MLPRegressor_Seg_v3_stage_2

November 25, 2022

1 MLPRegressor

```python
import numpy as np
import pandas as pd

import matplotlib.pyplot as plt
import seaborn as sns

from sklearn.model_selection import train_test_split, RandomizedSearchCV
from sklearn.preprocessing import StandardScaler
from sklearn.pipeline import Pipeline
from sklearn.neural_network import MLPRegressor
from sklearn.feature_selection import SelectFromModel
from sklearn.metrics import r2_score, mean_absolute_percentage_error,
 mean_absolute_error, mean_squared_error
from statsmodels.tools.eval_measures import stde

import kerastuner as kt
import tensorflow as tf
from tensorflow.keras import models
```

```
2022-11-25 12:40:19.437220: I tensorflow/core/platform/cpu_feature_guard.cc:193]
This TensorFlow binary is optimized with oneAPI Deep Neural Network Library
(oneDNN) to use the following CPU instructions in performance-critical
operations:  AVX2 FMA
To enable them in other operations, rebuild TensorFlow with the appropriate
compiler flags.
2022-11-25 12:40:19.676917: E tensorflow/stream_executor/cuda/cuda_blas.cc:2981]
Unable to register cuBLAS factory: Attempting to register factory for plugin
cuBLAS when one has already been registered
2022-11-25 12:40:20.172658: W
tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load
dynamic library 'libnvinfer.so.7'; dlerror: libnvinfer.so.7: cannot open shared
object file: No such file or directory; LD_LIBRARY_PATH:
:/home/nkspartan/miniconda3/envs/tf-gpu/lib/
2022-11-25 12:40:20.172768: W
tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load
dynamic library 'libnvinfer_plugin.so.7'; dlerror: libnvinfer_plugin.so.7:
```

cannot open shared object file: No such file or directory; LD_LIBRARY_PATH:
:/home/nkspartan/miniconda3/envs/tf-gpu/lib/
2022-11-25 12:40:20.172776: W
tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Cannot
dlopen some TensorRT libraries. If you would like to use Nvidia GPU with
TensorRT, please make sure the missing libraries mentioned above are installed
properly.
/tmp/ipykernel_40052/891238804.py:15: DeprecationWarning: `import kerastuner` is
deprecated, please use `import keras_tuner`.
  import kerastuner as kt

```python
from tensorflow.python.client import device_lib

print('Default GPU Device: {}'.format(tf.test.gpu_device_name()))
```

2022-11-25 12:40:20.725222: I tensorflow/core/platform/cpu_feature_guard.cc:193]
This TensorFlow binary is optimized with oneAPI Deep Neural Network Library
(oneDNN) to use the following CPU instructions in performance-critical
operations: AVX2 FMA
To enable them in other operations, rebuild TensorFlow with the appropriate
compiler flags.
2022-11-25 12:40:20.734914: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:20.739384: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:20.739582: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:21.188541: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:21.188746: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:21.188903: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:21.189033: I
tensorflow/core/common_runtime/gpu/gpu_device.cc:1616] Created device
/device:GPU:0 with 110 MB memory: -> device: 0, name: NVIDIA GeForce RTX 2060,

```
pci bus id: 0000:08:00.0, compute capability: 7.5

Default GPU Device: /device:GPU:0
```

1.1 Read the etl info results

```
[ ]: df_info = pd.read_csv('../dataset_clean/options_csv_v1_etl.csv')
     df_info
```

```
[ ]:    remove_time_features  generic_features  remove_atypical_values  \
     0                 False              True                   False

        feature_combination remove_feature_selection  \
     0                 False                    Lasso

        remove_invalid_correlated_features
     0                              False
```

1.2 Read the dataset

```
[ ]: df = pd.read_csv('../dataset/
     ↪Seresnet_101_V1_PlatteRiverWeir_features_merged_all.csv')
     df
```

```
[ ]:        Unnamed: 0.1  Unnamed: 0           SensorTime           CaptureTime  \
     0                 0           0  2012-06-09 13:15:00  2012-06-09T13:09:07
     1                 1           1  2012-06-09 13:15:00  2012-06-09T13:10:29
     2                 2           2  2012-06-09 13:45:00  2012-06-09T13:44:01
     3                 3           3  2012-06-09 14:45:00  2012-06-09T14:44:30
     4                 4           4  2012-06-09 15:45:00  2012-06-09T15:44:59
     ...             ...         ...                  ...                  ...
     42054         42054       42054  2019-10-11 09:00:00  2019-10-11T08:59:53
     42055         42055       42055  2019-10-11 10:00:00  2019-10-11T09:59:52
     42056         42056       42056  2019-10-11 11:00:00  2019-10-11T10:59:52
     42057         42057       42057  2019-10-11 12:00:00  2019-10-11T11:59:53
     42058         42058       42058  2019-10-11 12:45:00  2019-10-11T12:59:52

                                       Filename Agency  SiteNumber TimeZone  \
     0      StateLineWeir_20120609_Farrell_001.jpg   USGS     6674500      MDT
     1      StateLineWeir_20120609_Farrell_002.jpg   USGS     6674500      MDT
     2      StateLineWeir_20120609_Farrell_003.jpg   USGS     6674500      MDT
     3      StateLineWeir_20120609_Farrell_004.jpg   USGS     6674500      MDT
     4      StateLineWeir_20120609_Farrell_005.jpg   USGS     6674500      MDT
     ...                                       ...    ...         ...      ...
     42054  StateLineWeir_20191011_Farrell_409.jpg   USGS     6674500      MDT
     42055  StateLineWeir_20191011_Farrell_410.jpg   USGS     6674500      MDT
     42056  StateLineWeir_20191011_Farrell_411.jpg   USGS     6674500      MDT
     42057  StateLineWeir_20191011_Farrell_412.jpg   USGS     6674500      MDT
```

```
42058   StateLineWeir_20191011_Farrell_413.jpg   USGS      6674500       MDT

        Stage   Discharge  … WwRawLineMax  WwRawLineMean  WwRawLineSigma  \
0        2.99      916.0   …          0.0       0.000000        0.000000
1        2.99      916.0   …          0.0       0.000000        0.000000
2        2.96      873.0   …          0.0       0.000000        0.000000
3        2.94      846.0   …          0.0       0.000000        0.000000
4        2.94      846.0   …          0.0       0.000000        0.000000
…         …         …      …           …            …               …
42054    2.54      434.0   …      77521.0   38385.370066    15952.029728
42055    2.54      434.0   …      74614.0   40162.989292    15467.708856
42056    2.54      434.0   …      83260.0   42095.946590    16770.357949
42057    2.54      434.0   …      83045.0   45345.490954    17498.432849
42058    2.54      434.0   …      89813.0   47877.870782    19963.166359

        WwCurveLineMin  WwCurveLineMax  WwCurveLineMean  WwCurveLineSigma  \
0                  0.0             0.0         0.000000          0.000000
1                  0.0             0.0         0.000000          0.000000
2                  0.0             0.0         0.000000          0.000000
3                  0.0             0.0         0.000000          0.000000
4                  0.0             0.0         0.000000          0.000000
…                   …               …               …                 …
42054              0.0         70085.0     37550.894823      16444.401209
42055              0.0         70061.0     39397.339095      16009.008049
42056              0.0         76335.0     41350.006568      17489.374617
42057              0.0         78882.0     44553.920296      18268.294896
42058              0.0         82630.0     47280.270559      20559.358767

        RiverArea  RiverWidth                      FilenameLower
0         48600.0  204.684959  statelineweir_20120609_farrell_001.jpg
1         48672.0  205.898452  statelineweir_20120609_farrell_002.jpg
2         48789.0  206.525571  statelineweir_20120609_farrell_003.jpg
3         49458.0  209.652156  statelineweir_20120609_farrell_004.jpg
4         49719.0  210.088266  statelineweir_20120609_farrell_005.jpg
…             …           …                              …
42054     41501.0  166.685071  statelineweir_20191011_farrell_409.jpg
42055     41591.0  171.758237  statelineweir_20191011_farrell_410.jpg
42056     41949.0  176.424371  statelineweir_20191011_farrell_411.jpg
42057     42822.0  172.268391  statelineweir_20191011_farrell_412.jpg
42058     43076.0  175.271876  statelineweir_20191011_farrell_413.jpg

[42059 rows x 64 columns]
```

```python
df['SensorTime'] = pd.to_datetime(df['SensorTime'])
df['Year'] = df['SensorTime'].dt.year
df['Month'] = df['SensorTime'].dt.month
```

```python
df['date_offset'] = (df.SensorTime.dt.month * 100 + df.SensorTime.dt.day -
→320)%1300

df['Season'] = pd.cut(df['date_offset'], [0, 300, 602, 900, 1300],
                      labels=['spring', 'summer', 'autumn', 'winter'])
```

```python
df = df[["CaptureTime", "SensorTime", "Stage", "Discharge", "RiverArea",
→"RiverWidth", "Month", "Season", "Year"]]
df
```

```
                CaptureTime          SensorTime  Stage  Discharge  RiverArea  \
0       2012-06-09T13:09:07  2012-06-09 13:15:00   2.99      916.0    48600.0
1       2012-06-09T13:10:29  2012-06-09 13:15:00   2.99      916.0    48672.0
2       2012-06-09T13:44:01  2012-06-09 13:45:00   2.96      873.0    48789.0
3       2012-06-09T14:44:30  2012-06-09 14:45:00   2.94      846.0    49458.0
4       2012-06-09T15:44:59  2012-06-09 15:45:00   2.94      846.0    49719.0
...                     ...                  ...    ...        ...        ...
42054   2019-10-11T08:59:53  2019-10-11 09:00:00   2.54      434.0    41501.0
42055   2019-10-11T09:59:52  2019-10-11 10:00:00   2.54      434.0    41591.0
42056   2019-10-11T10:59:52  2019-10-11 11:00:00   2.54      434.0    41949.0
42057   2019-10-11T11:59:53  2019-10-11 12:00:00   2.54      434.0    42822.0
42058   2019-10-11T12:59:52  2019-10-11 12:45:00   2.54      434.0    43076.0

        RiverWidth  Month  Season  Year
0       204.684959      6  spring  2012
1       205.898452      6  spring  2012
2       206.525571      6  spring  2012
3       209.652156      6  spring  2012
4       210.088266      6  spring  2012
...            ...    ...     ...   ...
42054   166.685071     10  autumn  2019
42055   171.758237     10  autumn  2019
42056   176.424371     10  autumn  2019
42057   172.268391     10  autumn  2019
42058   175.271876     10  autumn  2019

[42059 rows x 9 columns]
```

```python
df.dtypes
```

```
CaptureTime           object
SensorTime    datetime64[ns]
Stage                float64
Discharge            float64
RiverArea            float64
RiverWidth           float64
Month                  int64
```

```
Season                 category
Year                      int64
dtype: object
```

1.2.1 Remove outliers

```python
df = df[df.Stage > 0]
df = df[df.Discharge > 0]
df.shape
```

```
(40148, 9)
```

```python
df = df[df.RiverWidth > 0]
#df = df[df.Discharge > 0]
df.shape
```

```
(40142, 9)
```

1.2.2 Remove winter

```python
#df = df[df.Season != "winter"]
```

```python
df.isna().sum()
```

```
CaptureTime      0
SensorTime       0
Stage            0
Discharge        0
RiverArea        0
RiverWidth       0
Month            0
Season         126
Year             0
dtype: int64
```

1.3 Divide dataset to X and Y

```python
np.random.seed(0)

df_train = df[(df.Year >= 2012) & (df.Year <= 2016)]
df_train = df_train.iloc[np.random.permutation(len(df_train))]

df_val = df[(df.Year >= 2017) & (df.Year <= 2017)]
df_val = df_val.iloc[np.random.permutation(len(df_val))]

df_test = df[(df.Year >= 2018) & (df.Year <= 2019)]
```

```python
df_train = df_train.drop(columns=["Year", "SensorTime", "CaptureTime"])
df_val = df_val.drop(columns=["Year", "SensorTime", "CaptureTime"])
df_test = df_test.drop(columns=["Year", "SensorTime", "CaptureTime"])
```

```python
y_train = df_train[["Stage"]].values
X_train = df_train[["RiverWidth", "Month"]].values

y_val = df_train[["Stage"]].values
X_val = df_train[["RiverWidth", "Month"]].values

y_test = df_test[["Stage"]].values
X_test = df_test[["RiverWidth", "Month"]].values
```

```python
print(X_train.shape)
print(y_train.shape)
```

```
(20304, 2)
(20304, 1)
```

```python
input_shape = X_train.shape[1]
output_shape = y_train.shape[1]

print(input_shape, output_shape)
```

```
2 1
```

1.4 Train model

```python
def model_builder(lr):
    model = tf.keras.Sequential()
    model.add(tf.keras.Input(shape=input_shape))

    # Tune the number of units in the first Dense layer
    # Choose an optimal value between 32-512

    model.add(tf.keras.layers.Dense(32, activation="relu"))
    model.add(tf.keras.layers.Dense(64, activation="relu"))
    model.add(tf.keras.layers.Dense(128, activation="relu"))
    model.add(tf.keras.layers.Dense(64, activation="relu"))
    """model.add(tf.keras.layers.Dense(256, activation="tanh"))
    model.add(tf.keras.layers.Dense(512, activation="tanh"))
    model.add(tf.keras.layers.Dense(512, activation="tanh"))
    model.add(tf.keras.layers.Dense(256, activation="tanh"))
    model.add(tf.keras.layers.Dense(256, activation="tanh"))
    model.add(tf.keras.layers.Dense(128, activation="tanh"))
    model.add(tf.keras.layers.Dense(64, activation="tanh"))
    model.add(tf.keras.layers.Dense(32, activation="tanh"))"""
```

```python
    model.add(tf.keras.layers.Dense(output_shape, activation = 'linear'))


    model.compile(optimizer = tf.keras.optimizers.Adam(learning_rate = lr), loss␣
    ↪= 'mse', metrics = ['mse', tf.keras.metrics.
    ↪RootMeanSquaredError(name='rmse'), 'mae', 'mape'])

    return model
```

```python
[ ]: model = model_builder(1e-3)
```

```
2022-11-25 12:40:22.166786: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:22.167093: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:22.167296: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:22.167977: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:22.168178: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:22.168366: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:22.168632: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:22.168851: I
tensorflow/stream_executor/cuda/cuda_gpu_executor.cc:980] successful NUMA node
read from SysFS had negative value (-1), but there must be at least one NUMA
node, so returning NUMA node zero
2022-11-25 12:40:22.169015: I
tensorflow/core/common_runtime/gpu/gpu_device.cc:1616] Created device
```

```
/job:localhost/replica:0/task:0/device:GPU:0 with 110 MB memory:  -> device: 0,
name: NVIDIA GeForce RTX 2060, pci bus id: 0000:08:00.0, compute capability: 7.5
```

[ ]:
```python
import datetime

date_actual = datetime.datetime.now().strftime("%Y%m%d-%H%M%S")
log_dir = "logs/fit/" + date_actual
tensorboard_callback = tf.keras.callbacks.TensorBoard(log_dir=log_dir,
 →histogram_freq=1)


es_callback = tf.keras.callbacks.EarlyStopping(monitor='val_loss', mode='min',
 →verbose=1, patience=100)


checkpoint_callback = tf.keras.callbacks.
 →ModelCheckpoint(filepath=f"model_weights/{date_actual}_mlp_seg_best_weights.
 →hdf5",
                              monitor='val_loss',
                              verbose=1,
                              save_best_only=True)
```

[ ]:
```python
model.fit(X_train, y_train, epochs = 2000, batch_size = 64, validation_data =
 →(X_val, y_val), callbacks=[checkpoint_callback, es_callback, tf.keras.
 →callbacks.ReduceLROnPlateau(patience=40)])
```

```
Epoch 1/2000
315/318 [=============================>.] - ETA: 0s - loss: 1.5942 - mse: 1.5942
- rmse: 1.2626 - mae: 0.8093 - mape: 28.2478
Epoch 1: val_loss improved from inf to 0.69714, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 2s 4ms/step - loss: 1.5885 - mse:
1.5885 - rmse: 1.2604 - mae: 0.8088 - mape: 28.2368 - val_loss: 0.6971 -
val_mse: 0.6971 - val_rmse: 0.8349 - val_mae: 0.5825 - val_mape: 18.0457 - lr:
0.0010
Epoch 2/2000
307/318 [============================>..] - ETA: 0s - loss: 0.7022 - mse: 0.7022
- rmse: 0.8380 - mae: 0.6340 - mape: 21.7619
Epoch 2: val_loss improved from 0.69714 to 0.62361, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.6995 - mse:
0.6995 - rmse: 0.8364 - mae: 0.6320 - mape: 21.6950 - val_loss: 0.6236 -
val_mse: 0.6236 - val_rmse: 0.7897 - val_mae: 0.6082 - val_mape: 21.6198 - lr:
0.0010
Epoch 3/2000
312/318 [============================>.] - ETA: 0s - loss: 0.7326 - mse: 0.7326
- rmse: 0.8559 - mae: 0.6451 - mape: 22.0975
Epoch 3: val_loss did not improve from 0.62361
318/318 [==============================] - 1s 3ms/step - loss: 0.7316 - mse:
```

0.7316 - rmse: 0.8553 - mae: 0.6448 - mape: 22.0846 - val_loss: 0.6708 -
val_mse: 0.6708 - val_rmse: 0.8190 - val_mae: 0.5539 - val_mape: 16.8147 - lr:
0.0010
Epoch 4/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.7336 - mse: 0.7336
- rmse: 0.8565 - mae: 0.6417 - mape: 21.9240
Epoch 4: val_loss did not improve from 0.62361
318/318 [==============================] - 1s 3ms/step - loss: 0.7239 - mse:
0.7239 - rmse: 0.8508 - mae: 0.6360 - mape: 21.7323 - val_loss: 0.6370 -
val_mse: 0.6370 - val_rmse: 0.7981 - val_mae: 0.6583 - val_mape: 24.5437 - lr:
0.0010
Epoch 5/2000
310/318 [=============================>.] - ETA: 0s - loss: 0.6416 - mse: 0.6416
- rmse: 0.8010 - mae: 0.5960 - mape: 20.3342
Epoch 5: val_loss did not improve from 0.62361
318/318 [==============================] - 1s 3ms/step - loss: 0.6403 - mse:
0.6403 - rmse: 0.8002 - mae: 0.5949 - mape: 20.2834 - val_loss: 1.4377 -
val_mse: 1.4377 - val_rmse: 1.1990 - val_mae: 1.1014 - val_mape: 43.5422 - lr:
0.0010
Epoch 6/2000
318/318 [==============================] - ETA: 0s - loss: 0.5863 - mse: 0.5863
- rmse: 0.7657 - mae: 0.5635 - mape: 19.2127
Epoch 6: val_loss improved from 0.62361 to 0.48546, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.5863 - mse:
0.5863 - rmse: 0.7657 - mae: 0.5635 - mape: 19.2127 - val_loss: 0.4855 -
val_mse: 0.4855 - val_rmse: 0.6967 - val_mae: 0.4768 - val_mape: 15.5111 - lr:
0.0010
Epoch 7/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.5688 - mse: 0.5688
- rmse: 0.7542 - mae: 0.5520 - mape: 18.8414
Epoch 7: val_loss did not improve from 0.48546
318/318 [==============================] - 1s 3ms/step - loss: 0.5658 - mse:
0.5658 - rmse: 0.7522 - mae: 0.5506 - mape: 18.7814 - val_loss: 0.5091 -
val_mse: 0.5091 - val_rmse: 0.7135 - val_mae: 0.5632 - val_mape: 20.4574 - lr:
0.0010
Epoch 8/2000
308/318 [============================>.] - ETA: 0s - loss: 0.5211 - mse: 0.5211
- rmse: 0.7218 - mae: 0.5250 - mape: 17.8376
Epoch 8: val_loss improved from 0.48546 to 0.45261, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.5212 - mse:
0.5212 - rmse: 0.7219 - mae: 0.5248 - mape: 17.8293 - val_loss: 0.4526 -
val_mse: 0.4526 - val_rmse: 0.6728 - val_mae: 0.4822 - val_mape: 16.3474 - lr:
0.0010
Epoch 9/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.5418 - mse: 0.5418
- rmse: 0.7361 - mae: 0.5392 - mape: 18.4131

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Epoch 9: val_loss did not improve from 0.45261
318/318 [==============================] - 1s 3ms/step - loss: 0.5505 - mse:
0.5505 - rmse: 0.7420 - mae: 0.5438 - mape: 18.5695 - val_loss: 0.5222 -
val_mse: 0.5222 - val_rmse: 0.7226 - val_mae: 0.5803 - val_mape: 21.2856 - lr:
0.0010
Epoch 10/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.4980 - mse: 0.4980
- rmse: 0.7057 - mae: 0.5126 - mape: 17.3625
Epoch 10: val_loss did not improve from 0.45261
318/318 [==============================] - 1s 3ms/step - loss: 0.4983 - mse:
0.4983 - rmse: 0.7059 - mae: 0.5133 - mape: 17.4190 - val_loss: 0.8169 -
val_mse: 0.8169 - val_rmse: 0.9038 - val_mae: 0.6685 - val_mape: 20.9104 - lr:
0.0010
Epoch 11/2000
296/318 [===========================>…] - ETA: 0s - loss: 0.4963 - mse: 0.4963
- rmse: 0.7045 - mae: 0.5127 - mape: 17.3421
Epoch 11: val_loss did not improve from 0.45261
318/318 [==============================] - 1s 3ms/step - loss: 0.4930 - mse:
0.4930 - rmse: 0.7021 - mae: 0.5103 - mape: 17.2966 - val_loss: 0.4851 -
val_mse: 0.4851 - val_rmse: 0.6965 - val_mae: 0.5433 - val_mape: 19.0993 - lr:
0.0010
Epoch 12/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.4709 - mse: 0.4709
- rmse: 0.6862 - mae: 0.4966 - mape: 16.8022
Epoch 12: val_loss improved from 0.45261 to 0.43310, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.4714 - mse:
0.4714 - rmse: 0.6866 - mae: 0.4970 - mape: 16.8074 - val_loss: 0.4331 -
val_mse: 0.4331 - val_rmse: 0.6581 - val_mae: 0.4661 - val_mape: 15.5829 - lr:
0.0010
Epoch 13/2000
316/318 [============================>.] - ETA: 0s - loss: 0.4870 - mse: 0.4870
- rmse: 0.6979 - mae: 0.5064 - mape: 17.1631
Epoch 13: val_loss did not improve from 0.43310
318/318 [==============================] - 1s 3ms/step - loss: 0.4867 - mse:
0.4867 - rmse: 0.6976 - mae: 0.5064 - mape: 17.1680 - val_loss: 0.4364 -
val_mse: 0.4364 - val_rmse: 0.6606 - val_mae: 0.4577 - val_mape: 15.0534 - lr:
0.0010
Epoch 14/2000
314/318 [============================>.] - ETA: 0s - loss: 0.4913 - mse: 0.4913
- rmse: 0.7009 - mae: 0.5098 - mape: 17.2668
Epoch 14: val_loss did not improve from 0.43310
318/318 [==============================] - 1s 3ms/step - loss: 0.4907 - mse:
0.4907 - rmse: 0.7005 - mae: 0.5095 - mape: 17.2642 - val_loss: 0.4939 -
val_mse: 0.4939 - val_rmse: 0.7028 - val_mae: 0.4511 - val_mape: 13.8378 - lr:
0.0010
Epoch 15/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.4565 - mse: 0.4565
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- rmse: 0.6757 - mae: 0.4856 - mape: 16.3339
Epoch 15: val_loss did not improve from 0.43310
318/318 [==============================] - 1s 3ms/step - loss: 0.4626 - mse:
0.4626 - rmse: 0.6801 - mae: 0.4893 - mape: 16.4710 - val_loss: 0.4340 -
val_mse: 0.4340 - val_rmse: 0.6588 - val_mae: 0.4568 - val_mape: 15.0991 - lr:
0.0010
Epoch 16/2000
317/318 [============================>.] - ETA: 0s - loss: 0.4674 - mse: 0.4674
- rmse: 0.6836 - mae: 0.4920 - mape: 16.6039
Epoch 16: val_loss did not improve from 0.43310
318/318 [==============================] - 1s 3ms/step - loss: 0.4672 - mse:
0.4672 - rmse: 0.6835 - mae: 0.4919 - mape: 16.6027 - val_loss: 0.4360 -
val_mse: 0.4360 - val_rmse: 0.6603 - val_mae: 0.4534 - val_mape: 14.8001 - lr:
0.0010
Epoch 17/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.4447 - mse: 0.4447
- rmse: 0.6669 - mae: 0.4755 - mape: 15.9864
Epoch 17: val_loss improved from 0.43310 to 0.42041, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.4453 - mse:
0.4453 - rmse: 0.6673 - mae: 0.4761 - mape: 15.9838 - val_loss: 0.4204 -
val_mse: 0.4204 - val_rmse: 0.6484 - val_mae: 0.4355 - val_mape: 14.0447 - lr:
0.0010
Epoch 18/2000
318/318 [==============================] - ETA: 0s - loss: 0.4393 - mse: 0.4393
- rmse: 0.6628 - mae: 0.4723 - mape: 15.8564
Epoch 18: val_loss did not improve from 0.42041
318/318 [==============================] - 1s 3ms/step - loss: 0.4393 - mse:
0.4393 - rmse: 0.6628 - mae: 0.4723 - mape: 15.8564 - val_loss: 0.4653 -
val_mse: 0.4653 - val_rmse: 0.6822 - val_mae: 0.5347 - val_mape: 19.2559 - lr:
0.0010
Epoch 19/2000
299/318 [==========================>..] - ETA: 0s - loss: 0.4487 - mse: 0.4487
- rmse: 0.6698 - mae: 0.4809 - mape: 16.2133
Epoch 19: val_loss improved from 0.42041 to 0.41862, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.4446 - mse:
0.4446 - rmse: 0.6668 - mae: 0.4779 - mape: 16.1021 - val_loss: 0.4186 -
val_mse: 0.4186 - val_rmse: 0.6470 - val_mae: 0.4697 - val_mape: 15.8722 - lr:
0.0010
Epoch 20/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.4404 - mse: 0.4404
- rmse: 0.6636 - mae: 0.4719 - mape: 15.8210
Epoch 20: val_loss did not improve from 0.41862
318/318 [==============================] - 1s 3ms/step - loss: 0.4426 - mse:
0.4426 - rmse: 0.6652 - mae: 0.4737 - mape: 15.8933 - val_loss: 0.4211 -
val_mse: 0.4211 - val_rmse: 0.6489 - val_mae: 0.4322 - val_mape: 13.9343 - lr:
0.0010
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Epoch 21/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.4303 - mse: 0.4303
- rmse: 0.6560 - mae: 0.4667 - mape: 15.6432
Epoch 21: val_loss did not improve from 0.41862
318/318 [==============================] - 1s 3ms/step - loss: 0.4291 - mse:
0.4291 - rmse: 0.6551 - mae: 0.4660 - mape: 15.6211 - val_loss: 0.4415 -
val_mse: 0.4415 - val_rmse: 0.6645 - val_mae: 0.4737 - val_mape: 15.5545 - lr:
0.0010
Epoch 22/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.4235 - mse: 0.4235
- rmse: 0.6508 - mae: 0.4601 - mape: 15.3654
Epoch 22: val_loss improved from 0.41862 to 0.39305, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.4222 - mse:
0.4222 - rmse: 0.6498 - mae: 0.4592 - mape: 15.3176 - val_loss: 0.3931 -
val_mse: 0.3931 - val_rmse: 0.6269 - val_mae: 0.4646 - val_mape: 15.9913 - lr:
0.0010
Epoch 23/2000
314/318 [============================>.] - ETA: 0s - loss: 0.3984 - mse: 0.3984
- rmse: 0.6312 - mae: 0.4435 - mape: 14.7497
Epoch 23: val_loss improved from 0.39305 to 0.37579, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.3987 - mse:
0.3987 - rmse: 0.6314 - mae: 0.4438 - mape: 14.7635 - val_loss: 0.3758 -
val_mse: 0.3758 - val_rmse: 0.6130 - val_mae: 0.4122 - val_mape: 13.2974 - lr:
0.0010
Epoch 24/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.3946 - mse: 0.3946
- rmse: 0.6281 - mae: 0.4407 - mape: 14.6362
Epoch 24: val_loss improved from 0.37579 to 0.35664, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.3966 - mse:
0.3966 - rmse: 0.6298 - mae: 0.4419 - mape: 14.6751 - val_loss: 0.3566 -
val_mse: 0.3566 - val_rmse: 0.5972 - val_mae: 0.4079 - val_mape: 13.1407 - lr:
0.0010
Epoch 25/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.3965 - mse: 0.3965
- rmse: 0.6297 - mae: 0.4388 - mape: 14.4982
Epoch 25: val_loss did not improve from 0.35664
318/318 [==============================] - 1s 3ms/step - loss: 0.3954 - mse:
0.3954 - rmse: 0.6288 - mae: 0.4371 - mape: 14.4319 - val_loss: 0.3647 -
val_mse: 0.3647 - val_rmse: 0.6039 - val_mae: 0.4368 - val_mape: 15.0881 - lr:
0.0010
Epoch 26/2000
317/318 [=============================>.] - ETA: 0s - loss: 0.3601 - mse: 0.3601
- rmse: 0.6001 - mae: 0.4099 - mape: 13.4085
Epoch 26: val_loss did not improve from 0.35664
318/318 [==============================] - 1s 3ms/step - loss: 0.3602 - mse:
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0.3602 - rmse: 0.6001 - mae: 0.4099 - mape: 13.4102 - val_loss: 0.4079 -
val_mse: 0.4079 - val_rmse: 0.6387 - val_mae: 0.4779 - val_mape: 16.9809 - lr:
0.0010
Epoch 27/2000
307/318 [============================>..] - ETA: 0s - loss: 0.3582 - mse: 0.3582
- rmse: 0.5985 - mae: 0.4093 - mape: 13.3674
Epoch 27: val_loss did not improve from 0.35664
318/318 [==============================] - 1s 3ms/step - loss: 0.3593 - mse:
0.3593 - rmse: 0.5994 - mae: 0.4105 - mape: 13.4158 - val_loss: 0.4177 -
val_mse: 0.4177 - val_rmse: 0.6463 - val_mae: 0.4800 - val_mape: 16.9831 - lr:
0.0010
Epoch 28/2000
316/318 [=============================>.] - ETA: 0s - loss: 0.3669 - mse: 0.3669
- rmse: 0.6057 - mae: 0.4158 - mape: 13.6117
Epoch 28: val_loss improved from 0.35664 to 0.32974, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.3666 - mse:
0.3666 - rmse: 0.6055 - mae: 0.4155 - mape: 13.6003 - val_loss: 0.3297 -
val_mse: 0.3297 - val_rmse: 0.5742 - val_mae: 0.3987 - val_mape: 13.3569 - lr:
0.0010
Epoch 29/2000
292/318 [===========================>…] - ETA: 0s - loss: 0.3416 - mse: 0.3416
- rmse: 0.5845 - mae: 0.3963 - mape: 12.8262
Epoch 29: val_loss did not improve from 0.32974
318/318 [==============================] - 1s 3ms/step - loss: 0.3409 - mse:
0.3409 - rmse: 0.5839 - mae: 0.3948 - mape: 12.7804 - val_loss: 0.3332 -
val_mse: 0.3332 - val_rmse: 0.5772 - val_mae: 0.3568 - val_mape: 10.7645 - lr:
0.0010
Epoch 30/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.3418 - mse: 0.3418
- rmse: 0.5847 - mae: 0.3909 - mape: 12.6123
Epoch 30: val_loss did not improve from 0.32974
318/318 [==============================] - 1s 3ms/step - loss: 0.3436 - mse:
0.3436 - rmse: 0.5862 - mae: 0.3914 - mape: 12.6238 - val_loss: 0.4997 -
val_mse: 0.4997 - val_rmse: 0.7069 - val_mae: 0.5452 - val_mape: 20.0564 - lr:
0.0010
Epoch 31/2000
299/318 [============================>..] - ETA: 0s - loss: 0.3373 - mse: 0.3373
- rmse: 0.5808 - mae: 0.3858 - mape: 12.4570
Epoch 31: val_loss did not improve from 0.32974
318/318 [==============================] - 1s 3ms/step - loss: 0.3371 - mse:
0.3371 - rmse: 0.5806 - mae: 0.3852 - mape: 12.4236 - val_loss: 0.4119 -
val_mse: 0.4119 - val_rmse: 0.6418 - val_mae: 0.4518 - val_mape: 16.0517 - lr:
0.0010
Epoch 32/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.3208 - mse: 0.3208
- rmse: 0.5664 - mae: 0.3733 - mape: 12.0096
Epoch 32: val_loss did not improve from 0.32974

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318/318 [==============================] - 1s 3ms/step - loss: 0.3259 - mse: 0.3259 - rmse: 0.5709 - mae: 0.3763 - mape: 12.1135 - val_loss: 0.5235 - val_mse: 0.5235 - val_rmse: 0.7235 - val_mae: 0.5179 - val_mape: 19.2291 - lr: 0.0010
Epoch 33/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.3299 - mse: 0.3299 - rmse: 0.5743 - mae: 0.3762 - mape: 12.1259
Epoch 33: val_loss improved from 0.32974 to 0.30600, saving model to model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.3294 - mse: 0.3294 - rmse: 0.5739 - mae: 0.3759 - mape: 12.1107 - val_loss: 0.3060 - val_mse: 0.3060 - val_rmse: 0.5532 - val_mae: 0.3706 - val_mape: 12.1684 - lr: 0.0010
Epoch 34/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.3108 - mse: 0.3108 - rmse: 0.5575 - mae: 0.3645 - mape: 11.6999
Epoch 34: val_loss did not improve from 0.30600
318/318 [==============================] - 1s 3ms/step - loss: 0.3106 - mse: 0.3106 - rmse: 0.5573 - mae: 0.3638 - mape: 11.6580 - val_loss: 0.3339 - val_mse: 0.3339 - val_rmse: 0.5779 - val_mae: 0.3493 - val_mape: 10.2367 - lr: 0.0010
Epoch 35/2000
298/318 [==========================>..] - ETA: 0s - loss: 0.3068 - mse: 0.3068 - rmse: 0.5539 - mae: 0.3584 - mape: 11.4785
Epoch 35: val_loss did not improve from 0.30600
318/318 [==============================] - 1s 3ms/step - loss: 0.3147 - mse: 0.3147 - rmse: 0.5610 - mae: 0.3613 - mape: 11.5632 - val_loss: 0.5891 - val_mse: 0.5891 - val_rmse: 0.7675 - val_mae: 0.5755 - val_mape: 19.9539 - lr: 0.0010
Epoch 36/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.3398 - mse: 0.3398 - rmse: 0.5829 - mae: 0.3927 - mape: 12.8145
Epoch 36: val_loss did not improve from 0.30600
318/318 [==============================] - 1s 3ms/step - loss: 0.3371 - mse: 0.3371 - rmse: 0.5806 - mae: 0.3910 - mape: 12.7562 - val_loss: 0.3706 - val_mse: 0.3706 - val_rmse: 0.6088 - val_mae: 0.4018 - val_mape: 12.6282 - lr: 0.0010
Epoch 37/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.3329 - mse: 0.3329 - rmse: 0.5770 - mae: 0.3740 - mape: 12.0965
Epoch 37: val_loss improved from 0.30600 to 0.29921, saving model to model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.3322 - mse: 0.3322 - rmse: 0.5764 - mae: 0.3742 - mape: 12.1246 - val_loss: 0.2992 - val_mse: 0.2992 - val_rmse: 0.5470 - val_mae: 0.3230 - val_mape: 9.5858 - lr: 0.0010
Epoch 38/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.2943 - mse: 0.2943

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- rmse: 0.5425 - mae: 0.3425 - mape: 10.9076
Epoch 38: val_loss did not improve from 0.29921
318/318 [==============================] - 1s 3ms/step - loss: 0.3016 - mse:
0.3016 - rmse: 0.5492 - mae: 0.3471 - mape: 11.0858 - val_loss: 0.5120 -
val_mse: 0.5120 - val_rmse: 0.7155 - val_mae: 0.5149 - val_mape: 16.7127 - lr:
0.0010
Epoch 39/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.3099 - mse: 0.3099
- rmse: 0.5567 - mae: 0.3555 - mape: 11.4113
Epoch 39: val_loss improved from 0.29921 to 0.27169, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.3094 - mse:
0.3094 - rmse: 0.5563 - mae: 0.3556 - mape: 11.4048 - val_loss: 0.2717 -
val_mse: 0.2717 - val_rmse: 0.5212 - val_mae: 0.3394 - val_mape: 10.8840 - lr:
0.0010
Epoch 40/2000
307/318 [============================>..] - ETA: 0s - loss: 0.2828 - mse: 0.2828
- rmse: 0.5318 - mae: 0.3333 - mape: 10.5663
Epoch 40: val_loss did not improve from 0.27169
318/318 [==============================] - 1s 3ms/step - loss: 0.2826 - mse:
0.2826 - rmse: 0.5316 - mae: 0.3337 - mape: 10.5846 - val_loss: 0.3522 -
val_mse: 0.3522 - val_rmse: 0.5935 - val_mae: 0.4067 - val_mape: 13.5761 - lr:
0.0010
Epoch 41/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.3062 - mse: 0.3062
- rmse: 0.5533 - mae: 0.3484 - mape: 11.1573
Epoch 41: val_loss did not improve from 0.27169
318/318 [==============================] - 1s 3ms/step - loss: 0.3058 - mse:
0.3058 - rmse: 0.5530 - mae: 0.3481 - mape: 11.1474 - val_loss: 0.2740 -
val_mse: 0.2740 - val_rmse: 0.5235 - val_mae: 0.3063 - val_mape: 9.0954 - lr:
0.0010
Epoch 42/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.2872 - mse: 0.2872
- rmse: 0.5359 - mae: 0.3364 - mape: 10.6790
Epoch 42: val_loss improved from 0.27169 to 0.26767, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2880 - mse:
0.2880 - rmse: 0.5366 - mae: 0.3374 - mape: 10.7255 - val_loss: 0.2677 -
val_mse: 0.2677 - val_rmse: 0.5174 - val_mae: 0.3165 - val_mape: 9.6303 - lr:
0.0010
Epoch 43/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.2933 - mse: 0.2933
- rmse: 0.5416 - mae: 0.3373 - mape: 10.7367
Epoch 43: val_loss did not improve from 0.26767
318/318 [==============================] - 1s 3ms/step - loss: 0.2945 - mse:
0.2945 - rmse: 0.5427 - mae: 0.3375 - mape: 10.7519 - val_loss: 0.2717 -
val_mse: 0.2717 - val_rmse: 0.5212 - val_mae: 0.3282 - val_mape: 10.3028 - lr:
0.0010
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Epoch 44/2000
314/318 [==============================>.] - ETA: 0s - loss: 0.3063 - mse: 0.3063
- rmse: 0.5534 - mae: 0.3420 - mape: 10.9284
Epoch 44: val_loss improved from 0.26767 to 0.25408, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.3054 - mse:
0.3054 - rmse: 0.5526 - mae: 0.3415 - mape: 10.9053 - val_loss: 0.2541 -
val_mse: 0.2541 - val_rmse: 0.5041 - val_mae: 0.3168 - val_mape: 10.3179 - lr:
0.0010
Epoch 45/2000
318/318 [==============================] - ETA: 0s - loss: 0.2731 - mse: 0.2731
- rmse: 0.5226 - mae: 0.3255 - mape: 10.3505
Epoch 45: val_loss did not improve from 0.25408
318/318 [==============================] - 1s 3ms/step - loss: 0.2731 - mse:
0.2731 - rmse: 0.5226 - mae: 0.3255 - mape: 10.3505 - val_loss: 0.2831 -
val_mse: 0.2831 - val_rmse: 0.5321 - val_mae: 0.3129 - val_mape: 9.1939 - lr:
0.0010
Epoch 46/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.3141 - mse: 0.3141
- rmse: 0.5604 - mae: 0.3516 - mape: 11.3241
Epoch 46: val_loss did not improve from 0.25408
318/318 [==============================] - 1s 3ms/step - loss: 0.3132 - mse:
0.3132 - rmse: 0.5597 - mae: 0.3510 - mape: 11.2991 - val_loss: 0.2549 -
val_mse: 0.2549 - val_rmse: 0.5049 - val_mae: 0.3095 - val_mape: 9.4486 - lr:
0.0010
Epoch 47/2000
307/318 [============================>..] - ETA: 0s - loss: 0.2775 - mse: 0.2775
- rmse: 0.5268 - mae: 0.3280 - mape: 10.3913
Epoch 47: val_loss improved from 0.25408 to 0.22755, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2761 - mse:
0.2761 - rmse: 0.5255 - mae: 0.3271 - mape: 10.3688 - val_loss: 0.2276 -
val_mse: 0.2276 - val_rmse: 0.4770 - val_mae: 0.2854 - val_mape: 8.7867 - lr:
0.0010
Epoch 48/2000
296/318 [==========================>...] - ETA: 0s - loss: 0.2833 - mse: 0.2833
- rmse: 0.5323 - mae: 0.3301 - mape: 10.4707
Epoch 48: val_loss did not improve from 0.22755
318/318 [==============================] - 1s 3ms/step - loss: 0.2813 - mse:
0.2813 - rmse: 0.5304 - mae: 0.3285 - mape: 10.4206 - val_loss: 0.3653 -
val_mse: 0.3653 - val_rmse: 0.6044 - val_mae: 0.3310 - val_mape: 9.3714 - lr:
0.0010
Epoch 49/2000
295/318 [==========================>...] - ETA: 0s - loss: 0.2600 - mse: 0.2600
- rmse: 0.5099 - mae: 0.3136 - mape: 9.9321
Epoch 49: val_loss did not improve from 0.22755
318/318 [==============================] - 1s 3ms/step - loss: 0.2597 - mse:
0.2597 - rmse: 0.5096 - mae: 0.3134 - mape: 9.9240 - val_loss: 0.2460 - val_mse:
```

0.2460 - val_rmse: 0.4960 - val_mae: 0.3038 - val_mape: 9.4105 - lr: 0.0010
Epoch 50/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.2730 - mse: 0.2730
- rmse: 0.5225 - mae: 0.3225 - mape: 10.2380
Epoch 50: val_loss did not improve from 0.22755
318/318 [==============================] - 1s 3ms/step - loss: 0.2737 - mse:
0.2737 - rmse: 0.5232 - mae: 0.3230 - mape: 10.2723 - val_loss: 0.2707 -
val_mse: 0.2707 - val_rmse: 0.5203 - val_mae: 0.3348 - val_mape: 10.5362 - lr:
0.0010
Epoch 51/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.2648 - mse: 0.2648
- rmse: 0.5146 - mae: 0.3175 - mape: 10.0140
Epoch 51: val_loss did not improve from 0.22755
318/318 [==============================] - 1s 3ms/step - loss: 0.2610 - mse:
0.2610 - rmse: 0.5108 - mae: 0.3155 - mape: 9.9816 - val_loss: 0.2692 - val_mse:
0.2692 - val_rmse: 0.5188 - val_mae: 0.3649 - val_mape: 12.1459 - lr: 0.0010
Epoch 52/2000
316/318 [===========================>.] - ETA: 0s - loss: 0.2523 - mse: 0.2523
- rmse: 0.5023 - mae: 0.3104 - mape: 9.8299
Epoch 52: val_loss did not improve from 0.22755
318/318 [==============================] - 1s 3ms/step - loss: 0.2525 - mse:
0.2525 - rmse: 0.5025 - mae: 0.3104 - mape: 9.8272 - val_loss: 0.2394 - val_mse:
0.2394 - val_rmse: 0.4893 - val_mae: 0.2826 - val_mape: 8.4206 - lr: 0.0010
Epoch 53/2000
308/318 [===========================>.] - ETA: 0s - loss: 0.2496 - mse: 0.2496
- rmse: 0.4996 - mae: 0.3036 - mape: 9.6012
Epoch 53: val_loss did not improve from 0.22755
318/318 [==============================] - 1s 3ms/step - loss: 0.2506 - mse:
0.2506 - rmse: 0.5006 - mae: 0.3041 - mape: 9.6087 - val_loss: 0.2390 - val_mse:
0.2390 - val_rmse: 0.4889 - val_mae: 0.2995 - val_mape: 9.6063 - lr: 0.0010
Epoch 54/2000
297/318 [==========================>..] - ETA: 0s - loss: 0.2983 - mse: 0.2983
- rmse: 0.5462 - mae: 0.3395 - mape: 10.9222
Epoch 54: val_loss did not improve from 0.22755
318/318 [==============================] - 1s 3ms/step - loss: 0.2995 - mse:
0.2995 - rmse: 0.5473 - mae: 0.3407 - mape: 10.9428 - val_loss: 0.2484 -
val_mse: 0.2484 - val_rmse: 0.4984 - val_mae: 0.3148 - val_mape: 10.0927 - lr:
0.0010
Epoch 55/2000
314/318 [==========================>.] - ETA: 0s - loss: 0.2558 - mse: 0.2558
- rmse: 0.5058 - mae: 0.3084 - mape: 9.7422
Epoch 55: val_loss did not improve from 0.22755
318/318 [==============================] - 1s 3ms/step - loss: 0.2564 - mse:
0.2564 - rmse: 0.5064 - mae: 0.3092 - mape: 9.7782 - val_loss: 0.3374 - val_mse:
0.3374 - val_rmse: 0.5808 - val_mae: 0.3484 - val_mape: 10.3511 - lr: 0.0010
Epoch 56/2000
308/318 [===========================>.] - ETA: 0s - loss: 0.2627 - mse: 0.2627
- rmse: 0.5125 - mae: 0.3182 - mape: 10.1268

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Epoch 56: val_loss did not improve from 0.22755
318/318 [==============================] - 1s 3ms/step - loss: 0.2639 - mse:
0.2639 - rmse: 0.5137 - mae: 0.3182 - mape: 10.1181 - val_loss: 0.2812 -
val_mse: 0.2812 - val_rmse: 0.5302 - val_mae: 0.3524 - val_mape: 12.0181 - lr:
0.0010
Epoch 57/2000
292/318 [==========================>…] - ETA: 0s - loss: 0.2695 - mse: 0.2695
- rmse: 0.5191 - mae: 0.3191 - mape: 10.1858
Epoch 57: val_loss did not improve from 0.22755
318/318 [==============================] - 1s 3ms/step - loss: 0.2722 - mse:
0.2722 - rmse: 0.5218 - mae: 0.3206 - mape: 10.2142 - val_loss: 0.2728 -
val_mse: 0.2728 - val_rmse: 0.5223 - val_mae: 0.3376 - val_mape: 10.9254 - lr:
0.0010
Epoch 58/2000
289/318 [==========================>…] - ETA: 0s - loss: 0.2686 - mse: 0.2686
- rmse: 0.5182 - mae: 0.3208 - mape: 10.1811
Epoch 58: val_loss improved from 0.22755 to 0.22728, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2670 - mse:
0.2670 - rmse: 0.5167 - mae: 0.3192 - mape: 10.1210 - val_loss: 0.2273 -
val_mse: 0.2273 - val_rmse: 0.4767 - val_mae: 0.2812 - val_mape: 8.5166 - lr:
0.0010
Epoch 59/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.2532 - mse: 0.2532
- rmse: 0.5032 - mae: 0.3078 - mape: 9.7003
Epoch 59: val_loss did not improve from 0.22728
318/318 [==============================] - 1s 3ms/step - loss: 0.2547 - mse:
0.2547 - rmse: 0.5047 - mae: 0.3094 - mape: 9.7787 - val_loss: 0.2813 - val_mse:
0.2813 - val_rmse: 0.5304 - val_mae: 0.3174 - val_mape: 9.4251 - lr: 0.0010
Epoch 60/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.2588 - mse: 0.2588
- rmse: 0.5088 - mae: 0.3130 - mape: 9.9102
Epoch 60: val_loss did not improve from 0.22728
318/318 [==============================] - 1s 3ms/step - loss: 0.2561 - mse:
0.2561 - rmse: 0.5061 - mae: 0.3111 - mape: 9.8480 - val_loss: 0.3249 - val_mse:
0.3249 - val_rmse: 0.5700 - val_mae: 0.3257 - val_mape: 9.4314 - lr: 0.0010
Epoch 61/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.2692 - mse: 0.2692
- rmse: 0.5189 - mae: 0.3170 - mape: 10.0828
Epoch 61: val_loss did not improve from 0.22728
318/318 [==============================] - 1s 3ms/step - loss: 0.2681 - mse:
0.2681 - rmse: 0.5178 - mae: 0.3172 - mape: 10.0945 - val_loss: 0.2560 -
val_mse: 0.2560 - val_rmse: 0.5060 - val_mae: 0.3490 - val_mape: 11.7168 - lr:
0.0010
Epoch 62/2000
308/318 [===========================>.] - ETA: 0s - loss: 0.2497 - mse: 0.2497
- rmse: 0.4997 - mae: 0.3071 - mape: 9.7355
Epoch 62: val_loss did not improve from 0.22728
```

318/318 [==============================] - 1s 3ms/step - loss: 0.2504 - mse: 0.2504 - rmse: 0.5004 - mae: 0.3078 - mape: 9.7541 - val_loss: 0.2456 - val_mse: 0.2456 - val_rmse: 0.4956 - val_mae: 0.3436 - val_mape: 11.5003 - lr: 0.0010
Epoch 63/2000
288/318 [==========================>…] - ETA: 0s - loss: 0.2624 - mse: 0.2624 - rmse: 0.5122 - mae: 0.3170 - mape: 10.1164
Epoch 63: val_loss did not improve from 0.22728
318/318 [==============================] - 1s 3ms/step - loss: 0.2627 - mse: 0.2627 - rmse: 0.5125 - mae: 0.3153 - mape: 10.0399 - val_loss: 0.2278 - val_mse: 0.2278 - val_rmse: 0.4773 - val_mae: 0.2788 - val_mape: 8.4763 - lr: 0.0010
Epoch 64/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.2502 - mse: 0.2502 - rmse: 0.5002 - mae: 0.3096 - mape: 9.8649
Epoch 64: val_loss did not improve from 0.22728
318/318 [==============================] - 1s 3ms/step - loss: 0.2492 - mse: 0.2492 - rmse: 0.4992 - mae: 0.3083 - mape: 9.8286 - val_loss: 0.2674 - val_mse: 0.2674 - val_rmse: 0.5171 - val_mae: 0.3061 - val_mape: 9.2701 - lr: 0.0010
Epoch 65/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.2720 - mse: 0.2720 - rmse: 0.5216 - mae: 0.3258 - mape: 10.4131
Epoch 65: val_loss did not improve from 0.22728
318/318 [==============================] - 1s 3ms/step - loss: 0.2689 - mse: 0.2689 - rmse: 0.5186 - mae: 0.3237 - mape: 10.3586 - val_loss: 0.2452 - val_mse: 0.2452 - val_rmse: 0.4952 - val_mae: 0.2848 - val_mape: 8.5856 - lr: 0.0010
Epoch 66/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.2499 - mse: 0.2499 - rmse: 0.4999 - mae: 0.3040 - mape: 9.5775
Epoch 66: val_loss did not improve from 0.22728
318/318 [==============================] - 1s 3ms/step - loss: 0.2478 - mse: 0.2478 - rmse: 0.4978 - mae: 0.3028 - mape: 9.5299 - val_loss: 0.2339 - val_mse: 0.2339 - val_rmse: 0.4836 - val_mae: 0.3039 - val_mape: 9.7481 - lr: 0.0010
Epoch 67/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.2518 - mse: 0.2518 - rmse: 0.5018 - mae: 0.3095 - mape: 9.8101
Epoch 67: val_loss improved from 0.22728 to 0.22447, saving model to model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2494 - mse: 0.2494 - rmse: 0.4994 - mae: 0.3081 - mape: 9.7681 - val_loss: 0.2245 - val_mse: 0.2245 - val_rmse: 0.4738 - val_mae: 0.2849 - val_mape: 8.8774 - lr: 0.0010
Epoch 68/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.2504 - mse: 0.2504 - rmse: 0.5004 - mae: 0.3061 - mape: 9.7311
Epoch 68: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2484 - mse: 0.2484 - rmse: 0.4984 - mae: 0.3056 - mape: 9.7113 - val_loss: 0.2976 - val_mse: 0.2976 - val_rmse: 0.5455 - val_mae: 0.3492 - val_mape: 10.6259 - lr: 0.0010

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Epoch 69/2000
292/318 [==========================>…] - ETA: 0s - loss: 0.2496 - mse: 0.2496
- rmse: 0.4996 - mae: 0.3068 - mape: 9.7409
Epoch 69: val_loss did not improve from 0.22447
318/318 [=============================] - 1s 3ms/step - loss: 0.2565 - mse:
0.2565 - rmse: 0.5064 - mae: 0.3109 - mape: 9.8862 - val_loss: 0.3650 - val_mse:
0.3650 - val_rmse: 0.6041 - val_mae: 0.3702 - val_mape: 11.2626 - lr: 0.0010
Epoch 70/2000
310/318 [============================>.] - ETA: 0s - loss: 0.2472 - mse: 0.2472
- rmse: 0.4972 - mae: 0.3031 - mape: 9.5845
Epoch 70: val_loss did not improve from 0.22447
318/318 [=============================] - 1s 3ms/step - loss: 0.2471 - mse:
0.2471 - rmse: 0.4971 - mae: 0.3028 - mape: 9.5611 - val_loss: 0.2328 - val_mse:
0.2328 - val_rmse: 0.4825 - val_mae: 0.3075 - val_mape: 10.1326 - lr: 0.0010
Epoch 71/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.2533 - mse: 0.2533
- rmse: 0.5033 - mae: 0.3092 - mape: 9.8346
Epoch 71: val_loss did not improve from 0.22447
318/318 [=============================] - 1s 3ms/step - loss: 0.2516 - mse:
0.2516 - rmse: 0.5016 - mae: 0.3085 - mape: 9.8124 - val_loss: 0.2555 - val_mse:
0.2555 - val_rmse: 0.5054 - val_mae: 0.2966 - val_mape: 8.9664 - lr: 0.0010
Epoch 72/2000
292/318 [==========================>…] - ETA: 0s - loss: 0.2490 - mse: 0.2490
- rmse: 0.4990 - mae: 0.3036 - mape: 9.5774
Epoch 72: val_loss did not improve from 0.22447
318/318 [=============================] - 1s 3ms/step - loss: 0.2485 - mse:
0.2485 - rmse: 0.4985 - mae: 0.3045 - mape: 9.6199 - val_loss: 0.4254 - val_mse:
0.4254 - val_rmse: 0.6522 - val_mae: 0.4090 - val_mape: 14.2943 - lr: 0.0010
Epoch 73/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.2571 - mse: 0.2571
- rmse: 0.5070 - mae: 0.3154 - mape: 10.0278
Epoch 73: val_loss did not improve from 0.22447
318/318 [=============================] - 1s 3ms/step - loss: 0.2555 - mse:
0.2555 - rmse: 0.5055 - mae: 0.3135 - mape: 9.9637 - val_loss: 0.5291 - val_mse:
0.5291 - val_rmse: 0.7274 - val_mae: 0.4107 - val_mape: 11.6730 - lr: 0.0010
Epoch 74/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.2637 - mse: 0.2637
- rmse: 0.5135 - mae: 0.3149 - mape: 10.0159
Epoch 74: val_loss did not improve from 0.22447
318/318 [=============================] - 1s 3ms/step - loss: 0.2635 - mse:
0.2635 - rmse: 0.5133 - mae: 0.3150 - mape: 10.0221 - val_loss: 0.2332 -
val_mse: 0.2332 - val_rmse: 0.4829 - val_mae: 0.2995 - val_mape: 9.6170 - lr:
0.0010
Epoch 75/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.2428 - mse: 0.2428
- rmse: 0.4928 - mae: 0.3008 - mape: 9.4905
Epoch 75: val_loss did not improve from 0.22447
318/318 [=============================] - 1s 3ms/step - loss: 0.2437 - mse:
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0.2437 - rmse: 0.4937 - mae: 0.3008 - mape: 9.4926 - val_loss: 0.2407 - val_mse: 0.2407 - val_rmse: 0.4906 - val_mae: 0.2880 - val_mape: 8.6920 - lr: 0.0010
Epoch 76/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.2667 - mse: 0.2667 - rmse: 0.5164 - mae: 0.3203 - mape: 10.2333
Epoch 76: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2666 - mse: 0.2666 - rmse: 0.5164 - mae: 0.3210 - mape: 10.2439 - val_loss: 0.2630 - val_mse: 0.2630 - val_rmse: 0.5129 - val_mae: 0.3108 - val_mape: 9.5691 - lr: 0.0010
Epoch 77/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.2789 - mse: 0.2789 - rmse: 0.5281 - mae: 0.3303 - mape: 10.4975
Epoch 77: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2778 - mse: 0.2778 - rmse: 0.5271 - mae: 0.3297 - mape: 10.4605 - val_loss: 0.3308 - val_mse: 0.3308 - val_rmse: 0.5752 - val_mae: 0.3584 - val_mape: 12.0830 - lr: 0.0010
Epoch 78/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.2555 - mse: 0.2555 - rmse: 0.5055 - mae: 0.3132 - mape: 9.9278
Epoch 78: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2572 - mse: 0.2572 - rmse: 0.5072 - mae: 0.3138 - mape: 9.9412 - val_loss: 0.3253 - val_mse: 0.3253 - val_rmse: 0.5703 - val_mae: 0.3525 - val_mape: 11.8714 - lr: 0.0010
Epoch 79/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.2662 - mse: 0.2662 - rmse: 0.5159 - mae: 0.3204 - mape: 10.1704
Epoch 79: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2666 - mse: 0.2666 - rmse: 0.5164 - mae: 0.3206 - mape: 10.1878 - val_loss: 0.2485 - val_mse: 0.2485 - val_rmse: 0.4985 - val_mae: 0.3040 - val_mape: 9.5452 - lr: 0.0010
Epoch 80/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.2646 - mse: 0.2646 - rmse: 0.5144 - mae: 0.3197 - mape: 10.1205
Epoch 80: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2640 - mse: 0.2640 - rmse: 0.5138 - mae: 0.3198 - mape: 10.1179 - val_loss: 0.2391 - val_mse: 0.2391 - val_rmse: 0.4889 - val_mae: 0.3075 - val_mape: 9.9393 - lr: 0.0010
Epoch 81/2000
316/318 [============================>.] - ETA: 0s - loss: 0.2722 - mse: 0.2722 - rmse: 0.5217 - mae: 0.3248 - mape: 10.2629
Epoch 81: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2718 - mse: 0.2718 - rmse: 0.5214 - mae: 0.3247 - mape: 10.2646 - val_loss: 0.2259 - val_mse: 0.2259 - val_rmse: 0.4752 - val_mae: 0.2826 - val_mape: 8.6343 - lr:

```
0.0010
Epoch 82/2000
307/318 [============================>..] - ETA: 0s - loss: 0.2494 - mse: 0.2494
- rmse: 0.4994 - mae: 0.3088 - mape: 9.7374
Epoch 82: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2511 - mse:
0.2511 - rmse: 0.5011 - mae: 0.3098 - mape: 9.7634 - val_loss: 0.2728 - val_mse:
0.2728 - val_rmse: 0.5223 - val_mae: 0.3557 - val_mape: 11.4043 - lr: 0.0010
Epoch 83/2000
294/318 [===========================>…] - ETA: 0s - loss: 0.2448 - mse: 0.2448
- rmse: 0.4948 - mae: 0.3054 - mape: 9.6503
Epoch 83: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2435 - mse:
0.2435 - rmse: 0.4935 - mae: 0.3043 - mape: 9.6072 - val_loss: 0.2900 - val_mse:
0.2900 - val_rmse: 0.5385 - val_mae: 0.3286 - val_mape: 10.0155 - lr: 0.0010
Epoch 84/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.2541 - mse: 0.2541
- rmse: 0.5041 - mae: 0.3110 - mape: 9.8311
Epoch 84: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2532 - mse:
0.2532 - rmse: 0.5032 - mae: 0.3104 - mape: 9.8347 - val_loss: 0.2299 - val_mse:
0.2299 - val_rmse: 0.4794 - val_mae: 0.2762 - val_mape: 8.3866 - lr: 0.0010
Epoch 85/2000
313/318 [============================>.] - ETA: 0s - loss: 0.2554 - mse: 0.2554
- rmse: 0.5054 - mae: 0.3177 - mape: 10.1818
Epoch 85: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2555 - mse:
0.2555 - rmse: 0.5055 - mae: 0.3177 - mape: 10.1745 - val_loss: 0.2245 -
val_mse: 0.2245 - val_rmse: 0.4738 - val_mae: 0.2864 - val_mape: 8.9310 - lr:
0.0010
Epoch 86/2000
288/318 [==========================>…] - ETA: 0s - loss: 0.2419 - mse: 0.2419
- rmse: 0.4918 - mae: 0.3012 - mape: 9.5237
Epoch 86: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2439 - mse:
0.2439 - rmse: 0.4939 - mae: 0.3029 - mape: 9.5945 - val_loss: 0.2346 - val_mse:
0.2346 - val_rmse: 0.4844 - val_mae: 0.3178 - val_mape: 10.1711 - lr: 0.0010
Epoch 87/2000
315/318 [============================>.] - ETA: 0s - loss: 0.2471 - mse: 0.2471
- rmse: 0.4971 - mae: 0.3064 - mape: 9.7115
Epoch 87: val_loss did not improve from 0.22447
318/318 [==============================] - 1s 3ms/step - loss: 0.2475 - mse:
0.2475 - rmse: 0.4975 - mae: 0.3066 - mape: 9.7221 - val_loss: 0.2479 - val_mse:
0.2479 - val_rmse: 0.4979 - val_mae: 0.3435 - val_mape: 11.6029 - lr: 0.0010
Epoch 88/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.2569 - mse: 0.2569
- rmse: 0.5068 - mae: 0.3128 - mape: 9.9734
Epoch 88: val_loss did not improve from 0.22447
```

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318/318 [==============================] - 1s 3ms/step - loss: 0.2553 - mse:
0.2553 - rmse: 0.5053 - mae: 0.3117 - mape: 9.9344 - val_loss: 0.2755 - val_mse:
0.2755 - val_rmse: 0.5249 - val_mae: 0.3074 - val_mape: 9.2149 - lr: 0.0010
Epoch 89/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.2413 - mse: 0.2413
- rmse: 0.4912 - mae: 0.3030 - mape: 9.6471
Epoch 89: val_loss improved from 0.22447 to 0.22038, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2436 - mse:
0.2436 - rmse: 0.4935 - mae: 0.3032 - mape: 9.6493 - val_loss: 0.2204 - val_mse:
0.2204 - val_rmse: 0.4694 - val_mae: 0.2753 - val_mape: 8.6162 - lr: 0.0010
Epoch 90/2000
288/318 [==========================>…] - ETA: 0s - loss: 0.2363 - mse: 0.2363
- rmse: 0.4861 - mae: 0.2942 - mape: 9.2601
Epoch 90: val_loss did not improve from 0.22038
318/318 [==============================] - 1s 3ms/step - loss: 0.2344 - mse:
0.2344 - rmse: 0.4842 - mae: 0.2920 - mape: 9.1919 - val_loss: 0.2275 - val_mse:
0.2275 - val_rmse: 0.4770 - val_mae: 0.2851 - val_mape: 8.9622 - lr: 0.0010
Epoch 91/2000
297/318 [============================>..] - ETA: 0s - loss: 0.2664 - mse: 0.2664
- rmse: 0.5162 - mae: 0.3245 - mape: 10.3511
Epoch 91: val_loss did not improve from 0.22038
318/318 [==============================] - 1s 3ms/step - loss: 0.2695 - mse:
0.2695 - rmse: 0.5191 - mae: 0.3250 - mape: 10.3543 - val_loss: 0.3770 -
val_mse: 0.3770 - val_rmse: 0.6140 - val_mae: 0.4014 - val_mape: 13.6006 - lr:
0.0010
Epoch 92/2000
290/318 [===========================>…] - ETA: 0s - loss: 0.2515 - mse: 0.2515
- rmse: 0.5015 - mae: 0.3133 - mape: 9.9766
Epoch 92: val_loss improved from 0.22038 to 0.21614, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2512 - mse:
0.2512 - rmse: 0.5012 - mae: 0.3120 - mape: 9.9120 - val_loss: 0.2161 - val_mse:
0.2161 - val_rmse: 0.4649 - val_mae: 0.2742 - val_mape: 8.5421 - lr: 0.0010
Epoch 93/2000
313/318 [============================>.] - ETA: 0s - loss: 0.2407 - mse: 0.2407
- rmse: 0.4907 - mae: 0.2966 - mape: 9.3405
Epoch 93: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2404 - mse:
0.2404 - rmse: 0.4903 - mae: 0.2965 - mape: 9.3329 - val_loss: 0.2435 - val_mse:
0.2435 - val_rmse: 0.4935 - val_mae: 0.2983 - val_mape: 9.2151 - lr: 0.0010
Epoch 94/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.2428 - mse: 0.2428
- rmse: 0.4928 - mae: 0.3013 - mape: 9.5008
Epoch 94: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2416 - mse:
0.2416 - rmse: 0.4916 - mae: 0.3009 - mape: 9.5035 - val_loss: 0.2477 - val_mse:
0.2477 - val_rmse: 0.4977 - val_mae: 0.3090 - val_mape: 10.1396 - lr: 0.0010
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Epoch 95/2000
292/318 [==========================>…] - ETA: 0s - loss: 0.2356 - mse: 0.2356
- rmse: 0.4854 - mae: 0.2972 - mape: 9.4138
Epoch 95: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2351 - mse:
0.2351 - rmse: 0.4848 - mae: 0.2970 - mape: 9.4040 - val_loss: 0.2500 - val_mse:
0.2500 - val_rmse: 0.5000 - val_mae: 0.2860 - val_mape: 8.5282 - lr: 0.0010
Epoch 96/2000
309/318 [=============================>.] - ETA: 0s - loss: 0.2381 - mse: 0.2381
- rmse: 0.4879 - mae: 0.2975 - mape: 9.4278
Epoch 96: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2394 - mse:
0.2394 - rmse: 0.4893 - mae: 0.2992 - mape: 9.4893 - val_loss: 0.2634 - val_mse:
0.2634 - val_rmse: 0.5132 - val_mae: 0.3356 - val_mape: 11.0944 - lr: 0.0010
Epoch 97/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.2375 - mse: 0.2375
- rmse: 0.4873 - mae: 0.2988 - mape: 9.4758
Epoch 97: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2370 - mse:
0.2370 - rmse: 0.4868 - mae: 0.2982 - mape: 9.4410 - val_loss: 0.2169 - val_mse:
0.2169 - val_rmse: 0.4657 - val_mae: 0.2776 - val_mape: 8.7655 - lr: 0.0010
Epoch 98/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.2316 - mse: 0.2316
- rmse: 0.4812 - mae: 0.2948 - mape: 9.3401
Epoch 98: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2328 - mse:
0.2328 - rmse: 0.4825 - mae: 0.2944 - mape: 9.3167 - val_loss: 0.2273 - val_mse:
0.2273 - val_rmse: 0.4768 - val_mae: 0.2918 - val_mape: 9.4105 - lr: 0.0010
Epoch 99/2000
290/318 [==========================>…] - ETA: 0s - loss: 0.2372 - mse: 0.2372
- rmse: 0.4870 - mae: 0.2983 - mape: 9.4849
Epoch 99: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2418 - mse:
0.2418 - rmse: 0.4917 - mae: 0.3020 - mape: 9.6011 - val_loss: 0.2319 - val_mse:
0.2319 - val_rmse: 0.4816 - val_mae: 0.2915 - val_mape: 9.3138 - lr: 0.0010
Epoch 100/2000
310/318 [=============================>.] - ETA: 0s - loss: 0.2340 - mse: 0.2340
- rmse: 0.4838 - mae: 0.2938 - mape: 9.2652
Epoch 100: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2328 - mse:
0.2328 - rmse: 0.4825 - mae: 0.2931 - mape: 9.2529 - val_loss: 0.2449 - val_mse:
0.2449 - val_rmse: 0.4949 - val_mae: 0.2786 - val_mape: 8.3089 - lr: 0.0010
Epoch 101/2000
310/318 [=============================>.] - ETA: 0s - loss: 0.2337 - mse: 0.2337
- rmse: 0.4834 - mae: 0.2940 - mape: 9.2765
Epoch 101: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2322 - mse:
0.2322 - rmse: 0.4819 - mae: 0.2929 - mape: 9.2384 - val_loss: 0.2335 - val_mse:
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0.2335 - val_rmse: 0.4832 - val_mae: 0.2886 - val_mape: 9.3154 - lr: 0.0010
Epoch 102/2000
296/318 [============================>…] - ETA: 0s - loss: 0.2299 - mse: 0.2299
- rmse: 0.4794 - mae: 0.2882 - mape: 9.0784
Epoch 102: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2311 - mse:
0.2311 - rmse: 0.4807 - mae: 0.2890 - mape: 9.0989 - val_loss: 0.4554 - val_mse:
0.4554 - val_rmse: 0.6748 - val_mae: 0.4213 - val_mape: 12.6359 - lr: 0.0010
Epoch 103/2000
317/318 [============================>.] - ETA: 0s - loss: 0.2510 - mse: 0.2510
- rmse: 0.5010 - mae: 0.3101 - mape: 9.9223
Epoch 103: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2508 - mse:
0.2508 - rmse: 0.5008 - mae: 0.3100 - mape: 9.9186 - val_loss: 0.2194 - val_mse:
0.2194 - val_rmse: 0.4684 - val_mae: 0.2752 - val_mape: 8.4674 - lr: 0.0010
Epoch 104/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.2298 - mse: 0.2298
- rmse: 0.4794 - mae: 0.2881 - mape: 9.0552
Epoch 104: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2285 - mse:
0.2285 - rmse: 0.4781 - mae: 0.2875 - mape: 9.0421 - val_loss: 0.2212 - val_mse:
0.2212 - val_rmse: 0.4703 - val_mae: 0.2747 - val_mape: 8.5138 - lr: 0.0010
Epoch 105/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.2375 - mse: 0.2375
- rmse: 0.4873 - mae: 0.2964 - mape: 9.3773
Epoch 105: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2371 - mse:
0.2371 - rmse: 0.4869 - mae: 0.2953 - mape: 9.3397 - val_loss: 0.3539 - val_mse:
0.3539 - val_rmse: 0.5949 - val_mae: 0.3597 - val_mape: 10.4942 - lr: 0.0010
Epoch 106/2000
292/318 [==========================>…] - ETA: 0s - loss: 0.2281 - mse: 0.2281
- rmse: 0.4776 - mae: 0.2881 - mape: 9.1181
Epoch 106: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2283 - mse:
0.2283 - rmse: 0.4778 - mae: 0.2879 - mape: 9.0866 - val_loss: 0.2191 - val_mse:
0.2191 - val_rmse: 0.4680 - val_mae: 0.2782 - val_mape: 8.6669 - lr: 0.0010
Epoch 107/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.2423 - mse: 0.2423
- rmse: 0.4922 - mae: 0.2967 - mape: 9.3711
Epoch 107: val_loss did not improve from 0.21614
318/318 [==============================] - 1s 3ms/step - loss: 0.2430 - mse:
0.2430 - rmse: 0.4930 - mae: 0.2971 - mape: 9.3738 - val_loss: 0.2180 - val_mse:
0.2180 - val_rmse: 0.4669 - val_mae: 0.2784 - val_mape: 8.8231 - lr: 0.0010
Epoch 108/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.2363 - mse: 0.2363
- rmse: 0.4861 - mae: 0.2920 - mape: 9.2047
Epoch 108: val_loss improved from 0.21614 to 0.21273, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5

318/318 [==============================] - 1s 3ms/step - loss: 0.2334 - mse: 0.2334 - rmse: 0.4831 - mae: 0.2903 - mape: 9.1457 - val_loss: 0.2127 - val_mse: 0.2127 - val_rmse: 0.4612 - val_mae: 0.2710 - val_mape: 8.4848 - lr: 0.0010
Epoch 109/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.2335 - mse: 0.2335 - rmse: 0.4832 - mae: 0.2921 - mape: 9.2723
Epoch 109: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2329 - mse: 0.2329 - rmse: 0.4826 - mae: 0.2918 - mape: 9.2558 - val_loss: 0.2242 - val_mse: 0.2242 - val_rmse: 0.4735 - val_mae: 0.2881 - val_mape: 9.2939 - lr: 0.0010
Epoch 110/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.2588 - mse: 0.2588 - rmse: 0.5087 - mae: 0.3135 - mape: 10.0590
Epoch 110: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2576 - mse: 0.2576 - rmse: 0.5075 - mae: 0.3128 - mape: 10.0383 - val_loss: 0.2320 - val_mse: 0.2320 - val_rmse: 0.4816 - val_mae: 0.2874 - val_mape: 8.9218 - lr: 0.0010
Epoch 111/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.2297 - mse: 0.2297 - rmse: 0.4793 - mae: 0.2880 - mape: 9.0385
Epoch 111: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2285 - mse: 0.2285 - rmse: 0.4780 - mae: 0.2875 - mape: 9.0187 - val_loss: 0.2230 - val_mse: 0.2230 - val_rmse: 0.4722 - val_mae: 0.3047 - val_mape: 9.9495 - lr: 0.0010
Epoch 112/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.2283 - mse: 0.2283 - rmse: 0.4778 - mae: 0.2855 - mape: 8.9612
Epoch 112: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2292 - mse: 0.2292 - rmse: 0.4788 - mae: 0.2861 - mape: 8.9846 - val_loss: 0.2292 - val_mse: 0.2292 - val_rmse: 0.4787 - val_mae: 0.2893 - val_mape: 9.2123 - lr: 0.0010
Epoch 113/2000
310/318 [============================>.] - ETA: 0s - loss: 0.2361 - mse: 0.2361 - rmse: 0.4859 - mae: 0.2963 - mape: 9.3684
Epoch 113: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2348 - mse: 0.2348 - rmse: 0.4845 - mae: 0.2953 - mape: 9.3375 - val_loss: 0.2190 - val_mse: 0.2190 - val_rmse: 0.4680 - val_mae: 0.2673 - val_mape: 8.2636 - lr: 0.0010
Epoch 114/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.2357 - mse: 0.2357 - rmse: 0.4855 - mae: 0.2961 - mape: 9.4493
Epoch 114: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2365 - mse: 0.2365 - rmse: 0.4863 - mae: 0.2974 - mape: 9.4774 - val_loss: 0.2253 - val_mse: 0.2253 - val_rmse: 0.4746 - val_mae: 0.2783 - val_mape: 8.5811 - lr: 0.0010
Epoch 115/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.2296 - mse: 0.2296

- rmse: 0.4791 - mae: 0.2869 - mape: 9.0579
Epoch 115: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2293 - mse:
0.2293 - rmse: 0.4788 - mae: 0.2869 - mape: 9.0596 - val_loss: 0.2272 - val_mse:
0.2272 - val_rmse: 0.4766 - val_mae: 0.2819 - val_mape: 8.5975 - lr: 0.0010
Epoch 116/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.2273 - mse: 0.2273
- rmse: 0.4767 - mae: 0.2844 - mape: 8.9405
Epoch 116: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2288 - mse:
0.2288 - rmse: 0.4783 - mae: 0.2854 - mape: 8.9749 - val_loss: 0.2241 - val_mse:
0.2241 - val_rmse: 0.4734 - val_mae: 0.2844 - val_mape: 9.2512 - lr: 0.0010
Epoch 117/2000
300/318 [============================>..] - ETA: 0s - loss: 0.2367 - mse: 0.2367
- rmse: 0.4865 - mae: 0.2913 - mape: 9.2161
Epoch 117: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2357 - mse:
0.2357 - rmse: 0.4855 - mae: 0.2905 - mape: 9.1860 - val_loss: 0.2226 - val_mse:
0.2226 - val_rmse: 0.4718 - val_mae: 0.2779 - val_mape: 8.6337 - lr: 0.0010
Epoch 118/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.2393 - mse: 0.2393
- rmse: 0.4892 - mae: 0.2938 - mape: 9.2526
Epoch 118: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2377 - mse:
0.2377 - rmse: 0.4875 - mae: 0.2937 - mape: 9.2865 - val_loss: 0.2259 - val_mse:
0.2259 - val_rmse: 0.4753 - val_mae: 0.2910 - val_mape: 9.2729 - lr: 0.0010
Epoch 119/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.2354 - mse: 0.2354
- rmse: 0.4852 - mae: 0.2911 - mape: 9.1678
Epoch 119: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2333 - mse:
0.2333 - rmse: 0.4830 - mae: 0.2900 - mape: 9.1444 - val_loss: 0.2173 - val_mse:
0.2173 - val_rmse: 0.4662 - val_mae: 0.2756 - val_mape: 8.6356 - lr: 0.0010
Epoch 120/2000
308/318 [============================>.] - ETA: 0s - loss: 0.2312 - mse: 0.2312
- rmse: 0.4808 - mae: 0.2852 - mape: 8.9695
Epoch 120: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2314 - mse:
0.2314 - rmse: 0.4810 - mae: 0.2852 - mape: 8.9662 - val_loss: 0.2272 - val_mse:
0.2272 - val_rmse: 0.4767 - val_mae: 0.2793 - val_mape: 9.0185 - lr: 0.0010
Epoch 121/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.2277 - mse: 0.2277
- rmse: 0.4772 - mae: 0.2846 - mape: 8.9559
Epoch 121: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2272 - mse:
0.2272 - rmse: 0.4766 - mae: 0.2839 - mape: 8.9282 - val_loss: 0.2243 - val_mse:
0.2243 - val_rmse: 0.4736 - val_mae: 0.2749 - val_mape: 8.7161 - lr: 0.0010
Epoch 122/2000

308/318 [============================>.] - ETA: 0s - loss: 0.2263 - mse: 0.2263
- rmse: 0.4757 - mae: 0.2827 - mape: 8.8921
Epoch 122: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2268 - mse:
0.2268 - rmse: 0.4763 - mae: 0.2831 - mape: 8.9068 - val_loss: 0.2138 - val_mse:
0.2138 - val_rmse: 0.4624 - val_mae: 0.2675 - val_mape: 8.3111 - lr: 0.0010
Epoch 123/2000
318/318 [==============================] - ETA: 0s - loss: 0.2267 - mse: 0.2267
- rmse: 0.4761 - mae: 0.2827 - mape: 8.8814
Epoch 123: val_loss did not improve from 0.21273
318/318 [==============================] - 1s 3ms/step - loss: 0.2267 - mse:
0.2267 - rmse: 0.4761 - mae: 0.2827 - mape: 8.8814 - val_loss: 0.2254 - val_mse:
0.2254 - val_rmse: 0.4747 - val_mae: 0.2820 - val_mape: 8.7955 - lr: 0.0010
Epoch 124/2000
310/318 [============================>.] - ETA: 0s - loss: 0.2344 - mse: 0.2344
- rmse: 0.4841 - mae: 0.2893 - mape: 9.1321
Epoch 124: val_loss improved from 0.21273 to 0.21155, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2342 - mse:
0.2342 - rmse: 0.4840 - mae: 0.2889 - mape: 9.1029 - val_loss: 0.2115 - val_mse:
0.2115 - val_rmse: 0.4599 - val_mae: 0.2719 - val_mape: 8.6545 - lr: 0.0010
Epoch 125/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.2221 - mse: 0.2221
- rmse: 0.4712 - mae: 0.2784 - mape: 8.7835
Epoch 125: val_loss did not improve from 0.21155
318/318 [==============================] - 1s 3ms/step - loss: 0.2234 - mse:
0.2234 - rmse: 0.4726 - mae: 0.2783 - mape: 8.7736 - val_loss: 0.2320 - val_mse:
0.2320 - val_rmse: 0.4816 - val_mae: 0.3071 - val_mape: 9.8313 - lr: 0.0010
Epoch 126/2000
300/318 [==========================>..] - ETA: 0s - loss: 0.2225 - mse: 0.2225
- rmse: 0.4716 - mae: 0.2782 - mape: 8.7390
Epoch 126: val_loss did not improve from 0.21155
318/318 [==============================] - 1s 3ms/step - loss: 0.2236 - mse:
0.2236 - rmse: 0.4729 - mae: 0.2800 - mape: 8.7967 - val_loss: 0.2274 - val_mse:
0.2274 - val_rmse: 0.4768 - val_mae: 0.2918 - val_mape: 9.2530 - lr: 0.0010
Epoch 127/2000
302/318 [==========================>..] - ETA: 0s - loss: 0.2312 - mse: 0.2312
- rmse: 0.4809 - mae: 0.2853 - mape: 8.9527
Epoch 127: val_loss did not improve from 0.21155
318/318 [==============================] - 1s 3ms/step - loss: 0.2312 - mse:
0.2312 - rmse: 0.4808 - mae: 0.2852 - mape: 8.9567 - val_loss: 0.2274 - val_mse:
0.2274 - val_rmse: 0.4769 - val_mae: 0.2779 - val_mape: 8.7827 - lr: 0.0010
Epoch 128/2000
315/318 [============================>.] - ETA: 0s - loss: 0.2282 - mse: 0.2282
- rmse: 0.4777 - mae: 0.2822 - mape: 8.8425
Epoch 128: val_loss did not improve from 0.21155
318/318 [==============================] - 1s 3ms/step - loss: 0.2282 - mse:
0.2282 - rmse: 0.4777 - mae: 0.2822 - mape: 8.8434 - val_loss: 0.2245 - val_mse:

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0.2245 - val_rmse: 0.4738 - val_mae: 0.2745 - val_mape: 8.4213 - lr: 0.0010
Epoch 129/2000
290/318 [===========================>…] - ETA: 0s - loss: 0.2256 - mse: 0.2256
- rmse: 0.4750 - mae: 0.2826 - mape: 8.9264
Epoch 129: val_loss did not improve from 0.21155
318/318 [==============================] - 1s 3ms/step - loss: 0.2264 - mse:
0.2264 - rmse: 0.4759 - mae: 0.2826 - mape: 8.9095 - val_loss: 0.2218 - val_mse:
0.2218 - val_rmse: 0.4709 - val_mae: 0.2837 - val_mape: 9.0990 - lr: 0.0010
Epoch 130/2000
295/318 [===========================>…] - ETA: 0s - loss: 0.2242 - mse: 0.2242
- rmse: 0.4735 - mae: 0.2785 - mape: 8.7413
Epoch 130: val_loss did not improve from 0.21155
318/318 [==============================] - 1s 3ms/step - loss: 0.2245 - mse:
0.2245 - rmse: 0.4738 - mae: 0.2782 - mape: 8.7320 - val_loss: 0.2129 - val_mse:
0.2129 - val_rmse: 0.4614 - val_mae: 0.2689 - val_mape: 8.3436 - lr: 0.0010
Epoch 131/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.2255 - mse: 0.2255
- rmse: 0.4749 - mae: 0.2818 - mape: 8.8535
Epoch 131: val_loss improved from 0.21155 to 0.21067, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2258 - mse:
0.2258 - rmse: 0.4752 - mae: 0.2813 - mape: 8.8252 - val_loss: 0.2107 - val_mse:
0.2107 - val_rmse: 0.4590 - val_mae: 0.2633 - val_mape: 8.3088 - lr: 0.0010
Epoch 132/2000
311/318 [============================>.] - ETA: 0s - loss: 0.2249 - mse: 0.2249
- rmse: 0.4742 - mae: 0.2787 - mape: 8.7569
Epoch 132: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2257 - mse:
0.2257 - rmse: 0.4751 - mae: 0.2790 - mape: 8.7678 - val_loss: 0.2245 - val_mse:
0.2245 - val_rmse: 0.4738 - val_mae: 0.2688 - val_mape: 8.1425 - lr: 0.0010
Epoch 133/2000
310/318 [============================>.] - ETA: 0s - loss: 0.2326 - mse: 0.2326
- rmse: 0.4823 - mae: 0.2868 - mape: 9.0360
Epoch 133: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2327 - mse:
0.2327 - rmse: 0.4824 - mae: 0.2876 - mape: 9.0616 - val_loss: 0.2440 - val_mse:
0.2440 - val_rmse: 0.4939 - val_mae: 0.3136 - val_mape: 9.9187 - lr: 0.0010
Epoch 134/2000
315/318 [============================>.] - ETA: 0s - loss: 0.2298 - mse: 0.2298
- rmse: 0.4794 - mae: 0.2844 - mape: 8.9400
Epoch 134: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2295 - mse:
0.2295 - rmse: 0.4791 - mae: 0.2842 - mape: 8.9319 - val_loss: 0.2197 - val_mse:
0.2197 - val_rmse: 0.4687 - val_mae: 0.2826 - val_mape: 9.1296 - lr: 0.0010
Epoch 135/2000
308/318 [============================>.] - ETA: 0s - loss: 0.2294 - mse: 0.2294
- rmse: 0.4790 - mae: 0.2846 - mape: 8.9343
Epoch 135: val_loss did not improve from 0.21067
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318/318 [==============================] - 1s 3ms/step - loss: 0.2292 - mse:
0.2292 - rmse: 0.4787 - mae: 0.2846 - mape: 8.9425 - val_loss: 0.2223 - val_mse:
0.2223 - val_rmse: 0.4715 - val_mae: 0.2831 - val_mape: 8.8962 - lr: 0.0010
Epoch 136/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.2406 - mse: 0.2406
- rmse: 0.4905 - mae: 0.2936 - mape: 9.2809
Epoch 136: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2383 - mse:
0.2383 - rmse: 0.4882 - mae: 0.2925 - mape: 9.2510 - val_loss: 0.2319 - val_mse:
0.2319 - val_rmse: 0.4815 - val_mae: 0.2951 - val_mape: 9.1981 - lr: 0.0010
Epoch 137/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.2295 - mse: 0.2295
- rmse: 0.4791 - mae: 0.2844 - mape: 8.9673
Epoch 137: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2283 - mse:
0.2283 - rmse: 0.4778 - mae: 0.2834 - mape: 8.9461 - val_loss: 0.2761 - val_mse:
0.2761 - val_rmse: 0.5255 - val_mae: 0.3052 - val_mape: 9.1907 - lr: 0.0010
Epoch 138/2000
311/318 [============================>.] - ETA: 0s - loss: 0.2252 - mse: 0.2252
- rmse: 0.4745 - mae: 0.2817 - mape: 8.8595
Epoch 138: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2253 - mse:
0.2253 - rmse: 0.4747 - mae: 0.2819 - mape: 8.8633 - val_loss: 0.2209 - val_mse:
0.2209 - val_rmse: 0.4700 - val_mae: 0.2945 - val_mape: 9.5453 - lr: 0.0010
Epoch 139/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.2290 - mse: 0.2290
- rmse: 0.4785 - mae: 0.2851 - mape: 8.9574
Epoch 139: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2282 - mse:
0.2282 - rmse: 0.4778 - mae: 0.2850 - mape: 8.9575 - val_loss: 0.2161 - val_mse:
0.2161 - val_rmse: 0.4649 - val_mae: 0.2858 - val_mape: 9.1162 - lr: 0.0010
Epoch 140/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.2343 - mse: 0.2343
- rmse: 0.4840 - mae: 0.2896 - mape: 9.1351
Epoch 140: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2323 - mse:
0.2323 - rmse: 0.4820 - mae: 0.2882 - mape: 9.0913 - val_loss: 0.2256 - val_mse:
0.2256 - val_rmse: 0.4749 - val_mae: 0.3082 - val_mape: 10.1088 - lr: 0.0010
Epoch 141/2000
312/318 [============================>.] - ETA: 0s - loss: 0.2310 - mse: 0.2310
- rmse: 0.4807 - mae: 0.2868 - mape: 9.0414
Epoch 141: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2305 - mse:
0.2305 - rmse: 0.4801 - mae: 0.2866 - mape: 9.0449 - val_loss: 0.2249 - val_mse:
0.2249 - val_rmse: 0.4743 - val_mae: 0.2813 - val_mape: 8.7729 - lr: 0.0010
Epoch 142/2000
292/318 [==========================>…] - ETA: 0s - loss: 0.2301 - mse: 0.2301
- rmse: 0.4797 - mae: 0.2836 - mape: 8.9386
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Epoch 142: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2290 - mse:
0.2290 - rmse: 0.4785 - mae: 0.2830 - mape: 8.9185 - val_loss: 0.2251 - val_mse:
0.2251 - val_rmse: 0.4745 - val_mae: 0.2701 - val_mape: 8.1777 - lr: 0.0010
Epoch 143/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.2317 - mse: 0.2317
- rmse: 0.4814 - mae: 0.2854 - mape: 8.9893
Epoch 143: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2313 - mse:
0.2313 - rmse: 0.4809 - mae: 0.2850 - mape: 8.9703 - val_loss: 0.2418 - val_mse:
0.2418 - val_rmse: 0.4918 - val_mae: 0.2909 - val_mape: 9.3714 - lr: 0.0010
Epoch 144/2000
309/318 [=============================>.] - ETA: 0s - loss: 0.2271 - mse: 0.2271
- rmse: 0.4765 - mae: 0.2813 - mape: 8.8564
Epoch 144: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2271 - mse:
0.2271 - rmse: 0.4765 - mae: 0.2812 - mape: 8.8571 - val_loss: 0.2163 - val_mse:
0.2163 - val_rmse: 0.4651 - val_mae: 0.2720 - val_mape: 8.3631 - lr: 0.0010
Epoch 145/2000
318/318 [==============================] - ETA: 0s - loss: 0.2228 - mse: 0.2228
- rmse: 0.4720 - mae: 0.2756 - mape: 8.6404
Epoch 145: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2228 - mse:
0.2228 - rmse: 0.4720 - mae: 0.2756 - mape: 8.6404 - val_loss: 0.2133 - val_mse:
0.2133 - val_rmse: 0.4619 - val_mae: 0.2711 - val_mape: 8.7738 - lr: 0.0010
Epoch 146/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.2269 - mse: 0.2269
- rmse: 0.4763 - mae: 0.2803 - mape: 8.8238
Epoch 146: val_loss did not improve from 0.21067
318/318 [==============================] - 1s 3ms/step - loss: 0.2267 - mse:
0.2267 - rmse: 0.4762 - mae: 0.2804 - mape: 8.8255 - val_loss: 0.2121 - val_mse:
0.2121 - val_rmse: 0.4605 - val_mae: 0.2657 - val_mape: 8.2050 - lr: 0.0010
Epoch 147/2000
310/318 [=============================>.] - ETA: 0s - loss: 0.2206 - mse: 0.2206
- rmse: 0.4697 - mae: 0.2767 - mape: 8.6917
Epoch 147: val_loss improved from 0.21067 to 0.20884, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2219 - mse:
0.2219 - rmse: 0.4711 - mae: 0.2772 - mape: 8.7035 - val_loss: 0.2088 - val_mse:
0.2088 - val_rmse: 0.4570 - val_mae: 0.2664 - val_mape: 8.3153 - lr: 0.0010
Epoch 148/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.2288 - mse: 0.2288
- rmse: 0.4783 - mae: 0.2827 - mape: 8.8863
Epoch 148: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2280 - mse:
0.2280 - rmse: 0.4775 - mae: 0.2819 - mape: 8.8579 - val_loss: 0.2163 - val_mse:
0.2163 - val_rmse: 0.4651 - val_mae: 0.2804 - val_mape: 8.9659 - lr: 0.0010
Epoch 149/2000
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304/318 [===========================>..] - ETA: 0s - loss: 0.2197 - mse: 0.2197
- rmse: 0.4687 - mae: 0.2733 - mape: 8.5855
Epoch 149: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2207 - mse:
0.2207 - rmse: 0.4698 - mae: 0.2742 - mape: 8.6047 - val_loss: 0.2094 - val_mse:
0.2094 - val_rmse: 0.4576 - val_mae: 0.2646 - val_mape: 8.1863 - lr: 0.0010
Epoch 150/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.2212 - mse: 0.2212
- rmse: 0.4703 - mae: 0.2758 - mape: 8.6648
Epoch 150: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2233 - mse:
0.2233 - rmse: 0.4725 - mae: 0.2775 - mape: 8.7119 - val_loss: 0.2134 - val_mse:
0.2134 - val_rmse: 0.4620 - val_mae: 0.2704 - val_mape: 8.5276 - lr: 0.0010
Epoch 151/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.2232 - mse: 0.2232
- rmse: 0.4724 - mae: 0.2811 - mape: 8.8571
Epoch 151: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2221 - mse:
0.2221 - rmse: 0.4713 - mae: 0.2805 - mape: 8.8333 - val_loss: 0.2162 - val_mse:
0.2162 - val_rmse: 0.4650 - val_mae: 0.2730 - val_mape: 8.4813 - lr: 0.0010
Epoch 152/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.2255 - mse: 0.2255
- rmse: 0.4749 - mae: 0.2803 - mape: 8.8380
Epoch 152: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2240 - mse:
0.2240 - rmse: 0.4732 - mae: 0.2790 - mape: 8.7963 - val_loss: 0.2150 - val_mse:
0.2150 - val_rmse: 0.4637 - val_mae: 0.2630 - val_mape: 8.2063 - lr: 0.0010
Epoch 153/2000
309/318 [============================>.] - ETA: 0s - loss: 0.2229 - mse: 0.2229
- rmse: 0.4721 - mae: 0.2790 - mape: 8.7676
Epoch 153: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2228 - mse:
0.2228 - rmse: 0.4720 - mae: 0.2790 - mape: 8.7660 - val_loss: 0.2231 - val_mse:
0.2231 - val_rmse: 0.4723 - val_mae: 0.2732 - val_mape: 8.4259 - lr: 0.0010
Epoch 154/2000
318/318 [==============================] - ETA: 0s - loss: 0.2239 - mse: 0.2239
- rmse: 0.4732 - mae: 0.2782 - mape: 8.7296
Epoch 154: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2239 - mse:
0.2239 - rmse: 0.4732 - mae: 0.2782 - mape: 8.7296 - val_loss: 0.2315 - val_mse:
0.2315 - val_rmse: 0.4811 - val_mae: 0.2791 - val_mape: 8.6254 - lr: 0.0010
Epoch 155/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.2260 - mse: 0.2260
- rmse: 0.4754 - mae: 0.2795 - mape: 8.7893
Epoch 155: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2256 - mse:
0.2256 - rmse: 0.4749 - mae: 0.2794 - mape: 8.7730 - val_loss: 0.2320 - val_mse:
0.2320 - val_rmse: 0.4816 - val_mae: 0.2849 - val_mape: 9.2274 - lr: 0.0010
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Epoch 156/2000
297/318 [==========================>..] - ETA: 0s - loss: 0.2174 - mse: 0.2174
- rmse: 0.4663 - mae: 0.2744 - mape: 8.6166
Epoch 156: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2184 - mse:
0.2184 - rmse: 0.4673 - mae: 0.2747 - mape: 8.6351 - val_loss: 0.2141 - val_mse:
0.2141 - val_rmse: 0.4627 - val_mae: 0.2650 - val_mape: 8.1094 - lr: 0.0010
Epoch 157/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.2226 - mse: 0.2226
- rmse: 0.4718 - mae: 0.2782 - mape: 8.7293
Epoch 157: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2231 - mse:
0.2231 - rmse: 0.4723 - mae: 0.2782 - mape: 8.7287 - val_loss: 0.2176 - val_mse:
0.2176 - val_rmse: 0.4665 - val_mae: 0.2710 - val_mape: 8.2729 - lr: 0.0010
Epoch 158/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.2154 - mse: 0.2154
- rmse: 0.4641 - mae: 0.2701 - mape: 8.4492
Epoch 158: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2187 - mse:
0.2187 - rmse: 0.4676 - mae: 0.2718 - mape: 8.4987 - val_loss: 0.2093 - val_mse:
0.2093 - val_rmse: 0.4575 - val_mae: 0.2641 - val_mape: 8.2887 - lr: 0.0010
Epoch 159/2000
301/318 [============================>..] - ETA: 0s - loss: 0.2184 - mse: 0.2184
- rmse: 0.4673 - mae: 0.2753 - mape: 8.6447
Epoch 159: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2197 - mse:
0.2197 - rmse: 0.4687 - mae: 0.2755 - mape: 8.6399 - val_loss: 0.2225 - val_mse:
0.2225 - val_rmse: 0.4717 - val_mae: 0.2946 - val_mape: 9.6049 - lr: 0.0010
Epoch 160/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.2275 - mse: 0.2275
- rmse: 0.4769 - mae: 0.2810 - mape: 8.8613
Epoch 160: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2275 - mse:
0.2275 - rmse: 0.4769 - mae: 0.2817 - mape: 8.8967 - val_loss: 0.2270 - val_mse:
0.2270 - val_rmse: 0.4764 - val_mae: 0.2791 - val_mape: 8.8653 - lr: 0.0010
Epoch 161/2000
308/318 [============================>.] - ETA: 0s - loss: 0.2170 - mse: 0.2170
- rmse: 0.4658 - mae: 0.2737 - mape: 8.6020
Epoch 161: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2190 - mse:
0.2190 - rmse: 0.4680 - mae: 0.2750 - mape: 8.6535 - val_loss: 0.2311 - val_mse:
0.2311 - val_rmse: 0.4807 - val_mae: 0.2808 - val_mape: 9.1182 - lr: 0.0010
Epoch 162/2000
292/318 [==========================>…] - ETA: 0s - loss: 0.2196 - mse: 0.2196
- rmse: 0.4687 - mae: 0.2741 - mape: 8.5926
Epoch 162: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2206 - mse:
0.2206 - rmse: 0.4697 - mae: 0.2748 - mape: 8.6138 - val_loss: 0.2111 - val_mse:
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0.2111 - val_rmse: 0.4595 - val_mae: 0.2682 - val_mape: 8.5348 - lr: 0.0010
Epoch 163/2000
300/318 [============================>..] - ETA: 0s - loss: 0.2177 - mse: 0.2177
- rmse: 0.4666 - mae: 0.2738 - mape: 8.5832
Epoch 163: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2182 - mse:
0.2182 - rmse: 0.4671 - mae: 0.2742 - mape: 8.5939 - val_loss: 0.2383 - val_mse:
0.2383 - val_rmse: 0.4882 - val_mae: 0.2801 - val_mape: 8.3567 - lr: 0.0010
Epoch 164/2000
307/318 [============================>..] - ETA: 0s - loss: 0.2194 - mse: 0.2194
- rmse: 0.4684 - mae: 0.2748 - mape: 8.6272
Epoch 164: val_loss did not improve from 0.20884
318/318 [==============================] - 1s 3ms/step - loss: 0.2200 - mse:
0.2200 - rmse: 0.4690 - mae: 0.2748 - mape: 8.6326 - val_loss: 0.2426 - val_mse:
0.2426 - val_rmse: 0.4925 - val_mae: 0.3001 - val_mape: 9.1200 - lr: 0.0010
Epoch 165/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.2241 - mse: 0.2241
- rmse: 0.4734 - mae: 0.2788 - mape: 8.7455
Epoch 165: val_loss improved from 0.20884 to 0.20589, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2227 - mse:
0.2227 - rmse: 0.4719 - mae: 0.2781 - mape: 8.7212 - val_loss: 0.2059 - val_mse:
0.2059 - val_rmse: 0.4538 - val_mae: 0.2622 - val_mape: 8.2643 - lr: 0.0010
Epoch 166/2000
316/318 [============================>.] - ETA: 0s - loss: 0.2222 - mse: 0.2222
- rmse: 0.4714 - mae: 0.2768 - mape: 8.6970
Epoch 166: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2224 - mse:
0.2224 - rmse: 0.4716 - mae: 0.2769 - mape: 8.7019 - val_loss: 0.2179 - val_mse:
0.2179 - val_rmse: 0.4668 - val_mae: 0.2690 - val_mape: 8.5394 - lr: 0.0010
Epoch 167/2000
311/318 [============================>.] - ETA: 0s - loss: 0.2163 - mse: 0.2163
- rmse: 0.4651 - mae: 0.2697 - mape: 8.4430
Epoch 167: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2162 - mse:
0.2162 - rmse: 0.4649 - mae: 0.2696 - mape: 8.4402 - val_loss: 0.2087 - val_mse:
0.2087 - val_rmse: 0.4568 - val_mae: 0.2642 - val_mape: 8.1988 - lr: 0.0010
Epoch 168/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.2226 - mse: 0.2226
- rmse: 0.4718 - mae: 0.2735 - mape: 8.5830
Epoch 168: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2216 - mse:
0.2216 - rmse: 0.4707 - mae: 0.2734 - mape: 8.6023 - val_loss: 0.2163 - val_mse:
0.2163 - val_rmse: 0.4651 - val_mae: 0.2612 - val_mape: 7.8446 - lr: 0.0010
Epoch 169/2000
315/318 [============================>.] - ETA: 0s - loss: 0.2275 - mse: 0.2275
- rmse: 0.4770 - mae: 0.2814 - mape: 8.8410
Epoch 169: val_loss did not improve from 0.20589

318/318 [==============================] - 1s 3ms/step - loss: 0.2274 - mse: 0.2274 - rmse: 0.4768 - mae: 0.2814 - mape: 8.8414 - val_loss: 0.2522 - val_mse: 0.2522 - val_rmse: 0.5022 - val_mae: 0.3003 - val_mape: 9.1542 - lr: 0.0010
Epoch 170/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.2216 - mse: 0.2216 - rmse: 0.4708 - mae: 0.2762 - mape: 8.6728
Epoch 170: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2216 - mse: 0.2216 - rmse: 0.4707 - mae: 0.2758 - mape: 8.6544 - val_loss: 0.2139 - val_mse: 0.2139 - val_rmse: 0.4625 - val_mae: 0.2758 - val_mape: 8.9660 - lr: 0.0010
Epoch 171/2000
308/318 [=============================>.] - ETA: 0s - loss: 0.2214 - mse: 0.2214 - rmse: 0.4705 - mae: 0.2766 - mape: 8.6908
Epoch 171: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2207 - mse: 0.2207 - rmse: 0.4698 - mae: 0.2762 - mape: 8.6742 - val_loss: 0.2094 - val_mse: 0.2094 - val_rmse: 0.4576 - val_mae: 0.2664 - val_mape: 8.4726 - lr: 0.0010
Epoch 172/2000
310/318 [=============================>.] - ETA: 0s - loss: 0.2195 - mse: 0.2195 - rmse: 0.4685 - mae: 0.2735 - mape: 8.5782
Epoch 172: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2188 - mse: 0.2188 - rmse: 0.4678 - mae: 0.2731 - mape: 8.5685 - val_loss: 0.2200 - val_mse: 0.2200 - val_rmse: 0.4691 - val_mae: 0.2817 - val_mape: 8.8955 - lr: 0.0010
Epoch 173/2000
309/318 [=============================>.] - ETA: 0s - loss: 0.2218 - mse: 0.2218 - rmse: 0.4710 - mae: 0.2766 - mape: 8.7221
Epoch 173: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2221 - mse: 0.2221 - rmse: 0.4712 - mae: 0.2767 - mape: 8.7207 - val_loss: 0.2270 - val_mse: 0.2270 - val_rmse: 0.4764 - val_mae: 0.2772 - val_mape: 9.0170 - lr: 0.0010
Epoch 174/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.2166 - mse: 0.2166 - rmse: 0.4654 - mae: 0.2731 - mape: 8.5958
Epoch 174: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2174 - mse: 0.2174 - rmse: 0.4662 - mae: 0.2734 - mape: 8.6015 - val_loss: 0.2080 - val_mse: 0.2080 - val_rmse: 0.4561 - val_mae: 0.2590 - val_mape: 8.1165 - lr: 0.0010
Epoch 175/2000
294/318 [===========================>…] - ETA: 0s - loss: 0.2170 - mse: 0.2170 - rmse: 0.4659 - mae: 0.2746 - mape: 8.6156
Epoch 175: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2184 - mse: 0.2184 - rmse: 0.4673 - mae: 0.2747 - mape: 8.6238 - val_loss: 0.2251 - val_mse: 0.2251 - val_rmse: 0.4744 - val_mae: 0.2722 - val_mape: 8.5827 - lr: 0.0010
Epoch 176/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.2237 - mse: 0.2237 - rmse: 0.4729 - mae: 0.2786 - mape: 8.7514

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Epoch 176: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2218 - mse:
0.2218 - rmse: 0.4710 - mae: 0.2774 - mape: 8.7084 - val_loss: 0.2081 - val_mse:
0.2081 - val_rmse: 0.4561 - val_mae: 0.2554 - val_mape: 7.9616 - lr: 0.0010
Epoch 177/2000
307/318 [=============================>..] - ETA: 0s - loss: 0.2167 - mse: 0.2167
- rmse: 0.4655 - mae: 0.2701 - mape: 8.4623
Epoch 177: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2169 - mse:
0.2169 - rmse: 0.4657 - mae: 0.2705 - mape: 8.4722 - val_loss: 0.2100 - val_mse:
0.2100 - val_rmse: 0.4583 - val_mae: 0.2716 - val_mape: 8.7412 - lr: 0.0010
Epoch 178/2000
304/318 [============================>..] - ETA: 0s - loss: 0.2145 - mse: 0.2145
- rmse: 0.4631 - mae: 0.2707 - mape: 8.4711
Epoch 178: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2150 - mse:
0.2150 - rmse: 0.4637 - mae: 0.2709 - mape: 8.4835 - val_loss: 0.2214 - val_mse:
0.2214 - val_rmse: 0.4705 - val_mae: 0.2723 - val_mape: 8.2868 - lr: 0.0010
Epoch 179/2000
313/318 [=============================>.] - ETA: 0s - loss: 0.2208 - mse: 0.2208
- rmse: 0.4698 - mae: 0.2759 - mape: 8.6437
Epoch 179: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2202 - mse:
0.2202 - rmse: 0.4693 - mae: 0.2757 - mape: 8.6388 - val_loss: 0.2256 - val_mse:
0.2256 - val_rmse: 0.4749 - val_mae: 0.2791 - val_mape: 8.9791 - lr: 0.0010
Epoch 180/2000
316/318 [=============================>.] - ETA: 0s - loss: 0.2200 - mse: 0.2200
- rmse: 0.4690 - mae: 0.2736 - mape: 8.5911
Epoch 180: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2199 - mse:
0.2199 - rmse: 0.4690 - mae: 0.2736 - mape: 8.5928 - val_loss: 0.2087 - val_mse:
0.2087 - val_rmse: 0.4569 - val_mae: 0.2654 - val_mape: 8.2095 - lr: 0.0010
Epoch 181/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.2132 - mse: 0.2132
- rmse: 0.4617 - mae: 0.2691 - mape: 8.4288
Epoch 181: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2171 - mse:
0.2171 - rmse: 0.4660 - mae: 0.2720 - mape: 8.5264 - val_loss: 0.2061 - val_mse:
0.2061 - val_rmse: 0.4540 - val_mae: 0.2659 - val_mape: 8.4206 - lr: 0.0010
Epoch 182/2000
299/318 [============================>..] - ETA: 0s - loss: 0.2142 - mse: 0.2142
- rmse: 0.4629 - mae: 0.2675 - mape: 8.3787
Epoch 182: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2127 - mse:
0.2127 - rmse: 0.4612 - mae: 0.2670 - mape: 8.3578 - val_loss: 0.2100 - val_mse:
0.2100 - val_rmse: 0.4583 - val_mae: 0.2723 - val_mape: 8.7499 - lr: 0.0010
Epoch 183/2000
298/318 [============================>..] - ETA: 0s - loss: 0.2194 - mse: 0.2194
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- rmse: 0.4684 - mae: 0.2732 - mape: 8.5444
Epoch 183: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2181 - mse:
0.2181 - rmse: 0.4670 - mae: 0.2724 - mape: 8.5312 - val_loss: 0.2079 - val_mse:
0.2079 - val_rmse: 0.4560 - val_mae: 0.2732 - val_mape: 8.8467 - lr: 0.0010
Epoch 184/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.2195 - mse: 0.2195
- rmse: 0.4685 - mae: 0.2738 - mape: 8.5963
Epoch 184: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2186 - mse:
0.2186 - rmse: 0.4676 - mae: 0.2733 - mape: 8.5783 - val_loss: 0.2102 - val_mse:
0.2102 - val_rmse: 0.4585 - val_mae: 0.2742 - val_mape: 8.7656 - lr: 0.0010
Epoch 185/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.2174 - mse: 0.2174
- rmse: 0.4662 - mae: 0.2722 - mape: 8.5407
Epoch 185: val_loss did not improve from 0.20589
318/318 [==============================] - 1s 3ms/step - loss: 0.2176 - mse:
0.2176 - rmse: 0.4665 - mae: 0.2723 - mape: 8.5494 - val_loss: 0.2068 - val_mse:
0.2068 - val_rmse: 0.4547 - val_mae: 0.2598 - val_mape: 8.1887 - lr: 0.0010
Epoch 186/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.2172 - mse: 0.2172
- rmse: 0.4661 - mae: 0.2710 - mape: 8.4855
Epoch 186: val_loss improved from 0.20589 to 0.20497, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2172 - mse:
0.2172 - rmse: 0.4660 - mae: 0.2709 - mape: 8.4865 - val_loss: 0.2050 - val_mse:
0.2050 - val_rmse: 0.4527 - val_mae: 0.2561 - val_mape: 7.9651 - lr: 0.0010
Epoch 187/2000
310/318 [============================>.] - ETA: 0s - loss: 0.2217 - mse: 0.2217
- rmse: 0.4709 - mae: 0.2736 - mape: 8.5703
Epoch 187: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2199 - mse:
0.2199 - rmse: 0.4689 - mae: 0.2727 - mape: 8.5510 - val_loss: 0.2088 - val_mse:
0.2088 - val_rmse: 0.4570 - val_mae: 0.2564 - val_mape: 7.8966 - lr: 0.0010
Epoch 188/2000
308/318 [============================>.] - ETA: 0s - loss: 0.2147 - mse: 0.2147
- rmse: 0.4634 - mae: 0.2682 - mape: 8.4080
Epoch 188: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2137 - mse:
0.2137 - rmse: 0.4622 - mae: 0.2681 - mape: 8.4072 - val_loss: 0.2151 - val_mse:
0.2151 - val_rmse: 0.4638 - val_mae: 0.2644 - val_mape: 8.1291 - lr: 0.0010
Epoch 189/2000
290/318 [==========================>…] - ETA: 0s - loss: 0.2173 - mse: 0.2173
- rmse: 0.4662 - mae: 0.2691 - mape: 8.4240
Epoch 189: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2174 - mse:
0.2174 - rmse: 0.4662 - mae: 0.2692 - mape: 8.4271 - val_loss: 0.2059 - val_mse:
0.2059 - val_rmse: 0.4537 - val_mae: 0.2633 - val_mape: 8.2807 - lr: 0.0010

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Epoch 190/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.2129 - mse: 0.2129
- rmse: 0.4614 - mae: 0.2665 - mape: 8.3623
Epoch 190: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2131 - mse:
0.2131 - rmse: 0.4617 - mae: 0.2670 - mape: 8.3639 - val_loss: 0.2112 - val_mse:
0.2112 - val_rmse: 0.4596 - val_mae: 0.2618 - val_mape: 8.1222 - lr: 0.0010
Epoch 191/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.2172 - mse: 0.2172
- rmse: 0.4661 - mae: 0.2699 - mape: 8.4811
Epoch 191: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2173 - mse:
0.2173 - rmse: 0.4661 - mae: 0.2701 - mape: 8.4800 - val_loss: 0.2412 - val_mse:
0.2412 - val_rmse: 0.4912 - val_mae: 0.2930 - val_mape: 8.9662 - lr: 0.0010
Epoch 192/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.2189 - mse: 0.2189
- rmse: 0.4678 - mae: 0.2726 - mape: 8.5493
Epoch 192: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2190 - mse:
0.2190 - rmse: 0.4680 - mae: 0.2727 - mape: 8.5595 - val_loss: 0.2080 - val_mse:
0.2080 - val_rmse: 0.4561 - val_mae: 0.2604 - val_mape: 8.0228 - lr: 0.0010
Epoch 193/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.2114 - mse: 0.2114
- rmse: 0.4597 - mae: 0.2663 - mape: 8.3633
Epoch 193: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2137 - mse:
0.2137 - rmse: 0.4622 - mae: 0.2672 - mape: 8.3887 - val_loss: 0.2060 - val_mse:
0.2060 - val_rmse: 0.4539 - val_mae: 0.2683 - val_mape: 8.5474 - lr: 0.0010
Epoch 194/2000
316/318 [===========================>.] - ETA: 0s - loss: 0.2162 - mse: 0.2162
- rmse: 0.4650 - mae: 0.2716 - mape: 8.5175
Epoch 194: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2161 - mse:
0.2161 - rmse: 0.4649 - mae: 0.2716 - mape: 8.5152 - val_loss: 0.2056 - val_mse:
0.2056 - val_rmse: 0.4534 - val_mae: 0.2591 - val_mape: 8.0743 - lr: 0.0010
Epoch 195/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.2157 - mse: 0.2157
- rmse: 0.4644 - mae: 0.2714 - mape: 8.5064
Epoch 195: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2155 - mse:
0.2155 - rmse: 0.4642 - mae: 0.2711 - mape: 8.4904 - val_loss: 0.2500 - val_mse:
0.2500 - val_rmse: 0.5000 - val_mae: 0.3039 - val_mape: 9.8342 - lr: 0.0010
Epoch 196/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.2257 - mse: 0.2257
- rmse: 0.4750 - mae: 0.2776 - mape: 8.7287
Epoch 196: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2239 - mse:
0.2239 - rmse: 0.4732 - mae: 0.2761 - mape: 8.6747 - val_loss: 0.2175 - val_mse:
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0.2175 - val_rmse: 0.4664 - val_mae: 0.2705 - val_mape: 8.7162 - lr: 0.0010
Epoch 197/2000
316/318 [============================>.] - ETA: 0s - loss: 0.2190 - mse: 0.2190
- rmse: 0.4679 - mae: 0.2722 - mape: 8.5328
Epoch 197: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2191 - mse:
0.2191 - rmse: 0.4680 - mae: 0.2721 - mape: 8.5286 - val_loss: 0.2065 - val_mse:
0.2065 - val_rmse: 0.4544 - val_mae: 0.2584 - val_mape: 8.0675 - lr: 0.0010
Epoch 198/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.2177 - mse: 0.2177
- rmse: 0.4666 - mae: 0.2700 - mape: 8.4677
Epoch 198: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2181 - mse:
0.2181 - rmse: 0.4670 - mae: 0.2702 - mape: 8.4706 - val_loss: 0.2195 - val_mse:
0.2195 - val_rmse: 0.4686 - val_mae: 0.2677 - val_mape: 8.1823 - lr: 0.0010
Epoch 199/2000
303/318 [============================>..] - ETA: 0s - loss: 0.2134 - mse: 0.2134
- rmse: 0.4620 - mae: 0.2683 - mape: 8.4049
Epoch 199: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2153 - mse:
0.2153 - rmse: 0.4640 - mae: 0.2698 - mape: 8.4377 - val_loss: 0.2147 - val_mse:
0.2147 - val_rmse: 0.4633 - val_mae: 0.2897 - val_mape: 9.3410 - lr: 0.0010
Epoch 200/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.2146 - mse: 0.2146
- rmse: 0.4633 - mae: 0.2682 - mape: 8.4014
Epoch 200: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2141 - mse:
0.2141 - rmse: 0.4627 - mae: 0.2676 - mape: 8.3826 - val_loss: 0.2116 - val_mse:
0.2116 - val_rmse: 0.4600 - val_mae: 0.2708 - val_mape: 8.6891 - lr: 0.0010
Epoch 201/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.2121 - mse: 0.2121
- rmse: 0.4605 - mae: 0.2668 - mape: 8.3595
Epoch 201: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2144 - mse:
0.2144 - rmse: 0.4631 - mae: 0.2680 - mape: 8.3985 - val_loss: 0.2594 - val_mse:
0.2594 - val_rmse: 0.5093 - val_mae: 0.3120 - val_mape: 9.5622 - lr: 0.0010
Epoch 202/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.2271 - mse: 0.2271
- rmse: 0.4766 - mae: 0.2816 - mape: 8.8777
Epoch 202: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2269 - mse:
0.2269 - rmse: 0.4763 - mae: 0.2812 - mape: 8.8600 - val_loss: 0.2114 - val_mse:
0.2114 - val_rmse: 0.4598 - val_mae: 0.2601 - val_mape: 8.0346 - lr: 0.0010
Epoch 203/2000
312/318 [============================>.] - ETA: 0s - loss: 0.2106 - mse: 0.2106
- rmse: 0.4589 - mae: 0.2645 - mape: 8.2781
Epoch 203: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2103 - mse:

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0.2103 - rmse: 0.4586 - mae: 0.2646 - mape: 8.2830 - val_loss: 0.2096 - val_mse:
0.2096 - val_rmse: 0.4579 - val_mae: 0.2686 - val_mape: 8.3685 - lr: 0.0010
Epoch 204/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.2204 - mse: 0.2204
- rmse: 0.4695 - mae: 0.2751 - mape: 8.6401
Epoch 204: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2186 - mse:
0.2186 - rmse: 0.4675 - mae: 0.2743 - mape: 8.6209 - val_loss: 0.2053 - val_mse:
0.2053 - val_rmse: 0.4532 - val_mae: 0.2557 - val_mape: 7.8801 - lr: 0.0010
Epoch 205/2000
314/318 [============================>.] - ETA: 0s - loss: 0.2148 - mse: 0.2148
- rmse: 0.4635 - mae: 0.2687 - mape: 8.4464
Epoch 205: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2148 - mse:
0.2148 - rmse: 0.4634 - mae: 0.2685 - mape: 8.4368 - val_loss: 0.2066 - val_mse:
0.2066 - val_rmse: 0.4546 - val_mae: 0.2599 - val_mape: 8.1170 - lr: 0.0010
Epoch 206/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.2147 - mse: 0.2147
- rmse: 0.4633 - mae: 0.2690 - mape: 8.4352
Epoch 206: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2153 - mse:
0.2153 - rmse: 0.4641 - mae: 0.2697 - mape: 8.4524 - val_loss: 0.2275 - val_mse:
0.2275 - val_rmse: 0.4770 - val_mae: 0.3037 - val_mape: 9.9880 - lr: 0.0010
Epoch 207/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.2150 - mse: 0.2150
- rmse: 0.4637 - mae: 0.2700 - mape: 8.4722
Epoch 207: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2165 - mse:
0.2165 - rmse: 0.4653 - mae: 0.2701 - mape: 8.4812 - val_loss: 0.2261 - val_mse:
0.2261 - val_rmse: 0.4755 - val_mae: 0.2863 - val_mape: 9.1373 - lr: 0.0010
Epoch 208/2000
316/318 [============================>.] - ETA: 0s - loss: 0.2138 - mse: 0.2138
- rmse: 0.4624 - mae: 0.2679 - mape: 8.4215
Epoch 208: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2139 - mse:
0.2139 - rmse: 0.4624 - mae: 0.2681 - mape: 8.4261 - val_loss: 0.2082 - val_mse:
0.2082 - val_rmse: 0.4563 - val_mae: 0.2745 - val_mape: 8.6552 - lr: 0.0010
Epoch 209/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.2161 - mse: 0.2161
- rmse: 0.4649 - mae: 0.2718 - mape: 8.5126
Epoch 209: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2181 - mse:
0.2181 - rmse: 0.4670 - mae: 0.2728 - mape: 8.5357 - val_loss: 0.2115 - val_mse:
0.2115 - val_rmse: 0.4599 - val_mae: 0.2699 - val_mape: 8.6170 - lr: 0.0010
Epoch 210/2000
290/318 [==========================>…] - ETA: 0s - loss: 0.2115 - mse: 0.2115
- rmse: 0.4599 - mae: 0.2654 - mape: 8.3235
Epoch 210: val_loss did not improve from 0.20497
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318/318 [==============================] - 1s 3ms/step - loss: 0.2133 - mse:
0.2133 - rmse: 0.4618 - mae: 0.2670 - mape: 8.3644 - val_loss: 0.2250 - val_mse:
0.2250 - val_rmse: 0.4744 - val_mae: 0.2966 - val_mape: 9.8419 - lr: 0.0010
Epoch 211/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.2189 - mse: 0.2189
- rmse: 0.4679 - mae: 0.2710 - mape: 8.4956
Epoch 211: val_loss did not improve from 0.20497
318/318 [==============================] - 1s 3ms/step - loss: 0.2187 - mse:
0.2187 - rmse: 0.4677 - mae: 0.2707 - mape: 8.4874 - val_loss: 0.2151 - val_mse:
0.2151 - val_rmse: 0.4637 - val_mae: 0.2707 - val_mape: 8.5333 - lr: 0.0010
Epoch 212/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.2141 - mse: 0.2141
- rmse: 0.4627 - mae: 0.2687 - mape: 8.4196
Epoch 212: val_loss improved from 0.20497 to 0.20371, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2147 - mse:
0.2147 - rmse: 0.4634 - mae: 0.2689 - mape: 8.4306 - val_loss: 0.2037 - val_mse:
0.2037 - val_rmse: 0.4513 - val_mae: 0.2570 - val_mape: 7.9679 - lr: 0.0010
Epoch 213/2000
309/318 [=============================>.] - ETA: 0s - loss: 0.2121 - mse: 0.2121
- rmse: 0.4605 - mae: 0.2663 - mape: 8.3418
Epoch 213: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2120 - mse:
0.2120 - rmse: 0.4605 - mae: 0.2662 - mape: 8.3363 - val_loss: 0.2056 - val_mse:
0.2056 - val_rmse: 0.4535 - val_mae: 0.2624 - val_mape: 8.2800 - lr: 0.0010
Epoch 214/2000
318/318 [==============================] - ETA: 0s - loss: 0.2137 - mse: 0.2137
- rmse: 0.4623 - mae: 0.2672 - mape: 8.3737
Epoch 214: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2137 - mse:
0.2137 - rmse: 0.4623 - mae: 0.2672 - mape: 8.3737 - val_loss: 0.2115 - val_mse:
0.2115 - val_rmse: 0.4599 - val_mae: 0.2654 - val_mape: 8.2071 - lr: 0.0010
Epoch 215/2000
310/318 [=============================>.] - ETA: 0s - loss: 0.2193 - mse: 0.2193
- rmse: 0.4683 - mae: 0.2743 - mape: 8.6568
Epoch 215: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2187 - mse:
0.2187 - rmse: 0.4677 - mae: 0.2739 - mape: 8.6326 - val_loss: 0.2101 - val_mse:
0.2101 - val_rmse: 0.4584 - val_mae: 0.2599 - val_mape: 8.0830 - lr: 0.0010
Epoch 216/2000
309/318 [=============================>.] - ETA: 0s - loss: 0.2112 - mse: 0.2112
- rmse: 0.4596 - mae: 0.2646 - mape: 8.2965
Epoch 216: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2115 - mse:
0.2115 - rmse: 0.4599 - mae: 0.2647 - mape: 8.2929 - val_loss: 0.2102 - val_mse:
0.2102 - val_rmse: 0.4585 - val_mae: 0.2650 - val_mape: 8.4861 - lr: 0.0010
Epoch 217/2000
308/318 [============================>.] - ETA: 0s - loss: 0.2159 - mse: 0.2159

- rmse: 0.4646 - mae: 0.2692 - mape: 8.4257
Epoch 217: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2163 - mse:
0.2163 - rmse: 0.4650 - mae: 0.2693 - mape: 8.4219 - val_loss: 0.2173 - val_mse:
0.2173 - val_rmse: 0.4661 - val_mae: 0.2940 - val_mape: 9.7663 - lr: 0.0010
Epoch 218/2000
310/318 [=============================>.] - ETA: 0s - loss: 0.2124 - mse: 0.2124
- rmse: 0.4609 - mae: 0.2671 - mape: 8.4020
Epoch 218: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2115 - mse:
0.2115 - rmse: 0.4599 - mae: 0.2664 - mape: 8.3796 - val_loss: 0.2067 - val_mse:
0.2067 - val_rmse: 0.4547 - val_mae: 0.2574 - val_mape: 7.8731 - lr: 0.0010
Epoch 219/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.2133 - mse: 0.2133
- rmse: 0.4618 - mae: 0.2663 - mape: 8.3241
Epoch 219: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2129 - mse:
0.2129 - rmse: 0.4614 - mae: 0.2663 - mape: 8.3324 - val_loss: 0.2358 - val_mse:
0.2358 - val_rmse: 0.4856 - val_mae: 0.2923 - val_mape: 9.5757 - lr: 0.0010
Epoch 220/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.2099 - mse: 0.2099
- rmse: 0.4582 - mae: 0.2651 - mape: 8.3362
Epoch 220: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2126 - mse:
0.2126 - rmse: 0.4611 - mae: 0.2675 - mape: 8.3890 - val_loss: 0.2116 - val_mse:
0.2116 - val_rmse: 0.4600 - val_mae: 0.2742 - val_mape: 8.6972 - lr: 0.0010
Epoch 221/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.2152 - mse: 0.2152
- rmse: 0.4639 - mae: 0.2713 - mape: 8.5079
Epoch 221: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2164 - mse:
0.2164 - rmse: 0.4652 - mae: 0.2712 - mape: 8.5018 - val_loss: 0.2133 - val_mse:
0.2133 - val_rmse: 0.4618 - val_mae: 0.2789 - val_mape: 8.8248 - lr: 0.0010
Epoch 222/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.2139 - mse: 0.2139
- rmse: 0.4625 - mae: 0.2688 - mape: 8.4254
Epoch 222: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2160 - mse:
0.2160 - rmse: 0.4647 - mae: 0.2707 - mape: 8.5059 - val_loss: 0.2227 - val_mse:
0.2227 - val_rmse: 0.4720 - val_mae: 0.2884 - val_mape: 9.5231 - lr: 0.0010
Epoch 223/2000
292/318 [=========================>…] - ETA: 0s - loss: 0.2130 - mse: 0.2130
- rmse: 0.4616 - mae: 0.2645 - mape: 8.2932
Epoch 223: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2122 - mse:
0.2122 - rmse: 0.4606 - mae: 0.2645 - mape: 8.2888 - val_loss: 0.2066 - val_mse:
0.2066 - val_rmse: 0.4546 - val_mae: 0.2637 - val_mape: 8.3848 - lr: 0.0010
Epoch 224/2000

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299/318 [===========================>..] - ETA: 0s - loss: 0.2131 - mse: 0.2131
- rmse: 0.4616 - mae: 0.2669 - mape: 8.3600
Epoch 224: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2120 - mse:
0.2120 - rmse: 0.4605 - mae: 0.2664 - mape: 8.3345 - val_loss: 0.2099 - val_mse:
0.2099 - val_rmse: 0.4581 - val_mae: 0.2624 - val_mape: 8.2282 - lr: 0.0010
Epoch 225/2000
311/318 [============================>.] - ETA: 0s - loss: 0.2092 - mse: 0.2092
- rmse: 0.4574 - mae: 0.2641 - mape: 8.2617
Epoch 225: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2102 - mse:
0.2102 - rmse: 0.4585 - mae: 0.2644 - mape: 8.2726 - val_loss: 0.2086 - val_mse:
0.2086 - val_rmse: 0.4567 - val_mae: 0.2566 - val_mape: 7.8575 - lr: 0.0010
Epoch 226/2000
286/318 [=========================>…] - ETA: 0s - loss: 0.2146 - mse: 0.2146
- rmse: 0.4632 - mae: 0.2689 - mape: 8.3931
Epoch 226: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2154 - mse:
0.2154 - rmse: 0.4641 - mae: 0.2692 - mape: 8.4180 - val_loss: 0.2109 - val_mse:
0.2109 - val_rmse: 0.4593 - val_mae: 0.2732 - val_mape: 8.6303 - lr: 0.0010
Epoch 227/2000
301/318 [============================>..] - ETA: 0s - loss: 0.2134 - mse: 0.2134
- rmse: 0.4620 - mae: 0.2685 - mape: 8.4223
Epoch 227: val_loss did not improve from 0.20371
318/318 [==============================] - 1s 3ms/step - loss: 0.2137 - mse:
0.2137 - rmse: 0.4623 - mae: 0.2684 - mape: 8.4267 - val_loss: 0.2098 - val_mse:
0.2098 - val_rmse: 0.4580 - val_mae: 0.2668 - val_mape: 8.3022 - lr: 0.0010
Epoch 228/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.2166 - mse: 0.2166
- rmse: 0.4654 - mae: 0.2679 - mape: 8.3918
Epoch 228: val_loss improved from 0.20371 to 0.20288, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2150 - mse:
0.2150 - rmse: 0.4637 - mae: 0.2674 - mape: 8.3753 - val_loss: 0.2029 - val_mse:
0.2029 - val_rmse: 0.4504 - val_mae: 0.2577 - val_mape: 8.0557 - lr: 0.0010
Epoch 229/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.2117 - mse: 0.2117
- rmse: 0.4601 - mae: 0.2653 - mape: 8.3118
Epoch 229: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2115 - mse:
0.2115 - rmse: 0.4599 - mae: 0.2653 - mape: 8.3116 - val_loss: 0.2102 - val_mse:
0.2102 - val_rmse: 0.4585 - val_mae: 0.2712 - val_mape: 8.5250 - lr: 0.0010
Epoch 230/2000
313/318 [============================>.] - ETA: 0s - loss: 0.2120 - mse: 0.2120
- rmse: 0.4604 - mae: 0.2656 - mape: 8.3254
Epoch 230: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2123 - mse:
0.2123 - rmse: 0.4608 - mae: 0.2657 - mape: 8.3274 - val_loss: 0.2056 - val_mse:
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0.2056 - val_rmse: 0.4535 - val_mae: 0.2605 - val_mape: 8.1156 - lr: 0.0010
Epoch 231/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.2104 - mse: 0.2104
- rmse: 0.4587 - mae: 0.2668 - mape: 8.3622
Epoch 231: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2127 - mse:
0.2127 - rmse: 0.4612 - mae: 0.2671 - mape: 8.3599 - val_loss: 0.2036 - val_mse:
0.2036 - val_rmse: 0.4512 - val_mae: 0.2526 - val_mape: 7.8772 - lr: 0.0010
Epoch 232/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.2113 - mse: 0.2113
- rmse: 0.4597 - mae: 0.2656 - mape: 8.3375
Epoch 232: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2132 - mse:
0.2132 - rmse: 0.4617 - mae: 0.2667 - mape: 8.3510 - val_loss: 0.2057 - val_mse:
0.2057 - val_rmse: 0.4536 - val_mae: 0.2609 - val_mape: 8.0202 - lr: 0.0010
Epoch 233/2000
315/318 [============================>.] - ETA: 0s - loss: 0.2144 - mse: 0.2144
- rmse: 0.4630 - mae: 0.2706 - mape: 8.5109
Epoch 233: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2146 - mse:
0.2146 - rmse: 0.4632 - mae: 0.2708 - mape: 8.5177 - val_loss: 0.2078 - val_mse:
0.2078 - val_rmse: 0.4559 - val_mae: 0.2621 - val_mape: 8.1333 - lr: 0.0010
Epoch 234/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.2144 - mse: 0.2144
- rmse: 0.4630 - mae: 0.2669 - mape: 8.3631
Epoch 234: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2146 - mse:
0.2146 - rmse: 0.4632 - mae: 0.2665 - mape: 8.3482 - val_loss: 0.2053 - val_mse:
0.2053 - val_rmse: 0.4531 - val_mae: 0.2636 - val_mape: 8.2527 - lr: 0.0010
Epoch 235/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.2119 - mse: 0.2119
- rmse: 0.4603 - mae: 0.2655 - mape: 8.3209
Epoch 235: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2118 - mse:
0.2118 - rmse: 0.4602 - mae: 0.2649 - mape: 8.2929 - val_loss: 0.2054 - val_mse:
0.2054 - val_rmse: 0.4532 - val_mae: 0.2583 - val_mape: 8.1815 - lr: 0.0010
Epoch 236/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.2117 - mse: 0.2117
- rmse: 0.4601 - mae: 0.2668 - mape: 8.3805
Epoch 236: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2121 - mse:
0.2121 - rmse: 0.4605 - mae: 0.2668 - mape: 8.3841 - val_loss: 0.2169 - val_mse:
0.2169 - val_rmse: 0.4657 - val_mae: 0.2719 - val_mape: 8.7714 - lr: 0.0010
Epoch 237/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.2119 - mse: 0.2119
- rmse: 0.4603 - mae: 0.2654 - mape: 8.3299
Epoch 237: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2125 - mse:

0.2125 - rmse: 0.4610 - mae: 0.2657 - mape: 8.3283 - val_loss: 0.2182 - val_mse:
0.2182 - val_rmse: 0.4671 - val_mae: 0.2702 - val_mape: 8.7543 - lr: 0.0010
Epoch 238/2000
314/318 [============================>.] - ETA: 0s - loss: 0.2144 - mse: 0.2144
- rmse: 0.4631 - mae: 0.2686 - mape: 8.4211
Epoch 238: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2145 - mse:
0.2145 - rmse: 0.4632 - mae: 0.2688 - mape: 8.4314 - val_loss: 0.2102 - val_mse:
0.2102 - val_rmse: 0.4585 - val_mae: 0.2619 - val_mape: 8.1586 - lr: 0.0010
Epoch 239/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.2128 - mse: 0.2128
- rmse: 0.4613 - mae: 0.2667 - mape: 8.3749
Epoch 239: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2148 - mse:
0.2148 - rmse: 0.4634 - mae: 0.2682 - mape: 8.4142 - val_loss: 0.2097 - val_mse:
0.2097 - val_rmse: 0.4580 - val_mae: 0.2720 - val_mape: 8.5999 - lr: 0.0010
Epoch 240/2000
312/318 [============================>.] - ETA: 0s - loss: 0.2118 - mse: 0.2118
- rmse: 0.4602 - mae: 0.2649 - mape: 8.2824
Epoch 240: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2114 - mse:
0.2114 - rmse: 0.4598 - mae: 0.2651 - mape: 8.2908 - val_loss: 0.2359 - val_mse:
0.2359 - val_rmse: 0.4857 - val_mae: 0.2852 - val_mape: 8.5418 - lr: 0.0010
Epoch 241/2000
292/318 [==========================>…] - ETA: 0s - loss: 0.2156 - mse: 0.2156
- rmse: 0.4643 - mae: 0.2720 - mape: 8.5650
Epoch 241: val_loss did not improve from 0.20288
318/318 [==============================] - 1s 3ms/step - loss: 0.2165 - mse:
0.2165 - rmse: 0.4653 - mae: 0.2722 - mape: 8.5574 - val_loss: 0.2054 - val_mse:
0.2054 - val_rmse: 0.4532 - val_mae: 0.2560 - val_mape: 7.9862 - lr: 0.0010
Epoch 242/2000
308/318 [============================>.] - ETA: 0s - loss: 0.2104 - mse: 0.2104
- rmse: 0.4587 - mae: 0.2645 - mape: 8.2823
Epoch 242: val_loss improved from 0.20288 to 0.20210, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2116 - mse:
0.2116 - rmse: 0.4600 - mae: 0.2652 - mape: 8.3021 - val_loss: 0.2021 - val_mse:
0.2021 - val_rmse: 0.4496 - val_mae: 0.2559 - val_mape: 8.0624 - lr: 0.0010
Epoch 243/2000
309/318 [===========================>.] - ETA: 0s - loss: 0.2138 - mse: 0.2138
- rmse: 0.4624 - mae: 0.2677 - mape: 8.3928
Epoch 243: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2130 - mse:
0.2130 - rmse: 0.4615 - mae: 0.2674 - mape: 8.3814 - val_loss: 0.2149 - val_mse:
0.2149 - val_rmse: 0.4635 - val_mae: 0.2676 - val_mape: 8.5589 - lr: 0.0010
Epoch 244/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.2180 - mse: 0.2180
- rmse: 0.4669 - mae: 0.2734 - mape: 8.6100

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Epoch 244: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2173 - mse:
0.2173 - rmse: 0.4661 - mae: 0.2732 - mape: 8.5906 - val_loss: 0.2033 - val_mse:
0.2033 - val_rmse: 0.4509 - val_mae: 0.2522 - val_mape: 7.7852 - lr: 0.0010
Epoch 245/2000
311/318 [=============================>.] - ETA: 0s - loss: 0.2137 - mse: 0.2137
- rmse: 0.4623 - mae: 0.2675 - mape: 8.3971
Epoch 245: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2136 - mse:
0.2136 - rmse: 0.4621 - mae: 0.2678 - mape: 8.4008 - val_loss: 0.2052 - val_mse:
0.2052 - val_rmse: 0.4529 - val_mae: 0.2548 - val_mape: 7.8385 - lr: 0.0010
Epoch 246/2000
311/318 [=============================>.] - ETA: 0s - loss: 0.2102 - mse: 0.2102
- rmse: 0.4585 - mae: 0.2644 - mape: 8.2978
Epoch 246: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2099 - mse:
0.2099 - rmse: 0.4582 - mae: 0.2640 - mape: 8.2795 - val_loss: 0.2079 - val_mse:
0.2079 - val_rmse: 0.4560 - val_mae: 0.2608 - val_mape: 8.1005 - lr: 0.0010
Epoch 247/2000
295/318 [===========================>…] - ETA: 0s - loss: 0.2111 - mse: 0.2111
- rmse: 0.4595 - mae: 0.2637 - mape: 8.2717
Epoch 247: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2106 - mse:
0.2106 - rmse: 0.4589 - mae: 0.2635 - mape: 8.2573 - val_loss: 0.2292 - val_mse:
0.2292 - val_rmse: 0.4787 - val_mae: 0.2790 - val_mape: 9.0501 - lr: 0.0010
Epoch 248/2000
311/318 [=============================>.] - ETA: 0s - loss: 0.2116 - mse: 0.2116
- rmse: 0.4600 - mae: 0.2647 - mape: 8.2767
Epoch 248: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2112 - mse:
0.2112 - rmse: 0.4596 - mae: 0.2644 - mape: 8.2714 - val_loss: 0.2076 - val_mse:
0.2076 - val_rmse: 0.4557 - val_mae: 0.2689 - val_mape: 8.5529 - lr: 0.0010
Epoch 249/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.2215 - mse: 0.2215
- rmse: 0.4706 - mae: 0.2753 - mape: 8.6833
Epoch 249: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2220 - mse:
0.2220 - rmse: 0.4712 - mae: 0.2756 - mape: 8.6857 - val_loss: 0.2324 - val_mse:
0.2324 - val_rmse: 0.4821 - val_mae: 0.2726 - val_mape: 8.4224 - lr: 0.0010
Epoch 250/2000
300/318 [============================>..] - ETA: 0s - loss: 0.2143 - mse: 0.2143
- rmse: 0.4629 - mae: 0.2675 - mape: 8.3596
Epoch 250: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2130 - mse:
0.2130 - rmse: 0.4615 - mae: 0.2665 - mape: 8.3422 - val_loss: 0.2066 - val_mse:
0.2066 - val_rmse: 0.4546 - val_mae: 0.2562 - val_mape: 8.0104 - lr: 0.0010
Epoch 251/2000
292/318 [==========================>…] - ETA: 0s - loss: 0.2096 - mse: 0.2096
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- rmse: 0.4578 - mae: 0.2622 - mape: 8.2290
Epoch 251: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2109 - mse:
0.2109 - rmse: 0.4593 - mae: 0.2634 - mape: 8.2547 - val_loss: 0.2059 - val_mse:
0.2059 - val_rmse: 0.4537 - val_mae: 0.2618 - val_mape: 8.2410 - lr: 0.0010
Epoch 252/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.2097 - mse: 0.2097
- rmse: 0.4580 - mae: 0.2631 - mape: 8.2484
Epoch 252: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2109 - mse:
0.2109 - rmse: 0.4593 - mae: 0.2638 - mape: 8.2697 - val_loss: 0.2078 - val_mse:
0.2078 - val_rmse: 0.4558 - val_mae: 0.2662 - val_mape: 8.5434 - lr: 0.0010
Epoch 253/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.2120 - mse: 0.2120
- rmse: 0.4604 - mae: 0.2652 - mape: 8.3166
Epoch 253: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2119 - mse:
0.2119 - rmse: 0.4603 - mae: 0.2655 - mape: 8.3213 - val_loss: 0.2076 - val_mse:
0.2076 - val_rmse: 0.4556 - val_mae: 0.2635 - val_mape: 8.3624 - lr: 0.0010
Epoch 254/2000
318/318 [==============================] - ETA: 0s - loss: 0.2172 - mse: 0.2172
- rmse: 0.4661 - mae: 0.2704 - mape: 8.4845
Epoch 254: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2172 - mse:
0.2172 - rmse: 0.4661 - mae: 0.2704 - mape: 8.4845 - val_loss: 0.2101 - val_mse:
0.2101 - val_rmse: 0.4584 - val_mae: 0.2565 - val_mape: 7.7673 - lr: 0.0010
Epoch 255/2000
303/318 [============================>..] - ETA: 0s - loss: 0.2141 - mse: 0.2141
- rmse: 0.4627 - mae: 0.2670 - mape: 8.3693
Epoch 255: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2126 - mse:
0.2126 - rmse: 0.4611 - mae: 0.2663 - mape: 8.3472 - val_loss: 0.2085 - val_mse:
0.2085 - val_rmse: 0.4566 - val_mae: 0.2623 - val_mape: 8.0564 - lr: 0.0010
Epoch 256/2000
288/318 [==========================>…] - ETA: 0s - loss: 0.2161 - mse: 0.2161
- rmse: 0.4649 - mae: 0.2678 - mape: 8.3946
Epoch 256: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2136 - mse:
0.2136 - rmse: 0.4622 - mae: 0.2664 - mape: 8.3442 - val_loss: 0.2082 - val_mse:
0.2082 - val_rmse: 0.4563 - val_mae: 0.2675 - val_mape: 8.4335 - lr: 0.0010
Epoch 257/2000
286/318 [=========================>…] - ETA: 0s - loss: 0.2117 - mse: 0.2117
- rmse: 0.4601 - mae: 0.2654 - mape: 8.3369
Epoch 257: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2097 - mse:
0.2097 - rmse: 0.4579 - mae: 0.2649 - mape: 8.3127 - val_loss: 0.2064 - val_mse:
0.2064 - val_rmse: 0.4543 - val_mae: 0.2576 - val_mape: 7.9908 - lr: 0.0010
Epoch 258/2000

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315/318 [============================>.] - ETA: 0s - loss: 0.2115 - mse: 0.2115
- rmse: 0.4599 - mae: 0.2646 - mape: 8.2764
Epoch 258: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2114 - mse:
0.2114 - rmse: 0.4598 - mae: 0.2646 - mape: 8.2860 - val_loss: 0.2143 - val_mse:
0.2143 - val_rmse: 0.4630 - val_mae: 0.2643 - val_mape: 8.5172 - lr: 0.0010
Epoch 259/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.2146 - mse: 0.2146
- rmse: 0.4633 - mae: 0.2677 - mape: 8.4122
Epoch 259: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2129 - mse:
0.2129 - rmse: 0.4614 - mae: 0.2666 - mape: 8.3750 - val_loss: 0.2038 - val_mse:
0.2038 - val_rmse: 0.4514 - val_mae: 0.2556 - val_mape: 7.9891 - lr: 0.0010
Epoch 260/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.2086 - mse: 0.2086
- rmse: 0.4568 - mae: 0.2618 - mape: 8.2214
Epoch 260: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2098 - mse:
0.2098 - rmse: 0.4581 - mae: 0.2632 - mape: 8.2546 - val_loss: 0.2097 - val_mse:
0.2097 - val_rmse: 0.4579 - val_mae: 0.2587 - val_mape: 7.8821 - lr: 0.0010
Epoch 261/2000
311/318 [============================>.] - ETA: 0s - loss: 0.2133 - mse: 0.2133
- rmse: 0.4619 - mae: 0.2668 - mape: 8.3517
Epoch 261: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2144 - mse:
0.2144 - rmse: 0.4630 - mae: 0.2672 - mape: 8.3683 - val_loss: 0.2172 - val_mse:
0.2172 - val_rmse: 0.4661 - val_mae: 0.2730 - val_mape: 8.7735 - lr: 0.0010
Epoch 262/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.2098 - mse: 0.2098
- rmse: 0.4580 - mae: 0.2640 - mape: 8.2806
Epoch 262: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2119 - mse:
0.2119 - rmse: 0.4603 - mae: 0.2648 - mape: 8.2968 - val_loss: 0.2048 - val_mse:
0.2048 - val_rmse: 0.4525 - val_mae: 0.2630 - val_mape: 8.4876 - lr: 0.0010
Epoch 263/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.2127 - mse: 0.2127
- rmse: 0.4612 - mae: 0.2656 - mape: 8.3379
Epoch 263: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2123 - mse:
0.2123 - rmse: 0.4607 - mae: 0.2651 - mape: 8.3205 - val_loss: 0.2281 - val_mse:
0.2281 - val_rmse: 0.4776 - val_mae: 0.2835 - val_mape: 9.2392 - lr: 0.0010
Epoch 264/2000
308/318 [============================>.] - ETA: 0s - loss: 0.2100 - mse: 0.2100
- rmse: 0.4582 - mae: 0.2646 - mape: 8.2935
Epoch 264: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2106 - mse:
0.2106 - rmse: 0.4590 - mae: 0.2650 - mape: 8.3175 - val_loss: 0.2042 - val_mse:
0.2042 - val_rmse: 0.4518 - val_mae: 0.2562 - val_mape: 8.0053 - lr: 0.0010
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Epoch 265/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.2107 - mse: 0.2107
- rmse: 0.4590 - mae: 0.2649 - mape: 8.3089
Epoch 265: val_loss did not improve from 0.20210
318/318 [============================] - 1s 3ms/step - loss: 0.2111 - mse:
0.2111 - rmse: 0.4594 - mae: 0.2652 - mape: 8.3149 - val_loss: 0.2106 - val_mse:
0.2106 - val_rmse: 0.4589 - val_mae: 0.2663 - val_mape: 8.2758 - lr: 0.0010
Epoch 266/2000
313/318 [===========================>.] - ETA: 0s - loss: 0.2097 - mse: 0.2097
- rmse: 0.4579 - mae: 0.2634 - mape: 8.2461
Epoch 266: val_loss did not improve from 0.20210
318/318 [============================] - 1s 3ms/step - loss: 0.2098 - mse:
0.2098 - rmse: 0.4580 - mae: 0.2636 - mape: 8.2539 - val_loss: 0.2032 - val_mse:
0.2032 - val_rmse: 0.4508 - val_mae: 0.2569 - val_mape: 8.0031 - lr: 0.0010
Epoch 267/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.2090 - mse: 0.2090
- rmse: 0.4571 - mae: 0.2628 - mape: 8.2324
Epoch 267: val_loss did not improve from 0.20210
318/318 [============================] - 1s 3ms/step - loss: 0.2097 - mse:
0.2097 - rmse: 0.4580 - mae: 0.2632 - mape: 8.2448 - val_loss: 0.2037 - val_mse:
0.2037 - val_rmse: 0.4513 - val_mae: 0.2549 - val_mape: 7.8569 - lr: 0.0010
Epoch 268/2000
308/318 [===========================>.] - ETA: 0s - loss: 0.2109 - mse: 0.2109
- rmse: 0.4592 - mae: 0.2664 - mape: 8.3554
Epoch 268: val_loss did not improve from 0.20210
318/318 [============================] - 1s 3ms/step - loss: 0.2119 - mse:
0.2119 - rmse: 0.4604 - mae: 0.2664 - mape: 8.3515 - val_loss: 0.2100 - val_mse:
0.2100 - val_rmse: 0.4582 - val_mae: 0.2584 - val_mape: 7.9608 - lr: 0.0010
Epoch 269/2000
315/318 [===========================>.] - ETA: 0s - loss: 0.2145 - mse: 0.2145
- rmse: 0.4632 - mae: 0.2692 - mape: 8.4482
Epoch 269: val_loss did not improve from 0.20210
318/318 [============================] - 1s 3ms/step - loss: 0.2157 - mse:
0.2157 - rmse: 0.4644 - mae: 0.2698 - mape: 8.4698 - val_loss: 0.2044 - val_mse:
0.2044 - val_rmse: 0.4521 - val_mae: 0.2652 - val_mape: 8.3286 - lr: 0.0010
Epoch 270/2000
318/318 [============================] - ETA: 0s - loss: 0.2109 - mse: 0.2109
- rmse: 0.4593 - mae: 0.2654 - mape: 8.3155
Epoch 270: val_loss did not improve from 0.20210
318/318 [============================] - 1s 3ms/step - loss: 0.2109 - mse:
0.2109 - rmse: 0.4593 - mae: 0.2654 - mape: 8.3155 - val_loss: 0.2024 - val_mse:
0.2024 - val_rmse: 0.4499 - val_mae: 0.2562 - val_mape: 8.0136 - lr: 0.0010
Epoch 271/2000
311/318 [===========================>.] - ETA: 0s - loss: 0.2089 - mse: 0.2089
- rmse: 0.4571 - mae: 0.2637 - mape: 8.2606
Epoch 271: val_loss did not improve from 0.20210
318/318 [============================] - 1s 3ms/step - loss: 0.2092 - mse:
0.2092 - rmse: 0.4574 - mae: 0.2639 - mape: 8.2643 - val_loss: 0.2073 - val_mse:
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0.2073 - val_rmse: 0.4553 - val_mae: 0.2620 - val_mape: 8.3214 - lr: 0.0010
Epoch 272/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.2149 - mse: 0.2149
- rmse: 0.4636 - mae: 0.2675 - mape: 8.4138
Epoch 272: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2143 - mse:
0.2143 - rmse: 0.4629 - mae: 0.2675 - mape: 8.4156 - val_loss: 0.2355 - val_mse:
0.2355 - val_rmse: 0.4853 - val_mae: 0.2829 - val_mape: 8.7497 - lr: 0.0010
Epoch 273/2000
314/318 [===========================>.] - ETA: 0s - loss: 0.2102 - mse: 0.2102
- rmse: 0.4585 - mae: 0.2647 - mape: 8.3109
Epoch 273: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2101 - mse:
0.2101 - rmse: 0.4584 - mae: 0.2644 - mape: 8.3042 - val_loss: 0.2049 - val_mse:
0.2049 - val_rmse: 0.4527 - val_mae: 0.2579 - val_mape: 7.8663 - lr: 0.0010
Epoch 274/2000
299/318 [==========================>..] - ETA: 0s - loss: 0.2153 - mse: 0.2153
- rmse: 0.4640 - mae: 0.2694 - mape: 8.4199
Epoch 274: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2151 - mse:
0.2151 - rmse: 0.4638 - mae: 0.2690 - mape: 8.4158 - val_loss: 0.2238 - val_mse:
0.2238 - val_rmse: 0.4731 - val_mae: 0.2693 - val_mape: 8.4141 - lr: 0.0010
Epoch 275/2000
297/318 [==========================>..] - ETA: 0s - loss: 0.2147 - mse: 0.2147
- rmse: 0.4633 - mae: 0.2678 - mape: 8.3875
Epoch 275: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2134 - mse:
0.2134 - rmse: 0.4620 - mae: 0.2670 - mape: 8.3723 - val_loss: 0.2084 - val_mse:
0.2084 - val_rmse: 0.4565 - val_mae: 0.2583 - val_mape: 8.1395 - lr: 0.0010
Epoch 276/2000
313/318 [===========================>.] - ETA: 0s - loss: 0.2078 - mse: 0.2078
- rmse: 0.4558 - mae: 0.2619 - mape: 8.2038
Epoch 276: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2079 - mse:
0.2079 - rmse: 0.4559 - mae: 0.2620 - mape: 8.2075 - val_loss: 0.2067 - val_mse:
0.2067 - val_rmse: 0.4546 - val_mae: 0.2608 - val_mape: 8.2252 - lr: 0.0010
Epoch 277/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.2055 - mse: 0.2055
- rmse: 0.4533 - mae: 0.2598 - mape: 8.1279
Epoch 277: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2085 - mse:
0.2085 - rmse: 0.4567 - mae: 0.2619 - mape: 8.1982 - val_loss: 0.2135 - val_mse:
0.2135 - val_rmse: 0.4620 - val_mae: 0.2662 - val_mape: 8.1728 - lr: 0.0010
Epoch 278/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.2118 - mse: 0.2118
- rmse: 0.4602 - mae: 0.2641 - mape: 8.2832
Epoch 278: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2113 - mse:

0.2113 - rmse: 0.4597 - mae: 0.2639 - mape: 8.2627 - val_loss: 0.2127 - val_mse:
0.2127 - val_rmse: 0.4612 - val_mae: 0.2747 - val_mape: 8.9934 - lr: 0.0010
Epoch 279/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.2154 - mse: 0.2154
- rmse: 0.4641 - mae: 0.2691 - mape: 8.4596
Epoch 279: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2130 - mse:
0.2130 - rmse: 0.4616 - mae: 0.2675 - mape: 8.4058 - val_loss: 0.2060 - val_mse:
0.2060 - val_rmse: 0.4539 - val_mae: 0.2662 - val_mape: 8.5170 - lr: 0.0010
Epoch 280/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.2087 - mse: 0.2087
- rmse: 0.4568 - mae: 0.2629 - mape: 8.2320
Epoch 280: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2089 - mse:
0.2089 - rmse: 0.4571 - mae: 0.2634 - mape: 8.2466 - val_loss: 0.2077 - val_mse:
0.2077 - val_rmse: 0.4558 - val_mae: 0.2629 - val_mape: 8.0921 - lr: 0.0010
Epoch 281/2000
290/318 [==========================>...] - ETA: 0s - loss: 0.2071 - mse: 0.2071
- rmse: 0.4551 - mae: 0.2660 - mape: 8.3488
Epoch 281: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2099 - mse:
0.2099 - rmse: 0.4581 - mae: 0.2662 - mape: 8.3528 - val_loss: 0.2024 - val_mse:
0.2024 - val_rmse: 0.4499 - val_mae: 0.2565 - val_mape: 7.8678 - lr: 0.0010
Epoch 282/2000
318/318 [==============================] - ETA: 0s - loss: 0.2068 - mse: 0.2068
- rmse: 0.4548 - mae: 0.2622 - mape: 8.2068
Epoch 282: val_loss did not improve from 0.20210
318/318 [==============================] - 1s 3ms/step - loss: 0.2068 - mse:
0.2068 - rmse: 0.4548 - mae: 0.2622 - mape: 8.2068 - val_loss: 0.2173 - val_mse:
0.2173 - val_rmse: 0.4662 - val_mae: 0.2728 - val_mape: 8.8410 - lr: 0.0010
Epoch 283/2000
304/318 [============================>..] - ETA: 0s - loss: 0.1983 - mse: 0.1983
- rmse: 0.4454 - mae: 0.2530 - mape: 7.9363
Epoch 283: val_loss improved from 0.20210 to 0.19845, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.2002 - mse:
0.2002 - rmse: 0.4474 - mae: 0.2538 - mape: 7.9386 - val_loss: 0.1984 - val_mse:
0.1984 - val_rmse: 0.4455 - val_mae: 0.2527 - val_mape: 7.8962 - lr: 1.0000e-04
Epoch 284/2000
291/318 [==========================>...] - ETA: 0s - loss: 0.1979 - mse: 0.1979
- rmse: 0.4449 - mae: 0.2515 - mape: 7.8599
Epoch 284: val_loss did not improve from 0.19845
318/318 [==============================] - 1s 3ms/step - loss: 0.1990 - mse:
0.1990 - rmse: 0.4461 - mae: 0.2525 - mape: 7.8843 - val_loss: 0.2008 - val_mse:
0.2008 - val_rmse: 0.4481 - val_mae: 0.2582 - val_mape: 8.1072 - lr: 1.0000e-04
Epoch 285/2000
290/318 [==========================>...] - ETA: 0s - loss: 0.2009 - mse: 0.2009
- rmse: 0.4482 - mae: 0.2536 - mape: 7.8885

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Epoch 285: val_loss did not improve from 0.19845
318/318 [==============================] - 1s 3ms/step - loss: 0.1987 - mse:
0.1987 - rmse: 0.4458 - mae: 0.2524 - mape: 7.8842 - val_loss: 0.1992 - val_mse:
0.1992 - val_rmse: 0.4463 - val_mae: 0.2518 - val_mape: 7.7665 - lr: 1.0000e-04
Epoch 286/2000
317/318 [=============================>.] - ETA: 0s - loss: 0.1985 - mse: 0.1985
- rmse: 0.4455 - mae: 0.2521 - mape: 7.8625
Epoch 286: val_loss improved from 0.19845 to 0.19780, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1986 - mse:
0.1986 - rmse: 0.4457 - mae: 0.2522 - mape: 7.8649 - val_loss: 0.1978 - val_mse:
0.1978 - val_rmse: 0.4447 - val_mae: 0.2505 - val_mape: 7.8380 - lr: 1.0000e-04
Epoch 287/2000
300/318 [============================>..] - ETA: 0s - loss: 0.1983 - mse: 0.1983
- rmse: 0.4453 - mae: 0.2513 - mape: 7.8611
Epoch 287: val_loss improved from 0.19780 to 0.19706, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1986 - mse:
0.1986 - rmse: 0.4456 - mae: 0.2518 - mape: 7.8658 - val_loss: 0.1971 - val_mse:
0.1971 - val_rmse: 0.4439 - val_mae: 0.2508 - val_mape: 7.8327 - lr: 1.0000e-04
Epoch 288/2000
317/318 [=============================>.] - ETA: 0s - loss: 0.1978 - mse: 0.1978
- rmse: 0.4447 - mae: 0.2519 - mape: 7.8707
Epoch 288: val_loss improved from 0.19706 to 0.19685, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1982 - mse:
0.1982 - rmse: 0.4452 - mae: 0.2520 - mape: 7.8721 - val_loss: 0.1968 - val_mse:
0.1968 - val_rmse: 0.4437 - val_mae: 0.2511 - val_mape: 7.8566 - lr: 1.0000e-04
Epoch 289/2000
289/318 [==========================>…] - ETA: 0s - loss: 0.1961 - mse: 0.1961
- rmse: 0.4428 - mae: 0.2515 - mape: 7.8469
Epoch 289: val_loss did not improve from 0.19685
318/318 [==============================] - 1s 3ms/step - loss: 0.1981 - mse:
0.1981 - rmse: 0.4451 - mae: 0.2521 - mape: 7.8802 - val_loss: 0.1973 - val_mse:
0.1973 - val_rmse: 0.4442 - val_mae: 0.2498 - val_mape: 7.8014 - lr: 1.0000e-04
Epoch 290/2000
307/318 [============================>..] - ETA: 0s - loss: 0.1961 - mse: 0.1961
- rmse: 0.4428 - mae: 0.2503 - mape: 7.8200
Epoch 290: val_loss improved from 0.19685 to 0.19665, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1977 - mse:
0.1977 - rmse: 0.4446 - mae: 0.2513 - mape: 7.8503 - val_loss: 0.1967 - val_mse:
0.1967 - val_rmse: 0.4435 - val_mae: 0.2508 - val_mape: 7.8432 - lr: 1.0000e-04
Epoch 291/2000
316/318 [=============================>.] - ETA: 0s - loss: 0.1981 - mse: 0.1981
- rmse: 0.4450 - mae: 0.2519 - mape: 7.8737
Epoch 291: val_loss improved from 0.19665 to 0.19662, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
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318/318 [==============================] - 1s 3ms/step - loss: 0.1978 - mse:
0.1978 - rmse: 0.4448 - mae: 0.2518 - mape: 7.8712 - val_loss: 0.1966 - val_mse:
0.1966 - val_rmse: 0.4434 - val_mae: 0.2494 - val_mape: 7.7400 - lr: 1.0000e-04
Epoch 292/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.1979 - mse: 0.1979
- rmse: 0.4448 - mae: 0.2513 - mape: 7.8548
Epoch 292: val_loss did not improve from 0.19662
318/318 [==============================] - 1s 3ms/step - loss: 0.1971 - mse:
0.1971 - rmse: 0.4440 - mae: 0.2512 - mape: 7.8424 - val_loss: 0.1978 - val_mse:
0.1978 - val_rmse: 0.4448 - val_mae: 0.2531 - val_mape: 7.9523 - lr: 1.0000e-04
Epoch 293/2000
312/318 [===========================>.] - ETA: 0s - loss: 0.1983 - mse: 0.1983
- rmse: 0.4453 - mae: 0.2517 - mape: 7.8654
Epoch 293: val_loss improved from 0.19662 to 0.19661, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1981 - mse:
0.1981 - rmse: 0.4451 - mae: 0.2515 - mape: 7.8580 - val_loss: 0.1966 - val_mse:
0.1966 - val_rmse: 0.4434 - val_mae: 0.2529 - val_mape: 7.9109 - lr: 1.0000e-04
Epoch 294/2000
313/318 [===========================>.] - ETA: 0s - loss: 0.1967 - mse: 0.1967
- rmse: 0.4436 - mae: 0.2513 - mape: 7.8542
Epoch 294: val_loss did not improve from 0.19661
318/318 [==============================] - 1s 3ms/step - loss: 0.1972 - mse:
0.1972 - rmse: 0.4441 - mae: 0.2514 - mape: 7.8572 - val_loss: 0.1981 - val_mse:
0.1981 - val_rmse: 0.4451 - val_mae: 0.2506 - val_mape: 7.8701 - lr: 1.0000e-04
Epoch 295/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1989 - mse: 0.1989
- rmse: 0.4460 - mae: 0.2520 - mape: 7.8775
Epoch 295: val_loss did not improve from 0.19661
318/318 [==============================] - 1s 3ms/step - loss: 0.1974 - mse:
0.1974 - rmse: 0.4443 - mae: 0.2516 - mape: 7.8758 - val_loss: 0.1976 - val_mse:
0.1976 - val_rmse: 0.4445 - val_mae: 0.2508 - val_mape: 7.8724 - lr: 1.0000e-04
Epoch 296/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1939 - mse: 0.1939
- rmse: 0.4404 - mae: 0.2493 - mape: 7.7883
Epoch 296: val_loss improved from 0.19661 to 0.19619, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1973 - mse:
0.1973 - rmse: 0.4442 - mae: 0.2507 - mape: 7.8257 - val_loss: 0.1962 - val_mse:
0.1962 - val_rmse: 0.4429 - val_mae: 0.2519 - val_mape: 7.9003 - lr: 1.0000e-04
Epoch 297/2000
312/318 [===========================>.] - ETA: 0s - loss: 0.1967 - mse: 0.1967
- rmse: 0.4436 - mae: 0.2513 - mape: 7.8567
Epoch 297: val_loss improved from 0.19619 to 0.19599, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1969 - mse:
0.1969 - rmse: 0.4437 - mae: 0.2514 - mape: 7.8594 - val_loss: 0.1960 - val_mse:
0.1960 - val_rmse: 0.4427 - val_mae: 0.2495 - val_mape: 7.7901 - lr: 1.0000e-04
```

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Epoch 298/2000
306/318 [============================>..] - ETA: 0s - loss: 0.1990 - mse: 0.1990
- rmse: 0.4461 - mae: 0.2520 - mape: 7.8749
Epoch 298: val_loss did not improve from 0.19599
318/318 [==============================] - 1s 3ms/step - loss: 0.1977 - mse:
0.1977 - rmse: 0.4447 - mae: 0.2514 - mape: 7.8566 - val_loss: 0.1969 - val_mse:
0.1969 - val_rmse: 0.4437 - val_mae: 0.2505 - val_mape: 7.8654 - lr: 1.0000e-04
Epoch 299/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.1965 - mse: 0.1965
- rmse: 0.4433 - mae: 0.2507 - mape: 7.8207
Epoch 299: val_loss did not improve from 0.19599
318/318 [==============================] - 1s 3ms/step - loss: 0.1971 - mse:
0.1971 - rmse: 0.4439 - mae: 0.2510 - mape: 7.8378 - val_loss: 0.2030 - val_mse:
0.2030 - val_rmse: 0.4506 - val_mae: 0.2583 - val_mape: 8.1639 - lr: 1.0000e-04
Epoch 300/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.1978 - mse: 0.1978
- rmse: 0.4447 - mae: 0.2514 - mape: 7.8717
Epoch 300: val_loss improved from 0.19599 to 0.19586, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1970 - mse:
0.1970 - rmse: 0.4439 - mae: 0.2511 - mape: 7.8569 - val_loss: 0.1959 - val_mse:
0.1959 - val_rmse: 0.4426 - val_mae: 0.2516 - val_mape: 7.8685 - lr: 1.0000e-04
Epoch 301/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.1971 - mse: 0.1971
- rmse: 0.4440 - mae: 0.2517 - mape: 7.8616
Epoch 301: val_loss did not improve from 0.19586
318/318 [==============================] - 1s 3ms/step - loss: 0.1971 - mse:
0.1971 - rmse: 0.4440 - mae: 0.2517 - mape: 7.8663 - val_loss: 0.1960 - val_mse:
0.1960 - val_rmse: 0.4427 - val_mae: 0.2500 - val_mape: 7.8588 - lr: 1.0000e-04
Epoch 302/2000
311/318 [=============================>.] - ETA: 0s - loss: 0.1966 - mse: 0.1966
- rmse: 0.4434 - mae: 0.2503 - mape: 7.8318
Epoch 302: val_loss did not improve from 0.19586
318/318 [==============================] - 1s 3ms/step - loss: 0.1966 - mse:
0.1966 - rmse: 0.4434 - mae: 0.2502 - mape: 7.8298 - val_loss: 0.1961 - val_mse:
0.1961 - val_rmse: 0.4428 - val_mae: 0.2490 - val_mape: 7.7262 - lr: 1.0000e-04
Epoch 303/2000
306/318 [============================>..] - ETA: 0s - loss: 0.1967 - mse: 0.1967
- rmse: 0.4435 - mae: 0.2513 - mape: 7.8506
Epoch 303: val_loss improved from 0.19586 to 0.19550, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1965 - mse:
0.1965 - rmse: 0.4433 - mae: 0.2511 - mape: 7.8495 - val_loss: 0.1955 - val_mse:
0.1955 - val_rmse: 0.4422 - val_mae: 0.2486 - val_mape: 7.7295 - lr: 1.0000e-04
Epoch 304/2000
302/318 [============================>..] - ETA: 0s - loss: 0.1961 - mse: 0.1961
- rmse: 0.4428 - mae: 0.2505 - mape: 7.8123
Epoch 304: val_loss did not improve from 0.19550
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318/318 [==============================] - 1s 3ms/step - loss: 0.1968 - mse:
0.1968 - rmse: 0.4436 - mae: 0.2507 - mape: 7.8255 - val_loss: 0.1964 - val_mse:
0.1964 - val_rmse: 0.4431 - val_mae: 0.2515 - val_mape: 7.9487 - lr: 1.0000e-04
Epoch 305/2000
295/318 [==========================>.] - ETA: 0s - loss: 0.1963 - mse: 0.1963
- rmse: 0.4431 - mae: 0.2499 - mape: 7.8178
Epoch 305: val_loss did not improve from 0.19550
318/318 [==============================] - 1s 3ms/step - loss: 0.1970 - mse:
0.1970 - rmse: 0.4438 - mae: 0.2506 - mape: 7.8365 - val_loss: 0.1975 - val_mse:
0.1975 - val_rmse: 0.4444 - val_mae: 0.2514 - val_mape: 7.9098 - lr: 1.0000e-04
Epoch 306/2000
289/318 [==========================>.] - ETA: 0s - loss: 0.1967 - mse: 0.1967
- rmse: 0.4435 - mae: 0.2505 - mape: 7.8282
Epoch 306: val_loss did not improve from 0.19550
318/318 [==============================] - 1s 3ms/step - loss: 0.1968 - mse:
0.1968 - rmse: 0.4436 - mae: 0.2509 - mape: 7.8335 - val_loss: 0.1957 - val_mse:
0.1957 - val_rmse: 0.4423 - val_mae: 0.2506 - val_mape: 7.8897 - lr: 1.0000e-04
Epoch 307/2000
297/318 [==========================>..] - ETA: 0s - loss: 0.1963 - mse: 0.1963
- rmse: 0.4431 - mae: 0.2505 - mape: 7.8346
Epoch 307: val_loss improved from 0.19550 to 0.19532, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1967 - mse:
0.1967 - rmse: 0.4435 - mae: 0.2503 - mape: 7.8332 - val_loss: 0.1953 - val_mse:
0.1953 - val_rmse: 0.4419 - val_mae: 0.2493 - val_mape: 7.7703 - lr: 1.0000e-04
Epoch 308/2000
307/318 [==========================>..] - ETA: 0s - loss: 0.1979 - mse: 0.1979
- rmse: 0.4448 - mae: 0.2512 - mape: 7.8475
Epoch 308: val_loss did not improve from 0.19532
318/318 [==============================] - 1s 3ms/step - loss: 0.1967 - mse:
0.1967 - rmse: 0.4435 - mae: 0.2507 - mape: 7.8464 - val_loss: 0.1956 - val_mse:
0.1956 - val_rmse: 0.4422 - val_mae: 0.2497 - val_mape: 7.8369 - lr: 1.0000e-04
Epoch 309/2000
311/318 [==========================>.] - ETA: 0s - loss: 0.1973 - mse: 0.1973
- rmse: 0.4442 - mae: 0.2510 - mape: 7.8492
Epoch 309: val_loss did not improve from 0.19532
318/318 [==============================] - 1s 3ms/step - loss: 0.1967 - mse:
0.1967 - rmse: 0.4435 - mae: 0.2507 - mape: 7.8395 - val_loss: 0.1955 - val_mse:
0.1955 - val_rmse: 0.4421 - val_mae: 0.2482 - val_mape: 7.7260 - lr: 1.0000e-04
Epoch 310/2000
295/318 [==========================>.] - ETA: 0s - loss: 0.1958 - mse: 0.1958
- rmse: 0.4425 - mae: 0.2495 - mape: 7.8020
Epoch 310: val_loss improved from 0.19532 to 0.19530, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1963 - mse:
0.1963 - rmse: 0.4431 - mae: 0.2498 - mape: 7.8119 - val_loss: 0.1953 - val_mse:
0.1953 - val_rmse: 0.4419 - val_mae: 0.2497 - val_mape: 7.8065 - lr: 1.0000e-04
Epoch 311/2000
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294/318 [===========================>…] - ETA: 0s - loss: 0.1948 - mse: 0.1948 - rmse: 0.4413 - mae: 0.2493 - mape: 7.8087
Epoch 311: val_loss did not improve from 0.19530
318/318 [==============================] - 1s 3ms/step - loss: 0.1963 - mse: 0.1963 - rmse: 0.4431 - mae: 0.2501 - mape: 7.8229 - val_loss: 0.1955 - val_mse: 0.1955 - val_rmse: 0.4421 - val_mae: 0.2498 - val_mape: 7.8565 - lr: 1.0000e-04
Epoch 312/2000
304/318 [==========================>..] - ETA: 0s - loss: 0.1969 - mse: 0.1969 - rmse: 0.4438 - mae: 0.2503 - mape: 7.8336
Epoch 312: val_loss improved from 0.19530 to 0.19516, saving model to model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1963 - mse: 0.1963 - rmse: 0.4431 - mae: 0.2502 - mape: 7.8221 - val_loss: 0.1952 - val_mse: 0.1952 - val_rmse: 0.4418 - val_mae: 0.2514 - val_mape: 7.8719 - lr: 1.0000e-04
Epoch 313/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.1975 - mse: 0.1975 - rmse: 0.4444 - mae: 0.2508 - mape: 7.8438
Epoch 313: val_loss improved from 0.19516 to 0.19494, saving model to model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1960 - mse: 0.1960 - rmse: 0.4428 - mae: 0.2497 - mape: 7.8127 - val_loss: 0.1949 - val_mse: 0.1949 - val_rmse: 0.4415 - val_mae: 0.2520 - val_mape: 7.9436 - lr: 1.0000e-04
Epoch 314/2000
317/318 [=============================>.] - ETA: 0s - loss: 0.1959 - mse: 0.1959 - rmse: 0.4426 - mae: 0.2503 - mape: 7.8361
Epoch 314: val_loss did not improve from 0.19494
318/318 [==============================] - 1s 3ms/step - loss: 0.1959 - mse: 0.1959 - rmse: 0.4426 - mae: 0.2503 - mape: 7.8363 - val_loss: 0.1959 - val_mse: 0.1959 - val_rmse: 0.4426 - val_mae: 0.2508 - val_mape: 7.8493 - lr: 1.0000e-04
Epoch 315/2000
292/318 [=========================>…] - ETA: 0s - loss: 0.1954 - mse: 0.1954 - rmse: 0.4420 - mae: 0.2498 - mape: 7.8249
Epoch 315: val_loss did not improve from 0.19494
318/318 [==============================] - 1s 3ms/step - loss: 0.1959 - mse: 0.1959 - rmse: 0.4426 - mae: 0.2505 - mape: 7.8269 - val_loss: 0.1965 - val_mse: 0.1965 - val_rmse: 0.4433 - val_mae: 0.2518 - val_mape: 7.9161 - lr: 1.0000e-04
Epoch 316/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.1954 - mse: 0.1954 - rmse: 0.4421 - mae: 0.2498 - mape: 7.8164
Epoch 316: val_loss improved from 0.19494 to 0.19464, saving model to model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1956 - mse: 0.1956 - rmse: 0.4422 - mae: 0.2500 - mape: 7.8227 - val_loss: 0.1946 - val_mse: 0.1946 - val_rmse: 0.4412 - val_mae: 0.2493 - val_mape: 7.8266 - lr: 1.0000e-04
Epoch 317/2000
303/318 [==========================>..] - ETA: 0s - loss: 0.1965 - mse: 0.1965 - rmse: 0.4433 - mae: 0.2503 - mape: 7.8301
Epoch 317: val_loss did not improve from 0.19464

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318/318 [==============================] - 1s 3ms/step - loss: 0.1962 - mse:
0.1962 - rmse: 0.4429 - mae: 0.2504 - mape: 7.8275 - val_loss: 0.1951 - val_mse:
0.1951 - val_rmse: 0.4417 - val_mae: 0.2522 - val_mape: 7.9389 - lr: 1.0000e-04
Epoch 318/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1972 - mse: 0.1972
- rmse: 0.4441 - mae: 0.2509 - mape: 7.8466
Epoch 318: val_loss did not improve from 0.19464
318/318 [==============================] - 1s 3ms/step - loss: 0.1963 - mse:
0.1963 - rmse: 0.4431 - mae: 0.2507 - mape: 7.8457 - val_loss: 0.1970 - val_mse:
0.1970 - val_rmse: 0.4438 - val_mae: 0.2518 - val_mape: 7.7889 - lr: 1.0000e-04
Epoch 319/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1965 - mse: 0.1965
- rmse: 0.4433 - mae: 0.2505 - mape: 7.8357
Epoch 319: val_loss improved from 0.19464 to 0.19451, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1960 - mse:
0.1960 - rmse: 0.4427 - mae: 0.2503 - mape: 7.8266 - val_loss: 0.1945 - val_mse:
0.1945 - val_rmse: 0.4410 - val_mae: 0.2491 - val_mape: 7.8165 - lr: 1.0000e-04
Epoch 320/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1974 - mse: 0.1974
- rmse: 0.4443 - mae: 0.2508 - mape: 7.8505
Epoch 320: val_loss did not improve from 0.19451
318/318 [==============================] - 1s 3ms/step - loss: 0.1964 - mse:
0.1964 - rmse: 0.4432 - mae: 0.2503 - mape: 7.8315 - val_loss: 0.1947 - val_mse:
0.1947 - val_rmse: 0.4413 - val_mae: 0.2493 - val_mape: 7.7633 - lr: 1.0000e-04
Epoch 321/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1978 - mse: 0.1978
- rmse: 0.4447 - mae: 0.2509 - mape: 7.8499
Epoch 321: val_loss did not improve from 0.19451
318/318 [==============================] - 1s 3ms/step - loss: 0.1960 - mse:
0.1960 - rmse: 0.4428 - mae: 0.2503 - mape: 7.8326 - val_loss: 0.1948 - val_mse:
0.1948 - val_rmse: 0.4413 - val_mae: 0.2490 - val_mape: 7.7477 - lr: 1.0000e-04
Epoch 322/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.1971 - mse: 0.1971
- rmse: 0.4439 - mae: 0.2506 - mape: 7.8338
Epoch 322: val_loss did not improve from 0.19451
318/318 [==============================] - 1s 3ms/step - loss: 0.1954 - mse:
0.1954 - rmse: 0.4420 - mae: 0.2498 - mape: 7.8157 - val_loss: 0.1974 - val_mse:
0.1974 - val_rmse: 0.4443 - val_mae: 0.2482 - val_mape: 7.6835 - lr: 1.0000e-04
Epoch 323/2000
318/318 [==============================] - ETA: 0s - loss: 0.1962 - mse: 0.1962
- rmse: 0.4430 - mae: 0.2503 - mape: 7.8294
Epoch 323: val_loss improved from 0.19451 to 0.19425, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1962 - mse:
0.1962 - rmse: 0.4430 - mae: 0.2503 - mape: 7.8294 - val_loss: 0.1942 - val_mse:
0.1942 - val_rmse: 0.4407 - val_mae: 0.2485 - val_mape: 7.7744 - lr: 1.0000e-04
Epoch 324/2000
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302/318 [============================>..] - ETA: 0s - loss: 0.1979 - mse: 0.1979
- rmse: 0.4448 - mae: 0.2507 - mape: 7.8354
Epoch 324: val_loss did not improve from 0.19425
318/318 [==============================] - 1s 3ms/step - loss: 0.1961 - mse:
0.1961 - rmse: 0.4429 - mae: 0.2502 - mape: 7.8241 - val_loss: 0.1944 - val_mse:
0.1944 - val_rmse: 0.4409 - val_mae: 0.2484 - val_mape: 7.7662 - lr: 1.0000e-04
Epoch 325/2000
292/318 [==========================>…] - ETA: 0s - loss: 0.1955 - mse: 0.1955
- rmse: 0.4422 - mae: 0.2495 - mape: 7.8056
Epoch 325: val_loss did not improve from 0.19425
318/318 [==============================] - 1s 3ms/step - loss: 0.1956 - mse:
0.1956 - rmse: 0.4422 - mae: 0.2500 - mape: 7.8101 - val_loss: 0.1946 - val_mse:
0.1946 - val_rmse: 0.4412 - val_mae: 0.2489 - val_mape: 7.7359 - lr: 1.0000e-04
Epoch 326/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1962 - mse: 0.1962
- rmse: 0.4429 - mae: 0.2505 - mape: 7.8379
Epoch 326: val_loss improved from 0.19425 to 0.19395, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1954 - mse:
0.1954 - rmse: 0.4420 - mae: 0.2500 - mape: 7.8280 - val_loss: 0.1940 - val_mse:
0.1940 - val_rmse: 0.4404 - val_mae: 0.2474 - val_mape: 7.7211 - lr: 1.0000e-04
Epoch 327/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.1920 - mse: 0.1920
- rmse: 0.4382 - mae: 0.2475 - mape: 7.7346
Epoch 327: val_loss did not improve from 0.19395
318/318 [==============================] - 1s 3ms/step - loss: 0.1951 - mse:
0.1951 - rmse: 0.4417 - mae: 0.2491 - mape: 7.7862 - val_loss: 0.1964 - val_mse:
0.1964 - val_rmse: 0.4432 - val_mae: 0.2494 - val_mape: 7.7144 - lr: 1.0000e-04
Epoch 328/2000
299/318 [============================>..] - ETA: 0s - loss: 0.1967 - mse: 0.1967
- rmse: 0.4435 - mae: 0.2502 - mape: 7.8318
Epoch 328: val_loss did not improve from 0.19395
318/318 [==============================] - 1s 3ms/step - loss: 0.1948 - mse:
0.1948 - rmse: 0.4414 - mae: 0.2494 - mape: 7.7987 - val_loss: 0.1972 - val_mse:
0.1972 - val_rmse: 0.4441 - val_mae: 0.2515 - val_mape: 7.8555 - lr: 1.0000e-04
Epoch 329/2000
300/318 [============================>..] - ETA: 0s - loss: 0.1947 - mse: 0.1947
- rmse: 0.4413 - mae: 0.2494 - mape: 7.8166
Epoch 329: val_loss did not improve from 0.19395
318/318 [==============================] - 1s 3ms/step - loss: 0.1955 - mse:
0.1955 - rmse: 0.4422 - mae: 0.2499 - mape: 7.8213 - val_loss: 0.1953 - val_mse:
0.1953 - val_rmse: 0.4419 - val_mae: 0.2485 - val_mape: 7.7716 - lr: 1.0000e-04
Epoch 330/2000
313/318 [============================>.] - ETA: 0s - loss: 0.1957 - mse: 0.1957
- rmse: 0.4424 - mae: 0.2500 - mape: 7.8213
Epoch 330: val_loss did not improve from 0.19395
318/318 [==============================] - 1s 3ms/step - loss: 0.1950 - mse:
0.1950 - rmse: 0.4416 - mae: 0.2496 - mape: 7.8129 - val_loss: 0.1954 - val_mse:

0.1954 - val_rmse: 0.4420 - val_mae: 0.2471 - val_mape: 7.6841 - lr: 1.0000e-04
Epoch 331/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1971 - mse: 0.1971
- rmse: 0.4440 - mae: 0.2500 - mape: 7.8114
Epoch 331: val_loss did not improve from 0.19395
318/318 [==============================] - 1s 3ms/step - loss: 0.1953 - mse:
0.1953 - rmse: 0.4419 - mae: 0.2492 - mape: 7.7899 - val_loss: 0.1950 - val_mse:
0.1950 - val_rmse: 0.4416 - val_mae: 0.2492 - val_mape: 7.8644 - lr: 1.0000e-04
Epoch 332/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.1961 - mse: 0.1961
- rmse: 0.4428 - mae: 0.2492 - mape: 7.7870
Epoch 332: val_loss did not improve from 0.19395
318/318 [==============================] - 1s 3ms/step - loss: 0.1952 - mse:
0.1952 - rmse: 0.4418 - mae: 0.2489 - mape: 7.7889 - val_loss: 0.1961 - val_mse:
0.1961 - val_rmse: 0.4429 - val_mae: 0.2518 - val_mape: 7.9998 - lr: 1.0000e-04
Epoch 333/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1953 - mse: 0.1953
- rmse: 0.4419 - mae: 0.2499 - mape: 7.8130
Epoch 333: val_loss improved from 0.19395 to 0.19372, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1954 - mse:
0.1954 - rmse: 0.4421 - mae: 0.2498 - mape: 7.8171 - val_loss: 0.1937 - val_mse:
0.1937 - val_rmse: 0.4401 - val_mae: 0.2474 - val_mape: 7.7177 - lr: 1.0000e-04
Epoch 334/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.1951 - mse: 0.1951
- rmse: 0.4417 - mae: 0.2494 - mape: 7.8049
Epoch 334: val_loss did not improve from 0.19372
318/318 [==============================] - 1s 3ms/step - loss: 0.1951 - mse:
0.1951 - rmse: 0.4418 - mae: 0.2494 - mape: 7.7949 - val_loss: 0.1938 - val_mse:
0.1938 - val_rmse: 0.4402 - val_mae: 0.2488 - val_mape: 7.8295 - lr: 1.0000e-04
Epoch 335/2000
308/318 [============================>.] - ETA: 0s - loss: 0.1947 - mse: 0.1947
- rmse: 0.4412 - mae: 0.2490 - mape: 7.8092
Epoch 335: val_loss did not improve from 0.19372
318/318 [==============================] - 1s 3ms/step - loss: 0.1952 - mse:
0.1952 - rmse: 0.4418 - mae: 0.2493 - mape: 7.8103 - val_loss: 0.1945 - val_mse:
0.1945 - val_rmse: 0.4411 - val_mae: 0.2480 - val_mape: 7.7951 - lr: 1.0000e-04
Epoch 336/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1945 - mse: 0.1945
- rmse: 0.4410 - mae: 0.2493 - mape: 7.8151
Epoch 336: val_loss did not improve from 0.19372
318/318 [==============================] - 1s 3ms/step - loss: 0.1954 - mse:
0.1954 - rmse: 0.4421 - mae: 0.2496 - mape: 7.8146 - val_loss: 0.1945 - val_mse:
0.1945 - val_rmse: 0.4411 - val_mae: 0.2507 - val_mape: 7.8706 - lr: 1.0000e-04
Epoch 337/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1945 - mse: 0.1945
- rmse: 0.4411 - mae: 0.2493 - mape: 7.8082
Epoch 337: val_loss improved from 0.19372 to 0.19357, saving model to

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model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1953 - mse:
0.1953 - rmse: 0.4420 - mae: 0.2495 - mape: 7.8047 - val_loss: 0.1936 - val_mse:
0.1936 - val_rmse: 0.4400 - val_mae: 0.2470 - val_mape: 7.7108 - lr: 1.0000e-04
Epoch 338/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1953 - mse: 0.1953
- rmse: 0.4419 - mae: 0.2494 - mape: 7.7991
Epoch 338: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1951 - mse:
0.1951 - rmse: 0.4417 - mae: 0.2494 - mape: 7.8092 - val_loss: 0.1958 - val_mse:
0.1958 - val_rmse: 0.4425 - val_mae: 0.2496 - val_mape: 7.7256 - lr: 1.0000e-04
Epoch 339/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1959 - mse: 0.1959
- rmse: 0.4426 - mae: 0.2495 - mape: 7.7927
Epoch 339: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1960 - mse:
0.1960 - rmse: 0.4427 - mae: 0.2500 - mape: 7.8129 - val_loss: 0.1936 - val_mse:
0.1936 - val_rmse: 0.4400 - val_mae: 0.2478 - val_mape: 7.7298 - lr: 1.0000e-04
Epoch 340/2000
308/318 [============================>.] - ETA: 0s - loss: 0.1951 - mse: 0.1951
- rmse: 0.4417 - mae: 0.2491 - mape: 7.8006
Epoch 340: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1948 - mse:
0.1948 - rmse: 0.4414 - mae: 0.2491 - mape: 7.7990 - val_loss: 0.1955 - val_mse:
0.1955 - val_rmse: 0.4422 - val_mae: 0.2490 - val_mape: 7.7364 - lr: 1.0000e-04
Epoch 341/2000
318/318 [==============================] - ETA: 0s - loss: 0.1951 - mse: 0.1951
- rmse: 0.4417 - mae: 0.2494 - mape: 7.8014
Epoch 341: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1951 - mse:
0.1951 - rmse: 0.4417 - mae: 0.2494 - mape: 7.8014 - val_loss: 0.1943 - val_mse:
0.1943 - val_rmse: 0.4408 - val_mae: 0.2478 - val_mape: 7.7956 - lr: 1.0000e-04
Epoch 342/2000
315/318 [============================>.] - ETA: 0s - loss: 0.1950 - mse: 0.1950
- rmse: 0.4416 - mae: 0.2492 - mape: 7.7964
Epoch 342: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1951 - mse:
0.1951 - rmse: 0.4417 - mae: 0.2492 - mape: 7.7950 - val_loss: 0.1962 - val_mse:
0.1962 - val_rmse: 0.4430 - val_mae: 0.2520 - val_mape: 7.9588 - lr: 1.0000e-04
Epoch 343/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1956 - mse: 0.1956
- rmse: 0.4423 - mae: 0.2494 - mape: 7.8017
Epoch 343: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1956 - mse:
0.1956 - rmse: 0.4423 - mae: 0.2495 - mape: 7.8132 - val_loss: 0.1981 - val_mse:
0.1981 - val_rmse: 0.4451 - val_mae: 0.2521 - val_mape: 7.8977 - lr: 1.0000e-04
Epoch 344/2000
314/318 [============================>.] - ETA: 0s - loss: 0.1953 - mse: 0.1953
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- rmse: 0.4419 - mae: 0.2495 - mape: 7.8017
Epoch 344: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1955 - mse:
0.1955 - rmse: 0.4422 - mae: 0.2494 - mape: 7.7919 - val_loss: 0.1951 - val_mse:
0.1951 - val_rmse: 0.4417 - val_mae: 0.2505 - val_mape: 7.8903 - lr: 1.0000e-04
Epoch 345/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1950 - mse: 0.1950
- rmse: 0.4416 - mae: 0.2493 - mape: 7.7991
Epoch 345: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1957 - mse:
0.1957 - rmse: 0.4424 - mae: 0.2502 - mape: 7.8299 - val_loss: 0.2003 - val_mse:
0.2003 - val_rmse: 0.4475 - val_mae: 0.2543 - val_mape: 7.9984 - lr: 1.0000e-04
Epoch 346/2000
317/318 [=============================>.] - ETA: 0s - loss: 0.1954 - mse: 0.1954
- rmse: 0.4420 - mae: 0.2490 - mape: 7.7826
Epoch 346: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1953 - mse:
0.1953 - rmse: 0.4419 - mae: 0.2490 - mape: 7.7823 - val_loss: 0.1945 - val_mse:
0.1945 - val_rmse: 0.4410 - val_mae: 0.2507 - val_mape: 7.9438 - lr: 1.0000e-04
Epoch 347/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1961 - mse: 0.1961
- rmse: 0.4429 - mae: 0.2498 - mape: 7.8157
Epoch 347: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1954 - mse:
0.1954 - rmse: 0.4421 - mae: 0.2498 - mape: 7.8173 - val_loss: 0.1944 - val_mse:
0.1944 - val_rmse: 0.4409 - val_mae: 0.2500 - val_mape: 7.8627 - lr: 1.0000e-04
Epoch 348/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1944 - mse: 0.1944
- rmse: 0.4409 - mae: 0.2483 - mape: 7.7876
Epoch 348: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1946 - mse:
0.1946 - rmse: 0.4412 - mae: 0.2490 - mape: 7.8042 - val_loss: 0.1944 - val_mse:
0.1944 - val_rmse: 0.4410 - val_mae: 0.2475 - val_mape: 7.6950 - lr: 1.0000e-04
Epoch 349/2000
313/318 [=============================>.] - ETA: 0s - loss: 0.1945 - mse: 0.1945
- rmse: 0.4410 - mae: 0.2487 - mape: 7.7764
Epoch 349: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1948 - mse:
0.1948 - rmse: 0.4414 - mae: 0.2487 - mape: 7.7784 - val_loss: 0.1973 - val_mse:
0.1973 - val_rmse: 0.4442 - val_mae: 0.2539 - val_mape: 8.0593 - lr: 1.0000e-04
Epoch 350/2000
293/318 [=========================>…] - ETA: 0s - loss: 0.1919 - mse: 0.1919
- rmse: 0.4381 - mae: 0.2484 - mape: 7.7765
Epoch 350: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1943 - mse:
0.1943 - rmse: 0.4408 - mae: 0.2495 - mape: 7.8091 - val_loss: 0.1940 - val_mse:
0.1940 - val_rmse: 0.4405 - val_mae: 0.2482 - val_mape: 7.8108 - lr: 1.0000e-04
Epoch 351/2000

297/318 [============================>..] - ETA: 0s - loss: 0.1963 - mse: 0.1963
- rmse: 0.4430 - mae: 0.2489 - mape: 7.7817
Epoch 351: val_loss did not improve from 0.19357
318/318 [==============================] - 1s 3ms/step - loss: 0.1953 - mse:
0.1953 - rmse: 0.4419 - mae: 0.2488 - mape: 7.7850 - val_loss: 0.1953 - val_mse:
0.1953 - val_rmse: 0.4420 - val_mae: 0.2495 - val_mape: 7.7347 - lr: 1.0000e-04
Epoch 352/2000
317/318 [============================>.] - ETA: 0s - loss: 0.1945 - mse: 0.1945
- rmse: 0.4410 - mae: 0.2486 - mape: 7.7850
Epoch 352: val_loss improved from 0.19357 to 0.19303, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1945 - mse:
0.1945 - rmse: 0.4410 - mae: 0.2486 - mape: 7.7860 - val_loss: 0.1930 - val_mse:
0.1930 - val_rmse: 0.4393 - val_mae: 0.2472 - val_mape: 7.7172 - lr: 1.0000e-04
Epoch 353/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1946 - mse: 0.1946
- rmse: 0.4412 - mae: 0.2493 - mape: 7.7977
Epoch 353: val_loss did not improve from 0.19303
318/318 [==============================] - 1s 3ms/step - loss: 0.1943 - mse:
0.1943 - rmse: 0.4408 - mae: 0.2491 - mape: 7.7963 - val_loss: 0.1949 - val_mse:
0.1949 - val_rmse: 0.4415 - val_mae: 0.2491 - val_mape: 7.7450 - lr: 1.0000e-04
Epoch 354/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.1932 - mse: 0.1932
- rmse: 0.4396 - mae: 0.2485 - mape: 7.7668
Epoch 354: val_loss did not improve from 0.19303
318/318 [==============================] - 1s 3ms/step - loss: 0.1946 - mse:
0.1946 - rmse: 0.4411 - mae: 0.2490 - mape: 7.7938 - val_loss: 0.1936 - val_mse:
0.1936 - val_rmse: 0.4400 - val_mae: 0.2473 - val_mape: 7.7478 - lr: 1.0000e-04
Epoch 355/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1961 - mse: 0.1961
- rmse: 0.4428 - mae: 0.2504 - mape: 7.8265
Epoch 355: val_loss improved from 0.19303 to 0.19301, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1947 - mse:
0.1947 - rmse: 0.4413 - mae: 0.2497 - mape: 7.8123 - val_loss: 0.1930 - val_mse:
0.1930 - val_rmse: 0.4393 - val_mae: 0.2469 - val_mape: 7.7296 - lr: 1.0000e-04
Epoch 356/2000
308/318 [===========================>.] - ETA: 0s - loss: 0.1938 - mse: 0.1938
- rmse: 0.4403 - mae: 0.2481 - mape: 7.7644
Epoch 356: val_loss did not improve from 0.19301
318/318 [==============================] - 1s 3ms/step - loss: 0.1945 - mse:
0.1945 - rmse: 0.4410 - mae: 0.2484 - mape: 7.7692 - val_loss: 0.1995 - val_mse:
0.1995 - val_rmse: 0.4466 - val_mae: 0.2526 - val_mape: 7.9641 - lr: 1.0000e-04
Epoch 357/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1947 - mse: 0.1947
- rmse: 0.4412 - mae: 0.2485 - mape: 7.7860
Epoch 357: val_loss did not improve from 0.19301
318/318 [==============================] - 1s 3ms/step - loss: 0.1945 - mse:

0.1945 - rmse: 0.4411 - mae: 0.2485 - mape: 7.7784 - val_loss: 0.1947 - val_mse:
0.1947 - val_rmse: 0.4412 - val_mae: 0.2504 - val_mape: 7.8201 - lr: 1.0000e-04
Epoch 358/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1934 - mse: 0.1934
- rmse: 0.4397 - mae: 0.2481 - mape: 7.7690
Epoch 358: val_loss did not improve from 0.19301
318/318 [==============================] - 1s 3ms/step - loss: 0.1943 - mse:
0.1943 - rmse: 0.4408 - mae: 0.2484 - mape: 7.7757 - val_loss: 0.1934 - val_mse:
0.1934 - val_rmse: 0.4398 - val_mae: 0.2497 - val_mape: 7.7977 - lr: 1.0000e-04
Epoch 359/2000
314/318 [============================>.] - ETA: 0s - loss: 0.1950 - mse: 0.1950
- rmse: 0.4415 - mae: 0.2490 - mape: 7.7928
Epoch 359: val_loss improved from 0.19301 to 0.19285, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1947 - mse:
0.1947 - rmse: 0.4413 - mae: 0.2489 - mape: 7.7831 - val_loss: 0.1929 - val_mse:
0.1929 - val_rmse: 0.4392 - val_mae: 0.2479 - val_mape: 7.7754 - lr: 1.0000e-04
Epoch 360/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1946 - mse: 0.1946
- rmse: 0.4412 - mae: 0.2492 - mape: 7.7993
Epoch 360: val_loss did not improve from 0.19285
318/318 [==============================] - 1s 3ms/step - loss: 0.1943 - mse:
0.1943 - rmse: 0.4407 - mae: 0.2490 - mape: 7.7973 - val_loss: 0.1936 - val_mse:
0.1936 - val_rmse: 0.4400 - val_mae: 0.2482 - val_mape: 7.7480 - lr: 1.0000e-04
Epoch 361/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1955 - mse: 0.1955
- rmse: 0.4421 - mae: 0.2492 - mape: 7.7928
Epoch 361: val_loss did not improve from 0.19285
318/318 [==============================] - 1s 3ms/step - loss: 0.1945 - mse:
0.1945 - rmse: 0.4410 - mae: 0.2489 - mape: 7.7877 - val_loss: 0.1935 - val_mse:
0.1935 - val_rmse: 0.4398 - val_mae: 0.2499 - val_mape: 7.8428 - lr: 1.0000e-04
Epoch 362/2000
292/318 [=========================>...] - ETA: 0s - loss: 0.1963 - mse: 0.1963
- rmse: 0.4431 - mae: 0.2499 - mape: 7.8313
Epoch 362: val_loss did not improve from 0.19285
318/318 [==============================] - 1s 3ms/step - loss: 0.1950 - mse:
0.1950 - rmse: 0.4415 - mae: 0.2493 - mape: 7.8042 - val_loss: 0.1937 - val_mse:
0.1937 - val_rmse: 0.4401 - val_mae: 0.2480 - val_mape: 7.7646 - lr: 1.0000e-04
Epoch 363/2000
298/318 [==========================>..] - ETA: 0s - loss: 0.1923 - mse: 0.1923
- rmse: 0.4385 - mae: 0.2475 - mape: 7.7540
Epoch 363: val_loss did not improve from 0.19285
318/318 [==============================] - 1s 3ms/step - loss: 0.1940 - mse:
0.1940 - rmse: 0.4404 - mae: 0.2485 - mape: 7.7763 - val_loss: 0.1954 - val_mse:
0.1954 - val_rmse: 0.4421 - val_mae: 0.2515 - val_mape: 7.9636 - lr: 1.0000e-04
Epoch 364/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1960 - mse: 0.1960
- rmse: 0.4427 - mae: 0.2493 - mape: 7.8083

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Epoch 364: val_loss improved from 0.19285 to 0.19282, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1946 - mse:
0.1946 - rmse: 0.4412 - mae: 0.2489 - mape: 7.8035 - val_loss: 0.1928 - val_mse:
0.1928 - val_rmse: 0.4391 - val_mae: 0.2480 - val_mape: 7.7408 - lr: 1.0000e-04
Epoch 365/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.1949 - mse: 0.1949
- rmse: 0.4415 - mae: 0.2498 - mape: 7.8047
Epoch 365: val_loss did not improve from 0.19282
318/318 [==============================] - 1s 3ms/step - loss: 0.1937 - mse:
0.1937 - rmse: 0.4401 - mae: 0.2487 - mape: 7.7820 - val_loss: 0.1932 - val_mse:
0.1932 - val_rmse: 0.4395 - val_mae: 0.2468 - val_mape: 7.7005 - lr: 1.0000e-04
Epoch 366/2000
314/318 [============================>.] - ETA: 0s - loss: 0.1944 - mse: 0.1944
- rmse: 0.4410 - mae: 0.2490 - mape: 7.7952
Epoch 366: val_loss improved from 0.19282 to 0.19273, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1941 - mse:
0.1941 - rmse: 0.4406 - mae: 0.2487 - mape: 7.7876 - val_loss: 0.1927 - val_mse:
0.1927 - val_rmse: 0.4390 - val_mae: 0.2459 - val_mape: 7.6931 - lr: 1.0000e-04
Epoch 367/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.1949 - mse: 0.1949
- rmse: 0.4415 - mae: 0.2486 - mape: 7.7884
Epoch 367: val_loss did not improve from 0.19273
318/318 [==============================] - 1s 3ms/step - loss: 0.1941 - mse:
0.1941 - rmse: 0.4406 - mae: 0.2482 - mape: 7.7680 - val_loss: 0.1930 - val_mse:
0.1930 - val_rmse: 0.4393 - val_mae: 0.2507 - val_mape: 7.8940 - lr: 1.0000e-04
Epoch 368/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1931 - mse: 0.1931
- rmse: 0.4395 - mae: 0.2481 - mape: 7.7782
Epoch 368: val_loss did not improve from 0.19273
318/318 [==============================] - 1s 3ms/step - loss: 0.1938 - mse:
0.1938 - rmse: 0.4402 - mae: 0.2488 - mape: 7.7935 - val_loss: 0.1940 - val_mse:
0.1940 - val_rmse: 0.4405 - val_mae: 0.2482 - val_mape: 7.7065 - lr: 1.0000e-04
Epoch 369/2000
301/318 [==========================>..] - ETA: 0s - loss: 0.1939 - mse: 0.1939
- rmse: 0.4403 - mae: 0.2495 - mape: 7.7952
Epoch 369: val_loss did not improve from 0.19273
318/318 [==============================] - 1s 3ms/step - loss: 0.1947 - mse:
0.1947 - rmse: 0.4412 - mae: 0.2493 - mape: 7.8036 - val_loss: 0.1930 - val_mse:
0.1930 - val_rmse: 0.4394 - val_mae: 0.2482 - val_mape: 7.8074 - lr: 1.0000e-04
Epoch 370/2000
303/318 [==========================>..] - ETA: 0s - loss: 0.1929 - mse: 0.1929
- rmse: 0.4392 - mae: 0.2476 - mape: 7.7422
Epoch 370: val_loss did not improve from 0.19273
318/318 [==============================] - 1s 3ms/step - loss: 0.1941 - mse:
0.1941 - rmse: 0.4406 - mae: 0.2485 - mape: 7.7654 - val_loss: 0.1965 - val_mse:
0.1965 - val_rmse: 0.4433 - val_mae: 0.2520 - val_mape: 8.0119 - lr: 1.0000e-04
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Epoch 371/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1922 - mse: 0.1922
- rmse: 0.4384 - mae: 0.2477 - mape: 7.7663
Epoch 371: val_loss did not improve from 0.19273
318/318 [============================] - 1s 3ms/step - loss: 0.1940 - mse:
0.1940 - rmse: 0.4404 - mae: 0.2487 - mape: 7.7876 - val_loss: 0.1938 - val_mse:
0.1938 - val_rmse: 0.4403 - val_mae: 0.2469 - val_mape: 7.7367 - lr: 1.0000e-04
Epoch 372/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1943 - mse: 0.1943
- rmse: 0.4408 - mae: 0.2487 - mape: 7.7859
Epoch 372: val_loss did not improve from 0.19273
318/318 [============================] - 1s 3ms/step - loss: 0.1948 - mse:
0.1948 - rmse: 0.4413 - mae: 0.2487 - mape: 7.7783 - val_loss: 0.1947 - val_mse:
0.1947 - val_rmse: 0.4412 - val_mae: 0.2480 - val_mape: 7.7490 - lr: 1.0000e-04
Epoch 373/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1950 - mse: 0.1950
- rmse: 0.4416 - mae: 0.2492 - mape: 7.7943
Epoch 373: val_loss did not improve from 0.19273
318/318 [============================] - 1s 3ms/step - loss: 0.1937 - mse:
0.1937 - rmse: 0.4401 - mae: 0.2484 - mape: 7.7753 - val_loss: 0.1930 - val_mse:
0.1930 - val_rmse: 0.4393 - val_mae: 0.2473 - val_mape: 7.7345 - lr: 1.0000e-04
Epoch 374/2000
316/318 [===========================>.] - ETA: 0s - loss: 0.1936 - mse: 0.1936
- rmse: 0.4400 - mae: 0.2483 - mape: 7.7805
Epoch 374: val_loss did not improve from 0.19273
318/318 [============================] - 1s 3ms/step - loss: 0.1937 - mse:
0.1937 - rmse: 0.4401 - mae: 0.2483 - mape: 7.7804 - val_loss: 0.1932 - val_mse:
0.1932 - val_rmse: 0.4395 - val_mae: 0.2472 - val_mape: 7.6898 - lr: 1.0000e-04
Epoch 375/2000
309/318 [===========================>.] - ETA: 0s - loss: 0.1942 - mse: 0.1942
- rmse: 0.4406 - mae: 0.2485 - mape: 7.7818
Epoch 375: val_loss did not improve from 0.19273
318/318 [============================] - 1s 3ms/step - loss: 0.1938 - mse:
0.1938 - rmse: 0.4403 - mae: 0.2481 - mape: 7.7697 - val_loss: 0.1936 - val_mse:
0.1936 - val_rmse: 0.4400 - val_mae: 0.2461 - val_mape: 7.6189 - lr: 1.0000e-04
Epoch 376/2000
315/318 [===========================>.] - ETA: 0s - loss: 0.1942 - mse: 0.1942
- rmse: 0.4407 - mae: 0.2486 - mape: 7.7856
Epoch 376: val_loss did not improve from 0.19273
318/318 [============================] - 1s 3ms/step - loss: 0.1938 - mse:
0.1938 - rmse: 0.4402 - mae: 0.2483 - mape: 7.7752 - val_loss: 0.1945 - val_mse:
0.1945 - val_rmse: 0.4410 - val_mae: 0.2479 - val_mape: 7.7705 - lr: 1.0000e-04
Epoch 377/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1934 - mse: 0.1934
- rmse: 0.4398 - mae: 0.2477 - mape: 7.7561
Epoch 377: val_loss did not improve from 0.19273
318/318 [============================] - 1s 3ms/step - loss: 0.1934 - mse:
0.1934 - rmse: 0.4398 - mae: 0.2483 - mape: 7.7706 - val_loss: 0.1957 - val_mse:
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0.1957 - val_rmse: 0.4423 - val_mae: 0.2520 - val_mape: 8.0234 - lr: 1.0000e-04
Epoch 378/2000
317/318 [=============================>.] - ETA: 0s - loss: 0.1940 - mse: 0.1940
- rmse: 0.4404 - mae: 0.2484 - mape: 7.7799
Epoch 378: val_loss improved from 0.19273 to 0.19218, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1939 - mse:
0.1939 - rmse: 0.4403 - mae: 0.2484 - mape: 7.7777 - val_loss: 0.1922 - val_mse:
0.1922 - val_rmse: 0.4384 - val_mae: 0.2469 - val_mape: 7.7275 - lr: 1.0000e-04
Epoch 379/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.1936 - mse: 0.1936
- rmse: 0.4399 - mae: 0.2477 - mape: 7.7560
Epoch 379: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1940 - mse:
0.1940 - rmse: 0.4405 - mae: 0.2481 - mape: 7.7660 - val_loss: 0.1949 - val_mse:
0.1949 - val_rmse: 0.4415 - val_mae: 0.2498 - val_mape: 7.7876 - lr: 1.0000e-04
Epoch 380/2000
309/318 [============================>.] - ETA: 0s - loss: 0.1933 - mse: 0.1933
- rmse: 0.4397 - mae: 0.2484 - mape: 7.7713
Epoch 380: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1935 - mse:
0.1935 - rmse: 0.4399 - mae: 0.2485 - mape: 7.7820 - val_loss: 0.1925 - val_mse:
0.1925 - val_rmse: 0.4387 - val_mae: 0.2481 - val_mape: 7.7479 - lr: 1.0000e-04
Epoch 381/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1947 - mse: 0.1947
- rmse: 0.4413 - mae: 0.2487 - mape: 7.7816
Epoch 381: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1939 - mse:
0.1939 - rmse: 0.4403 - mae: 0.2485 - mape: 7.7740 - val_loss: 0.1926 - val_mse:
0.1926 - val_rmse: 0.4388 - val_mae: 0.2479 - val_mape: 7.7628 - lr: 1.0000e-04
Epoch 382/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.1924 - mse: 0.1924
- rmse: 0.4387 - mae: 0.2466 - mape: 7.7397
Epoch 382: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1938 - mse:
0.1938 - rmse: 0.4403 - mae: 0.2480 - mape: 7.7694 - val_loss: 0.1935 - val_mse:
0.1935 - val_rmse: 0.4399 - val_mae: 0.2484 - val_mape: 7.7267 - lr: 1.0000e-04
Epoch 383/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1942 - mse: 0.1942
- rmse: 0.4407 - mae: 0.2484 - mape: 7.7862
Epoch 383: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1938 - mse:
0.1938 - rmse: 0.4402 - mae: 0.2486 - mape: 7.7847 - val_loss: 0.1923 - val_mse:
0.1923 - val_rmse: 0.4385 - val_mae: 0.2452 - val_mape: 7.6146 - lr: 1.0000e-04
Epoch 384/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1930 - mse: 0.1930
- rmse: 0.4393 - mae: 0.2478 - mape: 7.7485
Epoch 384: val_loss improved from 0.19218 to 0.19218, saving model to
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model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1942 - mse:
0.1942 - rmse: 0.4407 - mae: 0.2483 - mape: 7.7724 - val_loss: 0.1922 - val_mse:
0.1922 - val_rmse: 0.4384 - val_mae: 0.2463 - val_mape: 7.7218 - lr: 1.0000e-04
Epoch 385/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1909 - mse: 0.1909
- rmse: 0.4369 - mae: 0.2467 - mape: 7.7387
Epoch 385: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1932 - mse:
0.1932 - rmse: 0.4395 - mae: 0.2479 - mape: 7.7568 - val_loss: 0.1932 - val_mse:
0.1932 - val_rmse: 0.4395 - val_mae: 0.2489 - val_mape: 7.8253 - lr: 1.0000e-04
Epoch 386/2000
318/318 [==============================] - ETA: 0s - loss: 0.1932 - mse: 0.1932
- rmse: 0.4396 - mae: 0.2482 - mape: 7.7811
Epoch 386: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1932 - mse:
0.1932 - rmse: 0.4396 - mae: 0.2482 - mape: 7.7811 - val_loss: 0.1935 - val_mse:
0.1935 - val_rmse: 0.4399 - val_mae: 0.2461 - val_mape: 7.6439 - lr: 1.0000e-04
Epoch 387/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1942 - mse: 0.1942
- rmse: 0.4407 - mae: 0.2484 - mape: 7.7823
Epoch 387: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1940 - mse:
0.1940 - rmse: 0.4404 - mae: 0.2484 - mape: 7.7822 - val_loss: 0.1931 - val_mse:
0.1931 - val_rmse: 0.4394 - val_mae: 0.2459 - val_mape: 7.6138 - lr: 1.0000e-04
Epoch 388/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1938 - mse: 0.1938
- rmse: 0.4403 - mae: 0.2484 - mape: 7.7647
Epoch 388: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1942 - mse:
0.1942 - rmse: 0.4407 - mae: 0.2480 - mape: 7.7636 - val_loss: 0.1928 - val_mse:
0.1928 - val_rmse: 0.4391 - val_mae: 0.2480 - val_mape: 7.7377 - lr: 1.0000e-04
Epoch 389/2000
309/318 [============================>.] - ETA: 0s - loss: 0.1914 - mse: 0.1914
- rmse: 0.4374 - mae: 0.2480 - mape: 7.7687
Epoch 389: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1937 - mse:
0.1937 - rmse: 0.4401 - mae: 0.2490 - mape: 7.7957 - val_loss: 0.1934 - val_mse:
0.1934 - val_rmse: 0.4397 - val_mae: 0.2457 - val_mape: 7.6910 - lr: 1.0000e-04
Epoch 390/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1931 - mse: 0.1931
- rmse: 0.4394 - mae: 0.2479 - mape: 7.7671
Epoch 390: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1933 - mse:
0.1933 - rmse: 0.4397 - mae: 0.2480 - mape: 7.7678 - val_loss: 0.1924 - val_mse:
0.1924 - val_rmse: 0.4387 - val_mae: 0.2474 - val_mape: 7.7758 - lr: 1.0000e-04
Epoch 391/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1931 - mse: 0.1931
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- rmse: 0.4395 - mae: 0.2479 - mape: 7.7596
Epoch 391: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1935 - mse:
0.1935 - rmse: 0.4399 - mae: 0.2481 - mape: 7.7667 - val_loss: 0.1948 - val_mse:
0.1948 - val_rmse: 0.4413 - val_mae: 0.2510 - val_mape: 7.9311 - lr: 1.0000e-04
Epoch 392/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1927 - mse: 0.1927
- rmse: 0.4390 - mae: 0.2481 - mape: 7.7799
Epoch 392: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1933 - mse:
0.1933 - rmse: 0.4396 - mae: 0.2486 - mape: 7.7918 - val_loss: 0.1944 - val_mse:
0.1944 - val_rmse: 0.4409 - val_mae: 0.2478 - val_mape: 7.7102 - lr: 1.0000e-04
Epoch 393/2000
313/318 [=============================>.] - ETA: 0s - loss: 0.1949 - mse: 0.1949
- rmse: 0.4414 - mae: 0.2491 - mape: 7.7995
Epoch 393: val_loss did not improve from 0.19218
318/318 [==============================] - 1s 3ms/step - loss: 0.1937 - mse:
0.1937 - rmse: 0.4401 - mae: 0.2484 - mape: 7.7817 - val_loss: 0.1931 - val_mse:
0.1931 - val_rmse: 0.4394 - val_mae: 0.2462 - val_mape: 7.6322 - lr: 1.0000e-04
Epoch 394/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1937 - mse: 0.1937
- rmse: 0.4401 - mae: 0.2483 - mape: 7.7706
Epoch 394: val_loss improved from 0.19218 to 0.19195, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1940 - mse:
0.1940 - rmse: 0.4405 - mae: 0.2486 - mape: 7.7758 - val_loss: 0.1920 - val_mse:
0.1920 - val_rmse: 0.4381 - val_mae: 0.2450 - val_mape: 7.6609 - lr: 1.0000e-04
Epoch 395/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1931 - mse: 0.1931
- rmse: 0.4394 - mae: 0.2476 - mape: 7.7459
Epoch 395: val_loss improved from 0.19195 to 0.19181, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1936 - mse:
0.1936 - rmse: 0.4400 - mae: 0.2475 - mape: 7.7512 - val_loss: 0.1918 - val_mse:
0.1918 - val_rmse: 0.4380 - val_mae: 0.2470 - val_mape: 7.7488 - lr: 1.0000e-04
Epoch 396/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1936 - mse: 0.1936
- rmse: 0.4400 - mae: 0.2487 - mape: 7.7990
Epoch 396: val_loss did not improve from 0.19181
318/318 [==============================] - 1s 3ms/step - loss: 0.1941 - mse:
0.1941 - rmse: 0.4405 - mae: 0.2487 - mape: 7.7874 - val_loss: 0.1929 - val_mse:
0.1929 - val_rmse: 0.4391 - val_mae: 0.2459 - val_mape: 7.6909 - lr: 1.0000e-04
Epoch 397/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.1938 - mse: 0.1938
- rmse: 0.4403 - mae: 0.2486 - mape: 7.7872
Epoch 397: val_loss did not improve from 0.19181
318/318 [==============================] - 1s 3ms/step - loss: 0.1936 - mse:
0.1936 - rmse: 0.4400 - mae: 0.2485 - mape: 7.7810 - val_loss: 0.1956 - val_mse:

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0.1956 - val_rmse: 0.4423 - val_mae: 0.2488 - val_mape: 7.6883 - lr: 1.0000e-04
Epoch 398/2000
288/318 [===========================>…] - ETA: 0s - loss: 0.1935 - mse: 0.1935
- rmse: 0.4398 - mae: 0.2479 - mape: 7.7579
Epoch 398: val_loss did not improve from 0.19181
318/318 [==============================] - 1s 3ms/step - loss: 0.1935 - mse:
0.1935 - rmse: 0.4399 - mae: 0.2484 - mape: 7.7630 - val_loss: 0.1919 - val_mse:
0.1919 - val_rmse: 0.4381 - val_mae: 0.2470 - val_mape: 7.7702 - lr: 1.0000e-04
Epoch 399/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1928 - mse: 0.1928
- rmse: 0.4391 - mae: 0.2480 - mape: 7.7609
Epoch 399: val_loss did not improve from 0.19181
318/318 [==============================] - 1s 3ms/step - loss: 0.1931 - mse:
0.1931 - rmse: 0.4395 - mae: 0.2479 - mape: 7.7681 - val_loss: 0.1931 - val_mse:
0.1931 - val_rmse: 0.4395 - val_mae: 0.2454 - val_mape: 7.6071 - lr: 1.0000e-04
Epoch 400/2000
310/318 [===========================>.] - ETA: 0s - loss: 0.1935 - mse: 0.1935
- rmse: 0.4399 - mae: 0.2478 - mape: 7.7516
Epoch 400: val_loss did not improve from 0.19181
318/318 [==============================] - 1s 3ms/step - loss: 0.1932 - mse:
0.1932 - rmse: 0.4396 - mae: 0.2479 - mape: 7.7556 - val_loss: 0.1922 - val_mse:
0.1922 - val_rmse: 0.4384 - val_mae: 0.2483 - val_mape: 7.8308 - lr: 1.0000e-04
Epoch 401/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1947 - mse: 0.1947
- rmse: 0.4413 - mae: 0.2483 - mape: 7.7834
Epoch 401: val_loss improved from 0.19181 to 0.19163, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1936 - mse:
0.1936 - rmse: 0.4399 - mae: 0.2479 - mape: 7.7705 - val_loss: 0.1916 - val_mse:
0.1916 - val_rmse: 0.4378 - val_mae: 0.2469 - val_mape: 7.7524 - lr: 1.0000e-04
Epoch 402/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1955 - mse: 0.1955
- rmse: 0.4421 - mae: 0.2487 - mape: 7.7931
Epoch 402: val_loss did not improve from 0.19163
318/318 [==============================] - 1s 3ms/step - loss: 0.1943 - mse:
0.1943 - rmse: 0.4408 - mae: 0.2486 - mape: 7.7792 - val_loss: 0.1924 - val_mse:
0.1924 - val_rmse: 0.4386 - val_mae: 0.2473 - val_mape: 7.8004 - lr: 1.0000e-04
Epoch 403/2000
311/318 [===========================>.] - ETA: 0s - loss: 0.1939 - mse: 0.1939
- rmse: 0.4403 - mae: 0.2483 - mape: 7.7706
Epoch 403: val_loss did not improve from 0.19163
318/318 [==============================] - 1s 3ms/step - loss: 0.1939 - mse:
0.1939 - rmse: 0.4403 - mae: 0.2484 - mape: 7.7690 - val_loss: 0.1958 - val_mse:
0.1958 - val_rmse: 0.4425 - val_mae: 0.2495 - val_mape: 7.7749 - lr: 1.0000e-04
Epoch 404/2000
317/318 [===========================>.] - ETA: 0s - loss: 0.1934 - mse: 0.1934
- rmse: 0.4398 - mae: 0.2477 - mape: 7.7644
Epoch 404: val_loss improved from 0.19163 to 0.19155, saving model to
```

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model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1934 - mse:
0.1934 - rmse: 0.4398 - mae: 0.2478 - mape: 7.7658 - val_loss: 0.1916 - val_mse:
0.1916 - val_rmse: 0.4377 - val_mae: 0.2461 - val_mape: 7.7132 - lr: 1.0000e-04
Epoch 405/2000
298/318 [============================>..] - ETA: 0s - loss: 0.1927 - mse: 0.1927
- rmse: 0.4390 - mae: 0.2472 - mape: 7.7379
Epoch 405: val_loss did not improve from 0.19155
318/318 [==============================] - 1s 3ms/step - loss: 0.1932 - mse:
0.1932 - rmse: 0.4395 - mae: 0.2478 - mape: 7.7574 - val_loss: 0.1919 - val_mse:
0.1919 - val_rmse: 0.4380 - val_mae: 0.2482 - val_mape: 7.8058 - lr: 1.0000e-04
Epoch 406/2000
316/318 [=============================>.] - ETA: 0s - loss: 0.1940 - mse: 0.1940
- rmse: 0.4404 - mae: 0.2483 - mape: 7.7718
Epoch 406: val_loss did not improve from 0.19155
318/318 [==============================] - 1s 3ms/step - loss: 0.1942 - mse:
0.1942 - rmse: 0.4407 - mae: 0.2485 - mape: 7.7767 - val_loss: 0.1934 - val_mse:
0.1934 - val_rmse: 0.4398 - val_mae: 0.2466 - val_mape: 7.6824 - lr: 1.0000e-04
Epoch 407/2000
310/318 [=============================>.] - ETA: 0s - loss: 0.1925 - mse: 0.1925
- rmse: 0.4388 - mae: 0.2475 - mape: 7.7570
Epoch 407: val_loss did not improve from 0.19155
318/318 [==============================] - 1s 3ms/step - loss: 0.1932 - mse:
0.1932 - rmse: 0.4396 - mae: 0.2479 - mape: 7.7604 - val_loss: 0.1936 - val_mse:
0.1936 - val_rmse: 0.4400 - val_mae: 0.2475 - val_mape: 7.7257 - lr: 1.0000e-04
Epoch 408/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1918 - mse: 0.1918
- rmse: 0.4380 - mae: 0.2473 - mape: 7.7613
Epoch 408: val_loss did not improve from 0.19155
318/318 [==============================] - 1s 3ms/step - loss: 0.1929 - mse:
0.1929 - rmse: 0.4392 - mae: 0.2478 - mape: 7.7791 - val_loss: 0.1919 - val_mse:
0.1919 - val_rmse: 0.4380 - val_mae: 0.2465 - val_mape: 7.6769 - lr: 1.0000e-04
Epoch 409/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1950 - mse: 0.1950
- rmse: 0.4416 - mae: 0.2485 - mape: 7.7750
Epoch 409: val_loss did not improve from 0.19155
318/318 [==============================] - 1s 3ms/step - loss: 0.1942 - mse:
0.1942 - rmse: 0.4407 - mae: 0.2482 - mape: 7.7726 - val_loss: 0.1930 - val_mse:
0.1930 - val_rmse: 0.4393 - val_mae: 0.2464 - val_mape: 7.7420 - lr: 1.0000e-04
Epoch 410/2000
301/318 [============================>..] - ETA: 0s - loss: 0.1931 - mse: 0.1931
- rmse: 0.4394 - mae: 0.2485 - mape: 7.7845
Epoch 410: val_loss did not improve from 0.19155
318/318 [==============================] - 1s 3ms/step - loss: 0.1930 - mse:
0.1930 - rmse: 0.4394 - mae: 0.2481 - mape: 7.7661 - val_loss: 0.1938 - val_mse:
0.1938 - val_rmse: 0.4402 - val_mae: 0.2462 - val_mape: 7.7233 - lr: 1.0000e-04
Epoch 411/2000
302/318 [============================>..] - ETA: 0s - loss: 0.1933 - mse: 0.1933
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- rmse: 0.4396 - mae: 0.2480 - mape: 7.7584
Epoch 411: val_loss did not improve from 0.19155
318/318 [==============================] - 1s 3ms/step - loss: 0.1933 - mse:
0.1933 - rmse: 0.4397 - mae: 0.2480 - mape: 7.7667 - val_loss: 0.1927 - val_mse:
0.1927 - val_rmse: 0.4390 - val_mae: 0.2467 - val_mape: 7.7004 - lr: 1.0000e-04
Epoch 412/2000
311/318 [===========================>.] - ETA: 0s - loss: 0.1945 - mse: 0.1945
- rmse: 0.4410 - mae: 0.2486 - mape: 7.7824
Epoch 412: val_loss did not improve from 0.19155
318/318 [==============================] - 1s 3ms/step - loss: 0.1932 - mse:
0.1932 - rmse: 0.4396 - mae: 0.2480 - mape: 7.7651 - val_loss: 0.1924 - val_mse:
0.1924 - val_rmse: 0.4387 - val_mae: 0.2470 - val_mape: 7.7084 - lr: 1.0000e-04
Epoch 413/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1932 - mse: 0.1932
- rmse: 0.4396 - mae: 0.2477 - mape: 7.7614
Epoch 413: val_loss did not improve from 0.19155
318/318 [==============================] - 1s 3ms/step - loss: 0.1931 - mse:
0.1931 - rmse: 0.4395 - mae: 0.2476 - mape: 7.7579 - val_loss: 0.1931 - val_mse:
0.1931 - val_rmse: 0.4394 - val_mae: 0.2471 - val_mape: 7.7428 - lr: 1.0000e-04
Epoch 414/2000
301/318 [==========================>..] - ETA: 0s - loss: 0.1916 - mse: 0.1916
- rmse: 0.4377 - mae: 0.2467 - mape: 7.7273
Epoch 414: val_loss improved from 0.19155 to 0.19154, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1929 - mse:
0.1929 - rmse: 0.4393 - mae: 0.2474 - mape: 7.7480 - val_loss: 0.1915 - val_mse:
0.1915 - val_rmse: 0.4377 - val_mae: 0.2471 - val_mape: 7.7820 - lr: 1.0000e-04
Epoch 415/2000
302/318 [==========================>..] - ETA: 0s - loss: 0.1941 - mse: 0.1941
- rmse: 0.4406 - mae: 0.2488 - mape: 7.7871
Epoch 415: val_loss did not improve from 0.19154
318/318 [==============================] - 1s 3ms/step - loss: 0.1930 - mse:
0.1930 - rmse: 0.4394 - mae: 0.2478 - mape: 7.7709 - val_loss: 0.1922 - val_mse:
0.1922 - val_rmse: 0.4384 - val_mae: 0.2451 - val_mape: 7.6370 - lr: 1.0000e-04
Epoch 416/2000
308/318 [============================>.] - ETA: 0s - loss: 0.1927 - mse: 0.1927
- rmse: 0.4390 - mae: 0.2475 - mape: 7.7379
Epoch 416: val_loss did not improve from 0.19154
318/318 [==============================] - 1s 3ms/step - loss: 0.1930 - mse:
0.1930 - rmse: 0.4394 - mae: 0.2479 - mape: 7.7520 - val_loss: 0.1920 - val_mse:
0.1920 - val_rmse: 0.4382 - val_mae: 0.2472 - val_mape: 7.7539 - lr: 1.0000e-04
Epoch 417/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.1927 - mse: 0.1927
- rmse: 0.4389 - mae: 0.2483 - mape: 7.7775
Epoch 417: val_loss did not improve from 0.19154
318/318 [==============================] - 1s 3ms/step - loss: 0.1929 - mse:
0.1929 - rmse: 0.4392 - mae: 0.2478 - mape: 7.7499 - val_loss: 0.1952 - val_mse:
0.1952 - val_rmse: 0.4418 - val_mae: 0.2521 - val_mape: 8.0202 - lr: 1.0000e-04

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Epoch 418/2000
294/318 [===========================>…] - ETA: 0s - loss: 0.1958 - mse: 0.1958
- rmse: 0.4425 - mae: 0.2487 - mape: 7.7947
Epoch 418: val_loss did not improve from 0.19154
318/318 [============================] - 1s 3ms/step - loss: 0.1931 - mse:
0.1931 - rmse: 0.4395 - mae: 0.2478 - mape: 7.7798 - val_loss: 0.1919 - val_mse:
0.1919 - val_rmse: 0.4380 - val_mae: 0.2462 - val_mape: 7.6617 - lr: 1.0000e-04
Epoch 419/2000
308/318 [===========================>.] - ETA: 0s - loss: 0.1939 - mse: 0.1939
- rmse: 0.4403 - mae: 0.2480 - mape: 7.7605
Epoch 419: val_loss did not improve from 0.19154
318/318 [============================] - 1s 3ms/step - loss: 0.1935 - mse:
0.1935 - rmse: 0.4399 - mae: 0.2479 - mape: 7.7573 - val_loss: 0.1962 - val_mse:
0.1962 - val_rmse: 0.4429 - val_mae: 0.2499 - val_mape: 7.7728 - lr: 1.0000e-04
Epoch 420/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1918 - mse: 0.1918
- rmse: 0.4379 - mae: 0.2467 - mape: 7.7174
Epoch 420: val_loss did not improve from 0.19154
318/318 [============================] - 1s 3ms/step - loss: 0.1934 - mse:
0.1934 - rmse: 0.4398 - mae: 0.2477 - mape: 7.7495 - val_loss: 0.1928 - val_mse:
0.1928 - val_rmse: 0.4391 - val_mae: 0.2464 - val_mape: 7.6510 - lr: 1.0000e-04
Epoch 421/2000
311/318 [===========================>.] - ETA: 0s - loss: 0.1933 - mse: 0.1933
- rmse: 0.4397 - mae: 0.2477 - mape: 7.7640
Epoch 421: val_loss did not improve from 0.19154
318/318 [============================] - 1s 3ms/step - loss: 0.1927 - mse:
0.1927 - rmse: 0.4390 - mae: 0.2473 - mape: 7.7557 - val_loss: 0.1917 - val_mse:
0.1917 - val_rmse: 0.4378 - val_mae: 0.2447 - val_mape: 7.6076 - lr: 1.0000e-04
Epoch 422/2000
295/318 [===========================>…] - ETA: 0s - loss: 0.1942 - mse: 0.1942
- rmse: 0.4407 - mae: 0.2489 - mape: 7.7833
Epoch 422: val_loss improved from 0.19154 to 0.19136, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [============================] - 1s 3ms/step - loss: 0.1931 - mse:
0.1931 - rmse: 0.4395 - mae: 0.2475 - mape: 7.7394 - val_loss: 0.1914 - val_mse:
0.1914 - val_rmse: 0.4374 - val_mae: 0.2470 - val_mape: 7.7940 - lr: 1.0000e-04
Epoch 423/2000
314/318 [===========================>.] - ETA: 0s - loss: 0.1930 - mse: 0.1930
- rmse: 0.4393 - mae: 0.2474 - mape: 7.7577
Epoch 423: val_loss did not improve from 0.19136
318/318 [============================] - 1s 3ms/step - loss: 0.1927 - mse:
0.1927 - rmse: 0.4390 - mae: 0.2473 - mape: 7.7481 - val_loss: 0.1917 - val_mse:
0.1917 - val_rmse: 0.4379 - val_mae: 0.2460 - val_mape: 7.7035 - lr: 1.0000e-04
Epoch 424/2000
318/318 [============================] - ETA: 0s - loss: 0.1933 - mse: 0.1933
- rmse: 0.4397 - mae: 0.2471 - mape: 7.7346
Epoch 424: val_loss did not improve from 0.19136
318/318 [============================] - 1s 3ms/step - loss: 0.1933 - mse:
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0.1933 - rmse: 0.4397 - mae: 0.2471 - mape: 7.7346 - val_loss: 0.1958 - val_mse:
0.1958 - val_rmse: 0.4425 - val_mae: 0.2525 - val_mape: 7.9770 - lr: 1.0000e-04
Epoch 425/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1934 - mse: 0.1934
- rmse: 0.4398 - mae: 0.2481 - mape: 7.7699
Epoch 425: val_loss did not improve from 0.19136
318/318 [==============================] - 1s 3ms/step - loss: 0.1930 - mse:
0.1930 - rmse: 0.4393 - mae: 0.2477 - mape: 7.7612 - val_loss: 0.1919 - val_mse:
0.1919 - val_rmse: 0.4381 - val_mae: 0.2479 - val_mape: 7.8051 - lr: 1.0000e-04
Epoch 426/2000
318/318 [==============================] - ETA: 0s - loss: 0.1928 - mse: 0.1928
- rmse: 0.4391 - mae: 0.2471 - mape: 7.7426
Epoch 426: val_loss did not improve from 0.19136
318/318 [==============================] - 1s 3ms/step - loss: 0.1928 - mse:
0.1928 - rmse: 0.4391 - mae: 0.2471 - mape: 7.7426 - val_loss: 0.1920 - val_mse:
0.1920 - val_rmse: 0.4382 - val_mae: 0.2484 - val_mape: 7.8446 - lr: 1.0000e-04
Epoch 427/2000
301/318 [==========================>..] - ETA: 0s - loss: 0.1933 - mse: 0.1933
- rmse: 0.4396 - mae: 0.2482 - mape: 7.7773
Epoch 427: val_loss did not improve from 0.19136
318/318 [==============================] - 1s 3ms/step - loss: 0.1932 - mse:
0.1932 - rmse: 0.4395 - mae: 0.2484 - mape: 7.7918 - val_loss: 0.1925 - val_mse:
0.1925 - val_rmse: 0.4388 - val_mae: 0.2452 - val_mape: 7.6227 - lr: 1.0000e-04
Epoch 428/2000
301/318 [==========================>..] - ETA: 0s - loss: 0.1937 - mse: 0.1937
- rmse: 0.4401 - mae: 0.2476 - mape: 7.7419
Epoch 428: val_loss did not improve from 0.19136
318/318 [==============================] - 1s 3ms/step - loss: 0.1931 - mse:
0.1931 - rmse: 0.4394 - mae: 0.2474 - mape: 7.7421 - val_loss: 0.1915 - val_mse:
0.1915 - val_rmse: 0.4376 - val_mae: 0.2447 - val_mape: 7.6090 - lr: 1.0000e-04
Epoch 429/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1927 - mse: 0.1927
- rmse: 0.4390 - mae: 0.2473 - mape: 7.7483
Epoch 429: val_loss did not improve from 0.19136
318/318 [==============================] - 1s 3ms/step - loss: 0.1925 - mse:
0.1925 - rmse: 0.4387 - mae: 0.2472 - mape: 7.7457 - val_loss: 0.1960 - val_mse:
0.1960 - val_rmse: 0.4427 - val_mae: 0.2519 - val_mape: 7.8769 - lr: 1.0000e-04
Epoch 430/2000
298/318 [==========================>..] - ETA: 0s - loss: 0.1909 - mse: 0.1909
- rmse: 0.4369 - mae: 0.2464 - mape: 7.7147
Epoch 430: val_loss did not improve from 0.19136
318/318 [==============================] - 1s 3ms/step - loss: 0.1926 - mse:
0.1926 - rmse: 0.4389 - mae: 0.2473 - mape: 7.7459 - val_loss: 0.1914 - val_mse:
0.1914 - val_rmse: 0.4375 - val_mae: 0.2467 - val_mape: 7.7129 - lr: 1.0000e-04
Epoch 431/2000
299/318 [==========================>..] - ETA: 0s - loss: 0.1937 - mse: 0.1937
- rmse: 0.4401 - mae: 0.2477 - mape: 7.7539
Epoch 431: val_loss improved from 0.19136 to 0.19124, saving model to

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model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1932 - mse:
0.1932 - rmse: 0.4396 - mae: 0.2475 - mape: 7.7504 - val_loss: 0.1912 - val_mse:
0.1912 - val_rmse: 0.4373 - val_mae: 0.2466 - val_mape: 7.7022 - lr: 1.0000e-04
Epoch 432/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1935 - mse: 0.1935
- rmse: 0.4399 - mae: 0.2484 - mape: 7.7723
Epoch 432: val_loss improved from 0.19124 to 0.19124, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1930 - mse:
0.1930 - rmse: 0.4393 - mae: 0.2481 - mape: 7.7711 - val_loss: 0.1912 - val_mse:
0.1912 - val_rmse: 0.4373 - