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2345 -
mean_absolute_error: 0.3140 - mean_squared_error: 0.2006 - rmse: 0.4443 -
mean_absolute_percentage_error: 187.6396
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2316 -
mean_absolute_error: 0.3109 - mean_squared_error: 0.1980 - rmse: 0.4409 -
mean_absolute_percentage_error: 184.1584
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2301 -
mean_absolute_error: 0.3103 - mean_squared_error: 0.1966 - rmse: 0.4386 -
mean_absolute_percentage_error: 179.5542
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2275 -
mean_absolute_error: 0.3084 - mean_squared_error: 0.1944 - rmse: 0.4370 -
mean_absolute_percentage_error: 181.4135
Epoch 16/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2262 -
mean_absolute_error: 0.3082 - mean_squared_error: 0.1931 - rmse: 0.4353 -
mean_absolute_percentage_error: 177.9337
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2239 -
mean_absolute_error: 0.3044 - mean_squared_error: 0.1911 - rmse: 0.4325 -
mean_absolute_percentage_error: 178.1937
Epoch 18/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2241 -
mean_absolute_error: 0.3059 - mean_squared_error: 0.1915 - rmse: 0.4336 -
mean_absolute_percentage_error: 178.5459
Epoch 19/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2202 -
mean_absolute_error: 0.3020 - mean_squared_error: 0.1881 - rmse: 0.4287 -
mean_absolute_percentage_error: 174.3370
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2206 -
mean_absolute_error: 0.3027 - mean_squared_error: 0.1886 - rmse: 0.4301 -
mean_absolute_percentage_error: 173.7078
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2234 -
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mean_absolute_error: 0.3052 - mean_squared_error: 0.1914 - rmse: 0.4336 -
mean_absolute_percentage_error: 176.0889
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2166 -
mean_absolute_error: 0.2994 - mean_squared_error: 0.1851 - rmse: 0.4268 -
mean_absolute_percentage_error: 175.4060
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2172 -
mean_absolute_error: 0.2999 - mean_squared_error: 0.1857 - rmse: 0.4267 -
mean_absolute_percentage_error: 175.4438
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2169 -
mean_absolute_error: 0.3006 - mean_squared_error: 0.1856 - rmse: 0.4273 -
mean_absolute_percentage_error: 177.3428
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2174 -
mean_absolute_error: 0.3002 - mean_squared_error: 0.1860 - rmse: 0.4266 -
mean_absolute_percentage_error: 177.8524
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2126 -
mean_absolute_error: 0.2956 - mean_squared_error: 0.1816 - rmse: 0.4223 -
mean_absolute_percentage_error: 169.2457
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2142 -
mean_absolute_error: 0.2982 - mean_squared_error: 0.1831 - rmse: 0.4230 -
mean_absolute_percentage_error: 170.9913
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2139 -
mean_absolute_error: 0.2976 - mean_squared_error: 0.1832 - rmse: 0.4239 -
mean_absolute_percentage_error: 170.4931
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2114 -
mean_absolute_error: 0.2954 - mean_squared_error: 0.1807 - rmse: 0.4213 -
mean_absolute_percentage_error: 175.4977
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2131 -
mean_absolute_error: 0.2967 - mean_squared_error: 0.1826 - rmse: 0.4228 -
mean_absolute_percentage_error: 174.6920
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2114 -
mean_absolute_error: 0.2959 - mean_squared_error: 0.1812 - rmse: 0.4211 -
mean_absolute_percentage_error: 175.4704
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2123 -
mean_absolute_error: 0.2963 - mean_squared_error: 0.1822 - rmse: 0.4225 -
mean_absolute_percentage_error: 176.6037
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2097 -
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mean_absolute_error: 0.2941 - mean_squared_error: 0.1798 - rmse: 0.4189 -
mean_absolute_percentage_error: 168.5326
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2122 -
mean_absolute_error: 0.2970 - mean_squared_error: 0.1822 - rmse: 0.4222 -
mean_absolute_percentage_error: 172.7077
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2099 -
mean_absolute_error: 0.2943 - mean_squared_error: 0.1802 - rmse: 0.4204 -
mean_absolute_percentage_error: 165.7459
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2088 -
mean_absolute_error: 0.2940 - mean_squared_error: 0.1791 - rmse: 0.4194 -
mean_absolute_percentage_error: 170.7986
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2089 -
mean_absolute_error: 0.2943 - mean_squared_error: 0.1793 - rmse: 0.4186 -
mean_absolute_percentage_error: 175.1287
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2091 -
mean_absolute_error: 0.2934 - mean_squared_error: 0.1797 - rmse: 0.4195 -
mean_absolute_percentage_error: 171.6966
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2079 -
mean_absolute_error: 0.2939 - mean_squared_error: 0.1787 - rmse: 0.4182 -
mean_absolute_percentage_error: 171.7045
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2054 -
mean_absolute_error: 0.2908 - mean_squared_error: 0.1763 - rmse: 0.4168 -
mean_absolute_percentage_error: 166.7798
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2074 -
mean_absolute_error: 0.2930 - mean_squared_error: 0.1785 - rmse: 0.4183 -
mean_absolute_percentage_error: 168.9636
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2047 -
mean_absolute_error: 0.2906 - mean_squared_error: 0.1760 - rmse: 0.4156 -
mean_absolute_percentage_error: 168.6892
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2026 -
mean_absolute_error: 0.2891 - mean_squared_error: 0.1741 - rmse: 0.4134 -
mean_absolute_percentage_error: 169.8368
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2038 -
mean_absolute_error: 0.2898 - mean_squared_error: 0.1753 - rmse: 0.4149 -
mean_absolute_percentage_error: 167.7259
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2035 -
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mean_absolute_error: 0.2897 - mean_squared_error: 0.1751 - rmse: 0.4143 -
mean_absolute_percentage_error: 171.9214
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2026 -
mean_absolute_error: 0.2896 - mean_squared_error: 0.1742 - rmse: 0.4129 -
mean_absolute_percentage_error: 173.6929
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2042 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1759 - rmse: 0.4148 -
mean_absolute_percentage_error: 168.6038
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2029 -
mean_absolute_error: 0.2897 - mean_squared_error: 0.1748 - rmse: 0.4138 -
mean_absolute_percentage_error: 170.8233
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2014 -
mean_absolute_error: 0.2883 - mean_squared_error: 0.1732 - rmse: 0.4125 -
mean_absolute_percentage_error: 169.6464
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2019 -
mean_absolute_error: 0.2887 - mean_squared_error: 0.1740 - rmse: 0.4130 -
mean_absolute_percentage_error: 171.0777
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2018 -
mean_absolute_error: 0.2896 - mean_squared_error: 0.1740 - rmse: 0.4129 -
mean_absolute_percentage_error: 164.9540
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2007 -
mean_absolute_error: 0.2889 - mean_squared_error: 0.1730 - rmse: 0.4115 -
mean_absolute_percentage_error: 165.8022
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2044 -
mean_absolute_error: 0.2916 - mean_squared_error: 0.1767 - rmse: 0.4159 -
mean_absolute_percentage_error: 165.1097
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2014 -
mean_absolute_error: 0.2881 - mean_squared_error: 0.1741 - rmse: 0.4130 -
mean_absolute_percentage_error: 165.3392
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2009 -
mean_absolute_error: 0.2891 - mean_squared_error: 0.1739 - rmse: 0.4118 -
mean_absolute_percentage_error: 168.9781
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2003 -
mean_absolute_error: 0.2877 - mean_squared_error: 0.1733 - rmse: 0.4114 -
mean_absolute_percentage_error: 168.6264
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2002 -
```

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mean_absolute_error: 0.2880 - mean_squared_error: 0.1734 - rmse: 0.4129 -
mean_absolute_percentage_error: 167.7399
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1987 -
mean_absolute_error: 0.2864 - mean_squared_error: 0.1720 - rmse: 0.4100 -
mean_absolute_percentage_error: 170.4530
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2021 -
mean_absolute_error: 0.2894 - mean_squared_error: 0.1755 - rmse: 0.4140 -
mean_absolute_percentage_error: 172.6045
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1982 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1718 - rmse: 0.4108 -
mean_absolute_percentage_error: 167.0622
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1991 -
mean_absolute_error: 0.2867 - mean_squared_error: 0.1726 - rmse: 0.4116 -
mean_absolute_percentage_error: 170.9738
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1977 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1711 - rmse: 0.4100 -
mean_absolute_percentage_error: 163.6413
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1988 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1723 - rmse: 0.4099 -
mean_absolute_percentage_error: 172.1714
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1983 -
mean_absolute_error: 0.2857 - mean_squared_error: 0.1719 - rmse: 0.4111 -
mean_absolute_percentage_error: 167.8060
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1962 -
mean_absolute_error: 0.2839 - mean_squared_error: 0.1698 - rmse: 0.4065 -
mean_absolute_percentage_error: 165.0469
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1979 -
mean_absolute_error: 0.2858 - mean_squared_error: 0.1716 - rmse: 0.4100 -
mean_absolute_percentage_error: 167.3799
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1970 -
mean_absolute_error: 0.2853 - mean_squared_error: 0.1709 - rmse: 0.4095 -
mean_absolute_percentage_error: 170.5429
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1972 -
mean_absolute_error: 0.2842 - mean_squared_error: 0.1711 - rmse: 0.4089 -
mean_absolute_percentage_error: 166.2092
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1976 -
```

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mean_absolute_error: 0.2851 - mean_squared_error: 0.1714 - rmse: 0.4095 -
mean_absolute_percentage_error: 167.9960
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1970 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1708 - rmse: 0.4091 -
mean_absolute_percentage_error: 165.4600
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1948 -
mean_absolute_error: 0.2820 - mean_squared_error: 0.1688 - rmse: 0.4072 -
mean_absolute_percentage_error: 169.9593
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2845 - mean_squared_error: 0.1691 - rmse: 0.4065 -
mean_absolute_percentage_error: 166.5902
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1983 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1724 - rmse: 0.4111 -
mean_absolute_percentage_error: 167.1310
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2831 - mean_squared_error: 0.1686 - rmse: 0.4068 -
mean_absolute_percentage_error: 165.2803
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1975 -
mean_absolute_error: 0.2851 - mean_squared_error: 0.1716 - rmse: 0.4094 -
mean_absolute_percentage_error: 161.2271
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1965 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1707 - rmse: 0.4092 -
mean_absolute_percentage_error: 167.1988
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1974 -
mean_absolute_error: 0.2856 - mean_squared_error: 0.1715 - rmse: 0.4100 -
mean_absolute_percentage_error: 171.7159
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1966 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1708 - rmse: 0.4088 -
mean_absolute_percentage_error: 165.0255
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2829 - mean_squared_error: 0.1692 - rmse: 0.4067 -
mean_absolute_percentage_error: 170.7691
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1940 -
mean_absolute_error: 0.2818 - mean_squared_error: 0.1682 - rmse: 0.4048 -
mean_absolute_percentage_error: 168.9214
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
```

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mean_absolute_error: 0.2837 - mean_squared_error: 0.1693 - rmse: 0.4077 -
mean_absolute_percentage_error: 167.7977
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1952 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1694 - rmse: 0.4068 -
mean_absolute_percentage_error: 165.3108
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1940 -
mean_absolute_error: 0.2818 - mean_squared_error: 0.1683 - rmse: 0.4071 -
mean_absolute_percentage_error: 167.8807
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1959 -
mean_absolute_error: 0.2837 - mean_squared_error: 0.1701 - rmse: 0.4083 -
mean_absolute_percentage_error: 163.9888
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1985 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1727 - rmse: 0.4113 -
mean_absolute_percentage_error: 159.4600
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1930 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1672 - rmse: 0.4036 -
mean_absolute_percentage_error: 169.9993
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1925 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1667 - rmse: 0.4040 -
mean_absolute_percentage_error: 161.3127
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1926 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1671 - rmse: 0.4036 -
mean_absolute_percentage_error: 162.6217
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1920 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1665 - rmse: 0.4037 -
mean_absolute_percentage_error: 164.5488
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1673 - rmse: 0.4056 -
mean_absolute_percentage_error: 170.3126
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1928 -
mean_absolute_error: 0.2799 - mean_squared_error: 0.1673 - rmse: 0.4044 -
mean_absolute_percentage_error: 168.5182
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1934 -
mean_absolute_error: 0.2814 - mean_squared_error: 0.1680 - rmse: 0.4059 -
mean_absolute_percentage_error: 163.9987
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1902 -
```

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mean_absolute_error: 0.2793 - mean_squared_error: 0.1647 - rmse: 0.4011 -
mean_absolute_percentage_error: 160.2490
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1945 -
mean_absolute_error: 0.2818 - mean_squared_error: 0.1691 - rmse: 0.4059 -
mean_absolute_percentage_error: 166.9220
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1918 -
mean_absolute_error: 0.2801 - mean_squared_error: 0.1663 - rmse: 0.4042 -
mean_absolute_percentage_error: 165.4475
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1957 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1702 - rmse: 0.4089 -
mean_absolute_percentage_error: 164.9875
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1952 -
mean_absolute_error: 0.2837 - mean_squared_error: 0.1697 - rmse: 0.4077 -
mean_absolute_percentage_error: 158.5666
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1939 -
mean_absolute_error: 0.2811 - mean_squared_error: 0.1686 - rmse: 0.4054 -
mean_absolute_percentage_error: 165.0747
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1926 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1673 - rmse: 0.4037 -
mean_absolute_percentage_error: 164.4853
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1928 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1674 - rmse: 0.4046 -
mean_absolute_percentage_error: 168.3393
100/100 [==============================] - 0s 1ms/step - loss: 0.1916 -
mean_absolute_error: 0.2779 - mean_squared_error: 0.1664 - rmse: 0.4022 -
mean_absolute_percentage_error: 172.5889
200/200 [==============================] - 0s 1ms/step
Regularizer chosen is L1L2
--------------------------------------------------------------------------
Training for fold 9 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4561 -
mean_absolute_error: 0.4442 - mean_squared_error: 0.3494 - rmse: 0.5811 -
mean_absolute_percentage_error: 193.7061
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3094 -
mean_absolute_error: 0.3515 - mean_squared_error: 0.2425 - rmse: 0.4889 -
mean_absolute_percentage_error: 187.7707
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2821 -
mean_absolute_error: 0.3407 - mean_squared_error: 0.2305 - rmse: 0.4762 -
```

```
mean_absolute_percentage_error: 187.3035
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2685 -
mean_absolute_error: 0.3347 - mean_squared_error: 0.2241 - rmse: 0.4691 -
mean_absolute_percentage_error: 186.6741
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2610 -
mean_absolute_error: 0.3317 - mean_squared_error: 0.2206 - rmse: 0.4660 -
mean_absolute_percentage_error: 186.5664
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2546 -
mean_absolute_error: 0.3283 - mean_squared_error: 0.2165 - rmse: 0.4615 -
mean_absolute_percentage_error: 181.8095
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2511 -
mean_absolute_error: 0.3264 - mean_squared_error: 0.2142 - rmse: 0.4586 -
mean_absolute_percentage_error: 186.0049
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2468 -
mean_absolute_error: 0.3222 - mean_squared_error: 0.2113 - rmse: 0.4552 -
mean_absolute_percentage_error: 183.5572
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2471 -
mean_absolute_error: 0.3234 - mean_squared_error: 0.2122 - rmse: 0.4571 -
mean_absolute_percentage_error: 178.9028
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2410 -
mean_absolute_error: 0.3170 - mean_squared_error: 0.2070 - rmse: 0.4502 -
mean_absolute_percentage_error: 179.5648
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2409 -
mean_absolute_error: 0.3187 - mean_squared_error: 0.2069 - rmse: 0.4502 -
mean_absolute_percentage_error: 180.6796
Epoch 12/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2373 -
mean_absolute_error: 0.3147 - mean_squared_error: 0.2038 - rmse: 0.4481 -
mean_absolute_percentage_error: 178.0071
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2345 -
mean_absolute_error: 0.3118 - mean_squared_error: 0.2011 - rmse: 0.4446 -
mean_absolute_percentage_error: 179.8042
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2321 -
mean_absolute_error: 0.3105 - mean_squared_error: 0.1989 - rmse: 0.4422 -
mean_absolute_percentage_error: 178.7490
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2329 -
mean_absolute_error: 0.3111 - mean_squared_error: 0.1999 - rmse: 0.4431 -
```

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mean_absolute_percentage_error: 177.1039
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2323 -
mean_absolute_error: 0.3114 - mean_squared_error: 0.1993 - rmse: 0.4425 -
mean_absolute_percentage_error: 176.1010
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2309 -
mean_absolute_error: 0.3099 - mean_squared_error: 0.1979 - rmse: 0.4408 -
mean_absolute_percentage_error: 179.9050
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2285 -
mean_absolute_error: 0.3073 - mean_squared_error: 0.1959 - rmse: 0.4376 -
mean_absolute_percentage_error: 174.4104
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2257 -
mean_absolute_error: 0.3050 - mean_squared_error: 0.1933 - rmse: 0.4348 -
mean_absolute_percentage_error: 175.0090
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2267 -
mean_absolute_error: 0.3080 - mean_squared_error: 0.1946 - rmse: 0.4364 -
mean_absolute_percentage_error: 174.1813
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2266 -
mean_absolute_error: 0.3074 - mean_squared_error: 0.1947 - rmse: 0.4367 -
mean_absolute_percentage_error: 178.2186
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2225 -
mean_absolute_error: 0.3035 - mean_squared_error: 0.1908 - rmse: 0.4323 -
mean_absolute_percentage_error: 175.3027
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2224 -
mean_absolute_error: 0.3033 - mean_squared_error: 0.1910 - rmse: 0.4332 -
mean_absolute_percentage_error: 175.3804
Epoch 24/100
210/210 [==============================] - 0s 1ms/step - loss: 0.2210 -
mean_absolute_error: 0.3017 - mean_squared_error: 0.1898 - rmse: 0.4321 -
mean_absolute_percentage_error: 172.5133
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2217 -
mean_absolute_error: 0.3025 - mean_squared_error: 0.1908 - rmse: 0.4328 -
mean_absolute_percentage_error: 170.9158
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2215 -
mean_absolute_error: 0.3029 - mean_squared_error: 0.1908 - rmse: 0.4322 -
mean_absolute_percentage_error: 165.6813
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2184 -
mean_absolute_error: 0.3011 - mean_squared_error: 0.1879 - rmse: 0.4290 -
```

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mean_absolute_percentage_error: 171.6418
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2174 -
mean_absolute_error: 0.2989 - mean_squared_error: 0.1871 - rmse: 0.4280 -
mean_absolute_percentage_error: 169.8286
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2173 -
mean_absolute_error: 0.3005 - mean_squared_error: 0.1871 - rmse: 0.4283 -
mean_absolute_percentage_error: 171.1720
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2206 -
mean_absolute_error: 0.3030 - mean_squared_error: 0.1905 - rmse: 0.4311 -
mean_absolute_percentage_error: 173.5446
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2149 -
mean_absolute_error: 0.2990 - mean_squared_error: 0.1852 - rmse: 0.4260 -
mean_absolute_percentage_error: 163.1786
Epoch 32/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2140 -
mean_absolute_error: 0.2975 - mean_squared_error: 0.1845 - rmse: 0.4256 -
mean_absolute_percentage_error: 174.1108
Epoch 33/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2178 -
mean_absolute_error: 0.3003 - mean_squared_error: 0.1885 - rmse: 0.4299 -
mean_absolute_percentage_error: 174.3679
Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2158 -
mean_absolute_error: 0.3004 - mean_squared_error: 0.1866 - rmse: 0.4281 -
mean_absolute_percentage_error: 167.5187
Epoch 35/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2167 -
mean_absolute_error: 0.3002 - mean_squared_error: 0.1876 - rmse: 0.4282 -
mean_absolute_percentage_error: 168.8521
Epoch 36/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2130 -
mean_absolute_error: 0.2978 - mean_squared_error: 0.1841 - rmse: 0.4253 -
mean_absolute_percentage_error: 173.6224
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2136 -
mean_absolute_error: 0.2984 - mean_squared_error: 0.1849 - rmse: 0.4264 -
mean_absolute_percentage_error: 164.0377
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2113 -
mean_absolute_error: 0.2959 - mean_squared_error: 0.1826 - rmse: 0.4229 -
mean_absolute_percentage_error: 172.3061
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2116 -
mean_absolute_error: 0.2965 - mean_squared_error: 0.1831 - rmse: 0.4238 -
```

```
mean_absolute_percentage_error: 168.4913
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2106 -
mean_absolute_error: 0.2968 - mean_squared_error: 0.1823 - rmse: 0.4217 -
mean_absolute_percentage_error: 168.4581
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2101 -
mean_absolute_error: 0.2957 - mean_squared_error: 0.1820 - rmse: 0.4227 -
mean_absolute_percentage_error: 171.2511
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2100 -
mean_absolute_error: 0.2956 - mean_squared_error: 0.1821 - rmse: 0.4216 -
mean_absolute_percentage_error: 171.5712
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2111 -
mean_absolute_error: 0.2974 - mean_squared_error: 0.1833 - rmse: 0.4242 -
mean_absolute_percentage_error: 168.0647
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2076 -
mean_absolute_error: 0.2933 - mean_squared_error: 0.1799 - rmse: 0.4203 -
mean_absolute_percentage_error: 170.8516
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2069 -
mean_absolute_error: 0.2938 - mean_squared_error: 0.1791 - rmse: 0.4179 -
mean_absolute_percentage_error: 167.4561
Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2059 -
mean_absolute_error: 0.2922 - mean_squared_error: 0.1784 - rmse: 0.4184 -
mean_absolute_percentage_error: 167.6443
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2074 -
mean_absolute_error: 0.2945 - mean_squared_error: 0.1800 - rmse: 0.4194 -
mean_absolute_percentage_error: 169.0270
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2067 -
mean_absolute_error: 0.2929 - mean_squared_error: 0.1794 - rmse: 0.4196 -
mean_absolute_percentage_error: 168.1109
Epoch 49/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2075 -
mean_absolute_error: 0.2937 - mean_squared_error: 0.1801 - rmse: 0.4192 -
mean_absolute_percentage_error: 168.2516
Epoch 50/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2066 -
mean_absolute_error: 0.2932 - mean_squared_error: 0.1793 - rmse: 0.4189 -
mean_absolute_percentage_error: 169.6433
Epoch 51/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2053 -
mean_absolute_error: 0.2925 - mean_squared_error: 0.1782 - rmse: 0.4180 -
```

```
mean_absolute_percentage_error: 170.4212
Epoch 52/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2031 -
mean_absolute_error: 0.2911 - mean_squared_error: 0.1764 - rmse: 0.4159 -
mean_absolute_percentage_error: 166.8891
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2060 -
mean_absolute_error: 0.2922 - mean_squared_error: 0.1793 - rmse: 0.4193 -
mean_absolute_percentage_error: 164.4150
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2034 -
mean_absolute_error: 0.2913 - mean_squared_error: 0.1768 - rmse: 0.4154 -
mean_absolute_percentage_error: 165.2563
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2038 -
mean_absolute_error: 0.2917 - mean_squared_error: 0.1772 - rmse: 0.4167 -
mean_absolute_percentage_error: 165.2481
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2007 -
mean_absolute_error: 0.2891 - mean_squared_error: 0.1745 - rmse: 0.4126 -
mean_absolute_percentage_error: 162.6891
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2006 -
mean_absolute_error: 0.2883 - mean_squared_error: 0.1744 - rmse: 0.4132 -
mean_absolute_percentage_error: 168.0982
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2031 -
mean_absolute_error: 0.2911 - mean_squared_error: 0.1773 - rmse: 0.4184 -
mean_absolute_percentage_error: 170.6907
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2039 -
mean_absolute_error: 0.2916 - mean_squared_error: 0.1778 - rmse: 0.4172 -
mean_absolute_percentage_error: 165.7286
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2007 -
mean_absolute_error: 0.2884 - mean_squared_error: 0.1749 - rmse: 0.4145 -
mean_absolute_percentage_error: 162.6926
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2000 -
mean_absolute_error: 0.2892 - mean_squared_error: 0.1744 - rmse: 0.4136 -
mean_absolute_percentage_error: 164.4039
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2023 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1768 - rmse: 0.4165 -
mean_absolute_percentage_error: 166.5083
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2007 -
mean_absolute_error: 0.2889 - mean_squared_error: 0.1752 - rmse: 0.4139 -
```

```
mean_absolute_percentage_error: 163.9822
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2008 -
mean_absolute_error: 0.2893 - mean_squared_error: 0.1753 - rmse: 0.4134 -
mean_absolute_percentage_error: 169.5961
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1982 -
mean_absolute_error: 0.2866 - mean_squared_error: 0.1729 - rmse: 0.4117 -
mean_absolute_percentage_error: 168.8530
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1981 -
mean_absolute_error: 0.2871 - mean_squared_error: 0.1728 - rmse: 0.4110 -
mean_absolute_percentage_error: 163.5061
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1988 -
mean_absolute_error: 0.2874 - mean_squared_error: 0.1735 - rmse: 0.4124 -
mean_absolute_percentage_error: 162.5455
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1992 -
mean_absolute_error: 0.2886 - mean_squared_error: 0.1739 - rmse: 0.4125 -
mean_absolute_percentage_error: 162.9110
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1992 -
mean_absolute_error: 0.2879 - mean_squared_error: 0.1741 - rmse: 0.4128 -
mean_absolute_percentage_error: 164.5831
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1981 -
mean_absolute_error: 0.2870 - mean_squared_error: 0.1731 - rmse: 0.4121 -
mean_absolute_percentage_error: 167.8069
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1995 -
mean_absolute_error: 0.2881 - mean_squared_error: 0.1745 - rmse: 0.4137 -
mean_absolute_percentage_error: 165.6517
Epoch 72/100
210/210 [==============================] - 0s 1ms/step - loss: 0.1962 -
mean_absolute_error: 0.2868 - mean_squared_error: 0.1711 - rmse: 0.4095 -
mean_absolute_percentage_error: 161.7068
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1983 -
mean_absolute_error: 0.2886 - mean_squared_error: 0.1733 - rmse: 0.4118 -
mean_absolute_percentage_error: 161.1048
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1990 -
mean_absolute_error: 0.2892 - mean_squared_error: 0.1739 - rmse: 0.4136 -
mean_absolute_percentage_error: 161.9648
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1991 -
mean_absolute_error: 0.2891 - mean_squared_error: 0.1741 - rmse: 0.4127 -
```

```
mean_absolute_percentage_error: 163.9524
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1958 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1707 - rmse: 0.4087 -
mean_absolute_percentage_error: 165.6728
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1954 -
mean_absolute_error: 0.2853 - mean_squared_error: 0.1704 - rmse: 0.4090 -
mean_absolute_percentage_error: 160.4864
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1958 -
mean_absolute_error: 0.2859 - mean_squared_error: 0.1709 - rmse: 0.4091 -
mean_absolute_percentage_error: 164.4529
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1989 -
mean_absolute_error: 0.2881 - mean_squared_error: 0.1739 - rmse: 0.4123 -
mean_absolute_percentage_error: 167.4763
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1924 -
mean_absolute_error: 0.2836 - mean_squared_error: 0.1674 - rmse: 0.4052 -
mean_absolute_percentage_error: 161.9608
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1993 -
mean_absolute_error: 0.2892 - mean_squared_error: 0.1742 - rmse: 0.4136 -
mean_absolute_percentage_error: 158.9512
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1958 -
mean_absolute_error: 0.2855 - mean_squared_error: 0.1710 - rmse: 0.4079 -
mean_absolute_percentage_error: 170.1904
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1948 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1699 - rmse: 0.4073 -
mean_absolute_percentage_error: 161.7802
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1945 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1697 - rmse: 0.4074 -
mean_absolute_percentage_error: 162.1500
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1703 - rmse: 0.4084 -
mean_absolute_percentage_error: 159.6721
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1953 -
mean_absolute_error: 0.2850 - mean_squared_error: 0.1705 - rmse: 0.4085 -
mean_absolute_percentage_error: 164.2073
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1939 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1691 - rmse: 0.4061 -
```

```
mean_absolute_percentage_error: 160.8954
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1950 -
mean_absolute_error: 0.2852 - mean_squared_error: 0.1703 - rmse: 0.4079 -
mean_absolute_percentage_error: 160.2706
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2844 - mean_squared_error: 0.1698 - rmse: 0.4070 -
mean_absolute_percentage_error: 163.3177
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1930 -
mean_absolute_error: 0.2828 - mean_squared_error: 0.1683 - rmse: 0.4056 -
mean_absolute_percentage_error: 163.0121
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1964 -
mean_absolute_error: 0.2857 - mean_squared_error: 0.1719 - rmse: 0.4098 -
mean_absolute_percentage_error: 166.5718
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2838 - mean_squared_error: 0.1683 - rmse: 0.4053 -
mean_absolute_percentage_error: 164.5649
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1918 -
mean_absolute_error: 0.2826 - mean_squared_error: 0.1676 - rmse: 0.4052 -
mean_absolute_percentage_error: 163.4689
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1938 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1695 - rmse: 0.4081 -
mean_absolute_percentage_error: 164.3778
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1937 -
mean_absolute_error: 0.2831 - mean_squared_error: 0.1694 - rmse: 0.4075 -
mean_absolute_percentage_error: 163.3183
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1924 -
mean_absolute_error: 0.2833 - mean_squared_error: 0.1683 - rmse: 0.4060 -
mean_absolute_percentage_error: 158.0280
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1928 -
mean_absolute_error: 0.2835 - mean_squared_error: 0.1686 - rmse: 0.4052 -
mean_absolute_percentage_error: 157.7188
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1918 -
mean_absolute_error: 0.2834 - mean_squared_error: 0.1678 - rmse: 0.4057 -
mean_absolute_percentage_error: 165.0627
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1912 -
mean_absolute_error: 0.2815 - mean_squared_error: 0.1674 - rmse: 0.4051 -
```

```
mean_absolute_percentage_error: 160.0186
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1943 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1704 - rmse: 0.4085 -
mean_absolute_percentage_error: 165.1200
100/100 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2753 - mean_squared_error: 0.1711 - rmse: 0.4072 -
mean_absolute_percentage_error: 172.1153
200/200 [==============================] - 0s 953us/step
Regularizer chosen is L1L2
-------------------------------------------------------------------------
Training for fold 10 ...
Epoch 1/100
210/210 [==============================] - 1s 2ms/step - loss: 0.4547 -
mean_absolute_error: 0.4376 - mean_squared_error: 0.3416 - rmse: 0.5737 -
mean_absolute_percentage_error: 192.2103
Epoch 2/100
210/210 [==============================] - 0s 2ms/step - loss: 0.3120 -
mean_absolute_error: 0.3502 - mean_squared_error: 0.2392 - rmse: 0.4857 -
mean_absolute_percentage_error: 183.3930
Epoch 3/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2823 -
mean_absolute_error: 0.3399 - mean_squared_error: 0.2272 - rmse: 0.4739 -
mean_absolute_percentage_error: 187.9199
Epoch 4/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2680 -
mean_absolute_error: 0.3352 - mean_squared_error: 0.2213 - rmse: 0.4666 -
mean_absolute_percentage_error: 182.3987
Epoch 5/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2586 -
mean_absolute_error: 0.3300 - mean_squared_error: 0.2164 - rmse: 0.4615 -
mean_absolute_percentage_error: 184.1058
Epoch 6/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2536 -
mean_absolute_error: 0.3284 - mean_squared_error: 0.2139 - rmse: 0.4584 -
mean_absolute_percentage_error: 189.3424
Epoch 7/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2484 -
mean_absolute_error: 0.3245 - mean_squared_error: 0.2107 - rmse: 0.4552 -
mean_absolute_percentage_error: 179.9882
Epoch 8/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2451 -
mean_absolute_error: 0.3224 - mean_squared_error: 0.2084 - rmse: 0.4526 -
mean_absolute_percentage_error: 175.5713
Epoch 9/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2402 -
mean_absolute_error: 0.3172 - mean_squared_error: 0.2047 - rmse: 0.4487 -
mean_absolute_percentage_error: 176.3214
```

```
Epoch 10/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2378 -
mean_absolute_error: 0.3171 - mean_squared_error: 0.2032 - rmse: 0.4462 -
mean_absolute_percentage_error: 176.8791
Epoch 11/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2383 -
mean_absolute_error: 0.3174 - mean_squared_error: 0.2041 - rmse: 0.4473 -
mean_absolute_percentage_error: 177.5691
Epoch 12/100
210/210 [==============================] - 1s 2ms/step - loss: 0.2330 -
mean_absolute_error: 0.3134 - mean_squared_error: 0.1993 - rmse: 0.4424 -
mean_absolute_percentage_error: 170.5758
Epoch 13/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2349 -
mean_absolute_error: 0.3151 - mean_squared_error: 0.2018 - rmse: 0.4455 -
mean_absolute_percentage_error: 170.4050
Epoch 14/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2331 -
mean_absolute_error: 0.3131 - mean_squared_error: 0.2003 - rmse: 0.4425 -
mean_absolute_percentage_error: 174.4667
Epoch 15/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2286 -
mean_absolute_error: 0.3095 - mean_squared_error: 0.1963 - rmse: 0.4386 -
mean_absolute_percentage_error: 167.8032
Epoch 16/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2277 -
mean_absolute_error: 0.3091 - mean_squared_error: 0.1960 - rmse: 0.4389 -
mean_absolute_percentage_error: 168.7186
Epoch 17/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2302 -
mean_absolute_error: 0.3113 - mean_squared_error: 0.1987 - rmse: 0.4409 -
mean_absolute_percentage_error: 174.0799
Epoch 18/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2267 -
mean_absolute_error: 0.3096 - mean_squared_error: 0.1954 - rmse: 0.4379 -
mean_absolute_percentage_error: 166.9615
Epoch 19/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2263 -
mean_absolute_error: 0.3089 - mean_squared_error: 0.1954 - rmse: 0.4379 -
mean_absolute_percentage_error: 170.1846
Epoch 20/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2253 -
mean_absolute_error: 0.3082 - mean_squared_error: 0.1944 - rmse: 0.4370 -
mean_absolute_percentage_error: 168.5689
Epoch 21/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2235 -
mean_absolute_error: 0.3061 - mean_squared_error: 0.1928 - rmse: 0.4349 -
mean_absolute_percentage_error: 168.6306
```

```
Epoch 22/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2231 -
mean_absolute_error: 0.3058 - mean_squared_error: 0.1924 - rmse: 0.4334 -
mean_absolute_percentage_error: 163.3847
Epoch 23/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2228 -
mean_absolute_error: 0.3062 - mean_squared_error: 0.1922 - rmse: 0.4343 -
mean_absolute_percentage_error: 168.3949
Epoch 24/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2221 -
mean_absolute_error: 0.3052 - mean_squared_error: 0.1914 - rmse: 0.4338 -
mean_absolute_percentage_error: 168.6048
Epoch 25/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2216 -
mean_absolute_error: 0.3047 - mean_squared_error: 0.1910 - rmse: 0.4327 -
mean_absolute_percentage_error: 167.8510
Epoch 26/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2194 -
mean_absolute_error: 0.3027 - mean_squared_error: 0.1889 - rmse: 0.4299 -
mean_absolute_percentage_error: 166.0232
Epoch 27/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2212 -
mean_absolute_error: 0.3039 - mean_squared_error: 0.1907 - rmse: 0.4326 -
mean_absolute_percentage_error: 167.0279
Epoch 28/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2158 -
mean_absolute_error: 0.2990 - mean_squared_error: 0.1856 - rmse: 0.4269 -
mean_absolute_percentage_error: 158.4030
Epoch 29/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2152 -
mean_absolute_error: 0.2993 - mean_squared_error: 0.1851 - rmse: 0.4259 -
mean_absolute_percentage_error: 163.9373
Epoch 30/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2172 -
mean_absolute_error: 0.3004 - mean_squared_error: 0.1871 - rmse: 0.4282 -
mean_absolute_percentage_error: 165.5849
Epoch 31/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2136 -
mean_absolute_error: 0.2976 - mean_squared_error: 0.1836 - rmse: 0.4241 -
mean_absolute_percentage_error: 159.0242
Epoch 32/100
210/210 [==============================] - 1s 2ms/step - loss: 0.2146 -
mean_absolute_error: 0.2979 - mean_squared_error: 0.1846 - rmse: 0.4257 -
mean_absolute_percentage_error: 162.6363
Epoch 33/100
210/210 [==============================] - 1s 2ms/step - loss: 0.2110 -
mean_absolute_error: 0.2947 - mean_squared_error: 0.1813 - rmse: 0.4210 -
mean_absolute_percentage_error: 157.7210
```

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Epoch 34/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2119 -
mean_absolute_error: 0.2962 - mean_squared_error: 0.1823 - rmse: 0.4232 -
mean_absolute_percentage_error: 162.1255
Epoch 35/100
210/210 [==============================] - 1s 2ms/step - loss: 0.2116 -
mean_absolute_error: 0.2964 - mean_squared_error: 0.1820 - rmse: 0.4224 -
mean_absolute_percentage_error: 160.9347
Epoch 36/100
210/210 [==============================] - 1s 2ms/step - loss: 0.2115 -
mean_absolute_error: 0.2955 - mean_squared_error: 0.1820 - rmse: 0.4232 -
mean_absolute_percentage_error: 158.2223
Epoch 37/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2102 -
mean_absolute_error: 0.2952 - mean_squared_error: 0.1810 - rmse: 0.4200 -
mean_absolute_percentage_error: 157.9729
Epoch 38/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2084 -
mean_absolute_error: 0.2940 - mean_squared_error: 0.1793 - rmse: 0.4187 -
mean_absolute_percentage_error: 155.2668
Epoch 39/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2077 -
mean_absolute_error: 0.2924 - mean_squared_error: 0.1788 - rmse: 0.4187 -
mean_absolute_percentage_error: 155.0812
Epoch 40/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2082 -
mean_absolute_error: 0.2927 - mean_squared_error: 0.1793 - rmse: 0.4189 -
mean_absolute_percentage_error: 154.6522
Epoch 41/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2052 -
mean_absolute_error: 0.2901 - mean_squared_error: 0.1764 - rmse: 0.4160 -
mean_absolute_percentage_error: 158.5763
Epoch 42/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2062 -
mean_absolute_error: 0.2906 - mean_squared_error: 0.1774 - rmse: 0.4181 -
mean_absolute_percentage_error: 153.4568
Epoch 43/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2061 -
mean_absolute_error: 0.2919 - mean_squared_error: 0.1773 - rmse: 0.4170 -
mean_absolute_percentage_error: 150.5687
Epoch 44/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2059 -
mean_absolute_error: 0.2903 - mean_squared_error: 0.1774 - rmse: 0.4170 -
mean_absolute_percentage_error: 155.1741
Epoch 45/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2046 -
mean_absolute_error: 0.2894 - mean_squared_error: 0.1760 - rmse: 0.4151 -
mean_absolute_percentage_error: 154.9194
```

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Epoch 46/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2047 -
mean_absolute_error: 0.2895 - mean_squared_error: 0.1764 - rmse: 0.4155 -
mean_absolute_percentage_error: 159.8498
Epoch 47/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2046 -
mean_absolute_error: 0.2906 - mean_squared_error: 0.1763 - rmse: 0.4150 -
mean_absolute_percentage_error: 156.4867
Epoch 48/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2010 -
mean_absolute_error: 0.2870 - mean_squared_error: 0.1728 - rmse: 0.4119 -
mean_absolute_percentage_error: 155.2320
Epoch 49/100
210/210 [==============================] - 1s 3ms/step - loss: 0.2044 -
mean_absolute_error: 0.2900 - mean_squared_error: 0.1761 - rmse: 0.4153 -
mean_absolute_percentage_error: 153.2152
Epoch 50/100
210/210 [==============================] - 1s 3ms/step - loss: 0.2014 -
mean_absolute_error: 0.2871 - mean_squared_error: 0.1732 - rmse: 0.4116 -
mean_absolute_percentage_error: 157.2814
Epoch 51/100
210/210 [==============================] - 1s 2ms/step - loss: 0.2019 -
mean_absolute_error: 0.2873 - mean_squared_error: 0.1737 - rmse: 0.4127 -
mean_absolute_percentage_error: 153.8290
Epoch 52/100
210/210 [==============================] - 1s 3ms/step - loss: 0.2013 -
mean_absolute_error: 0.2873 - mean_squared_error: 0.1734 - rmse: 0.4126 -
mean_absolute_percentage_error: 155.3292
Epoch 53/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1999 -
mean_absolute_error: 0.2859 - mean_squared_error: 0.1719 - rmse: 0.4109 -
mean_absolute_percentage_error: 157.5478
Epoch 54/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1990 -
mean_absolute_error: 0.2857 - mean_squared_error: 0.1711 - rmse: 0.4089 -
mean_absolute_percentage_error: 152.8118
Epoch 55/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2031 -
mean_absolute_error: 0.2879 - mean_squared_error: 0.1751 - rmse: 0.4136 -
mean_absolute_percentage_error: 156.3692
Epoch 56/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1998 -
mean_absolute_error: 0.2860 - mean_squared_error: 0.1721 - rmse: 0.4107 -
mean_absolute_percentage_error: 159.2165
Epoch 57/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1975 -
mean_absolute_error: 0.2836 - mean_squared_error: 0.1697 - rmse: 0.4075 -
mean_absolute_percentage_error: 153.1389
```

```
Epoch 58/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2019 -
mean_absolute_error: 0.2883 - mean_squared_error: 0.1741 - rmse: 0.4127 -
mean_absolute_percentage_error: 156.2935
Epoch 59/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2000 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1725 - rmse: 0.4110 -
mean_absolute_percentage_error: 159.6226
Epoch 60/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1981 -
mean_absolute_error: 0.2844 - mean_squared_error: 0.1707 - rmse: 0.4092 -
mean_absolute_percentage_error: 154.6190
Epoch 61/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1992 -
mean_absolute_error: 0.2862 - mean_squared_error: 0.1719 - rmse: 0.4103 -
mean_absolute_percentage_error: 154.3895
Epoch 62/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1970 -
mean_absolute_error: 0.2841 - mean_squared_error: 0.1696 - rmse: 0.4082 -
mean_absolute_percentage_error: 150.9991
Epoch 63/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1977 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1702 - rmse: 0.4078 -
mean_absolute_percentage_error: 156.3340
Epoch 64/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1992 -
mean_absolute_error: 0.2858 - mean_squared_error: 0.1719 - rmse: 0.4104 -
mean_absolute_percentage_error: 157.3213
Epoch 65/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1959 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1687 - rmse: 0.4064 -
mean_absolute_percentage_error: 157.4948
Epoch 66/100
210/210 [==============================] - 0s 2ms/step - loss: 0.2008 -
mean_absolute_error: 0.2865 - mean_squared_error: 0.1735 - rmse: 0.4119 -
mean_absolute_percentage_error: 150.3887
Epoch 67/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1971 -
mean_absolute_error: 0.2840 - mean_squared_error: 0.1697 - rmse: 0.4083 -
mean_absolute_percentage_error: 156.5022
Epoch 68/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1976 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1703 - rmse: 0.4090 -
mean_absolute_percentage_error: 153.5643
Epoch 69/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1954 -
mean_absolute_error: 0.2825 - mean_squared_error: 0.1680 - rmse: 0.4062 -
mean_absolute_percentage_error: 154.9200
```

```
Epoch 70/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1951 -
mean_absolute_error: 0.2832 - mean_squared_error: 0.1678 - rmse: 0.4046 -
mean_absolute_percentage_error: 150.5322
Epoch 71/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1962 -
mean_absolute_error: 0.2818 - mean_squared_error: 0.1690 - rmse: 0.4073 -
mean_absolute_percentage_error: 149.6175
Epoch 72/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1994 -
mean_absolute_error: 0.2846 - mean_squared_error: 0.1721 - rmse: 0.4105 -
mean_absolute_percentage_error: 154.8301
Epoch 73/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1942 -
mean_absolute_error: 0.2812 - mean_squared_error: 0.1671 - rmse: 0.4036 -
mean_absolute_percentage_error: 156.0866
Epoch 74/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1672 - rmse: 0.4049 -
mean_absolute_percentage_error: 154.8856
Epoch 75/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1961 -
mean_absolute_error: 0.2822 - mean_squared_error: 0.1690 - rmse: 0.4069 -
mean_absolute_percentage_error: 155.3064
Epoch 76/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1953 -
mean_absolute_error: 0.2821 - mean_squared_error: 0.1682 - rmse: 0.4063 -
mean_absolute_percentage_error: 151.4736
Epoch 77/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1959 -
mean_absolute_error: 0.2836 - mean_squared_error: 0.1688 - rmse: 0.4067 -
mean_absolute_percentage_error: 154.2719
Epoch 78/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1937 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1667 - rmse: 0.4033 -
mean_absolute_percentage_error: 155.1494
Epoch 79/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1940 -
mean_absolute_error: 0.2800 - mean_squared_error: 0.1669 - rmse: 0.4041 -
mean_absolute_percentage_error: 151.5258
Epoch 80/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1946 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1676 - rmse: 0.4048 -
mean_absolute_percentage_error: 153.3691
Epoch 81/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1954 -
mean_absolute_error: 0.2827 - mean_squared_error: 0.1685 - rmse: 0.4054 -
mean_absolute_percentage_error: 162.4392
```

```
Epoch 82/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1932 -
mean_absolute_error: 0.2798 - mean_squared_error: 0.1662 - rmse: 0.4034 -
mean_absolute_percentage_error: 150.2270
Epoch 83/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2797 - mean_squared_error: 0.1660 - rmse: 0.4025 -
mean_absolute_percentage_error: 153.3313
Epoch 84/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1903 -
mean_absolute_error: 0.2777 - mean_squared_error: 0.1635 - rmse: 0.4006 -
mean_absolute_percentage_error: 149.3852
Epoch 85/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1954 -
mean_absolute_error: 0.2821 - mean_squared_error: 0.1687 - rmse: 0.4063 -
mean_absolute_percentage_error: 149.3031
Epoch 86/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1942 -
mean_absolute_error: 0.2807 - mean_squared_error: 0.1675 - rmse: 0.4038 -
mean_absolute_percentage_error: 153.3612
Epoch 87/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1932 -
mean_absolute_error: 0.2794 - mean_squared_error: 0.1664 - rmse: 0.4039 -
mean_absolute_percentage_error: 150.9906
Epoch 88/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1923 -
mean_absolute_error: 0.2803 - mean_squared_error: 0.1658 - rmse: 0.4029 -
mean_absolute_percentage_error: 157.9440
Epoch 89/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1927 -
mean_absolute_error: 0.2806 - mean_squared_error: 0.1662 - rmse: 0.4038 -
mean_absolute_percentage_error: 153.5235
Epoch 90/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1925 -
mean_absolute_error: 0.2808 - mean_squared_error: 0.1660 - rmse: 0.4023 -
mean_absolute_percentage_error: 154.7430
Epoch 91/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1906 -
mean_absolute_error: 0.2792 - mean_squared_error: 0.1643 - rmse: 0.4010 -
mean_absolute_percentage_error: 150.6123
Epoch 92/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1929 -
mean_absolute_error: 0.2805 - mean_squared_error: 0.1666 - rmse: 0.4042 -
mean_absolute_percentage_error: 147.7211
Epoch 93/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1953 -
mean_absolute_error: 0.2813 - mean_squared_error: 0.1690 - rmse: 0.4061 -
mean_absolute_percentage_error: 146.9806
```
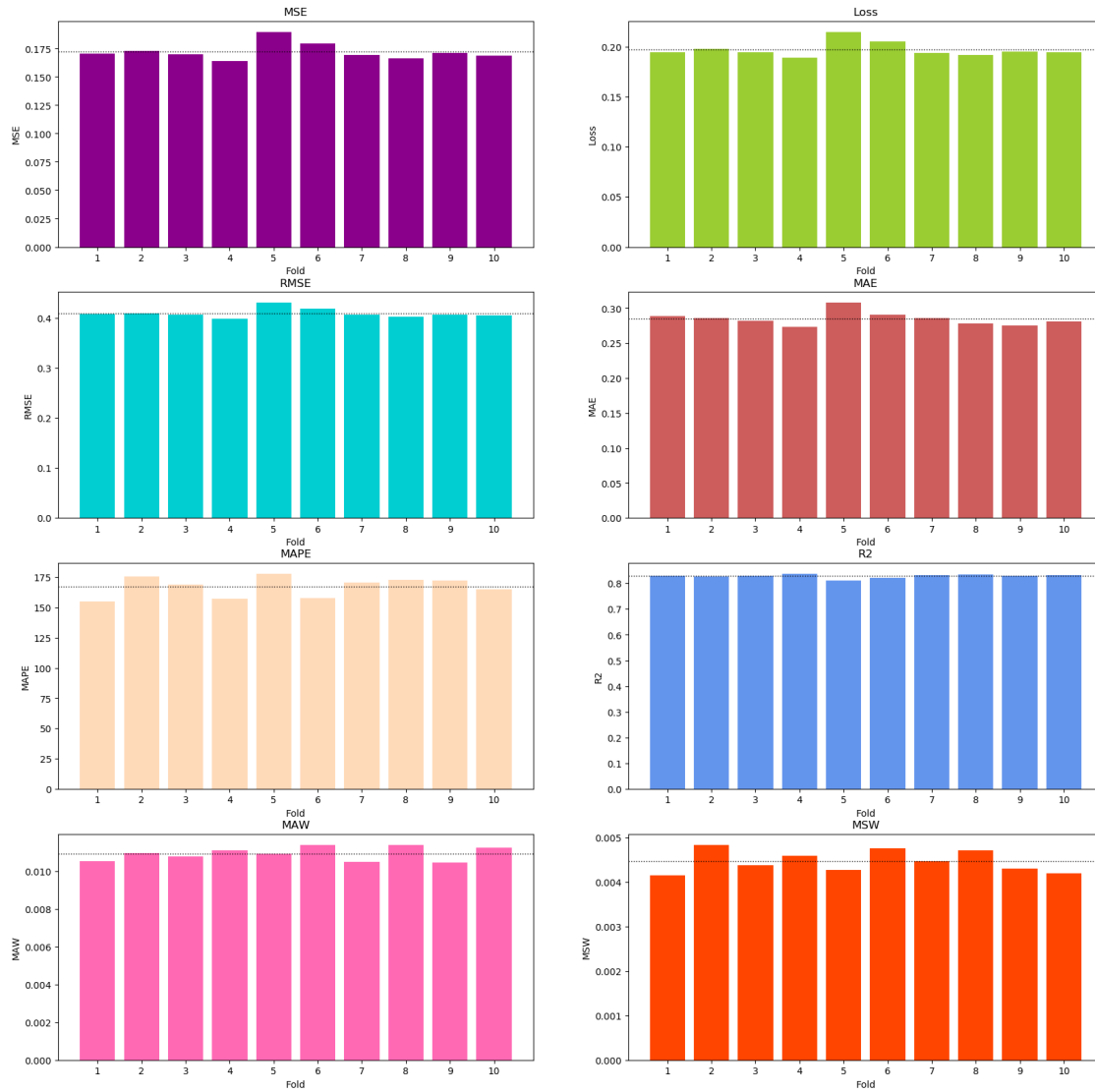
```
Epoch 94/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1922 -
mean_absolute_error: 0.2809 - mean_squared_error: 0.1660 - rmse: 0.4028 -
mean_absolute_percentage_error: 151.0118
Epoch 95/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1920 -
mean_absolute_error: 0.2806 - mean_squared_error: 0.1658 - rmse: 0.4022 -
mean_absolute_percentage_error: 153.4033
Epoch 96/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1934 -
mean_absolute_error: 0.2804 - mean_squared_error: 0.1673 - rmse: 0.4050 -
mean_absolute_percentage_error: 151.1732
Epoch 97/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1894 -
mean_absolute_error: 0.2781 - mean_squared_error: 0.1632 - rmse: 0.3999 -
mean_absolute_percentage_error: 159.4717
Epoch 98/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1892 -
mean_absolute_error: 0.2772 - mean_squared_error: 0.1631 - rmse: 0.3995 -
mean_absolute_percentage_error: 153.4206
Epoch 99/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1928 -
mean_absolute_error: 0.2804 - mean_squared_error: 0.1668 - rmse: 0.4038 -
mean_absolute_percentage_error: 151.0307
Epoch 100/100
210/210 [==============================] - 0s 2ms/step - loss: 0.1936 -
mean_absolute_error: 0.2796 - mean_squared_error: 0.1676 - rmse: 0.4048 -
mean_absolute_percentage_error: 146.8349
100/100 [==============================] - 0s 2ms/step - loss: 0.1944 -
mean_absolute_error: 0.2810 - mean_squared_error: 0.1685 - rmse: 0.4051 -
mean_absolute_percentage_error: 164.8179
200/200 [==============================] - 0s 1ms/step
```
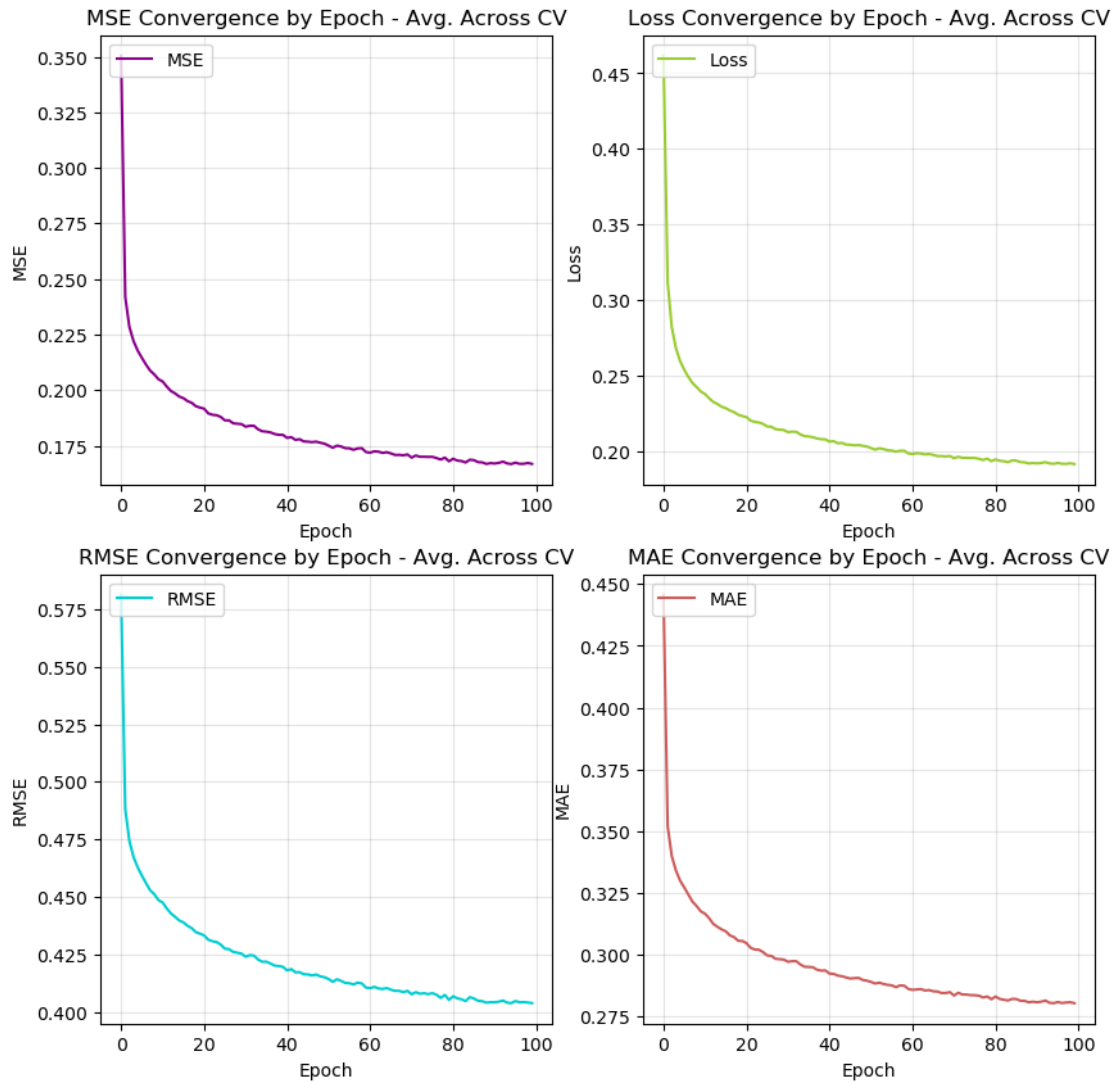
[23]:
```python
#Graph for Measures
figure_mixed = graph_metric_by_fold(compendium_mixed)
plt.show()
```

```
[24]:  #Graph for Convergence
       figure_mixed = graph_epoch_convergence(compendium_mixed)
       plt.show()
```

MSE Convergence by Epoch - Avg. Across CV

Loss Convergence by Epoch - Avg. Across CV

RMSE Convergence by Epoch - Avg. Across CV

MAE Convergence by Epoch - Avg. Across CV

8 Comparison

```
[25]:  #All metrics
       #Vanilla
       v_nn_mse = give_me_avg(compendium_v, 'MSE')
       v_nn_mae = give_me_avg(compendium_v, 'MAE')
       v_nn_rmse = give_me_avg(compendium_v, 'RMSE')
       v_nn_r2 = give_me_avg(compendium_v, 'R2')
       v_nn_maw = give_me_avg(compendium_v, 'MAW')
       v_nn_msw = give_me_avg(compendium_v, 'MSW')

       #L1
       l1_nn_mse = give_me_avg(compendium_l1, 'MSE')
```

```
l1_nn_mae = give_me_avg(compendium_l1, 'MAE')
l1_nn_rmse = give_me_avg(compendium_l1, 'RMSE')
l1_nn_r2 = give_me_avg(compendium_l1, 'R2')
l1_nn_maw = give_me_avg(compendium_l1, 'MAW')
l1_nn_msw = give_me_avg(compendium_l1, 'MSW')

#L2
l2_nn_mse = give_me_avg(compendium_l2, 'MSE')
l2_nn_mae = give_me_avg(compendium_l2, 'MAE')
l2_nn_rmse = give_me_avg(compendium_l2, 'RMSE')
l2_nn_r2 = give_me_avg(compendium_l2, 'R2')
l2_nn_maw = give_me_avg(compendium_l2, 'MAW')
l2_nn_msw = give_me_avg(compendium_l2, 'MSW')

#Mixed
m_nn_mse = give_me_avg(compendium_mixed, 'MSE')
m_nn_mae = give_me_avg(compendium_mixed, 'MAE')
m_nn_rmse = give_me_avg(compendium_mixed, 'RMSE')
m_nn_r2 = give_me_avg(compendium_mixed, 'R2')
m_nn_maw = give_me_avg(compendium_mixed, 'MAW')
m_nn_msw = give_me_avg(compendium_mixed, 'MSW')
```

[26]:
```
#Making the table

# create comparison table
comparison = pd.DataFrame()

# add components
comparison['Regularisation'] = ['Vanilla', 'L1 (Lasso)', 'L2 (Ridge)', 'Elastic␣
 ↪Net']

comparison['MAE'] = [v_nn_mae, l1_nn_mae, l2_nn_mae, m_nn_mae]
comparison['MSE'] = [v_nn_mse, l1_nn_mse, l2_nn_mse, m_nn_mse]
comparison['RMSE'] = [v_nn_rmse, l1_nn_rmse, l2_nn_rmse, m_nn_rmse]
comparison['R2'] = [v_nn_r2, l1_nn_r2, l2_nn_r2, m_nn_r2]
comparison['MAW'] = [v_nn_maw, l1_nn_maw, l2_nn_maw, m_nn_maw]
comparison['MSW'] = [v_nn_msw, l1_nn_msw, l2_nn_msw, m_nn_msw]




# set index
comparison.set_index("Regularisation")
```

[26]:
```
                        MAE       MSE       RMSE        R2        MAW       MSW
     Regularisation
     Vanilla         0.260088  0.147366  0.378400  0.853250  0.115760  0.022320
     L1 (Lasso)      0.281361  0.168380  0.404771  0.832324  0.011337  0.004299
```

```
L2 (Ridge)      0.261866  0.154037  0.386551  0.846606  0.044525  0.005259
Elastic Net     0.284897  0.172139  0.409279  0.828579  0.010915  0.004468
```

[ ]:

[ ]: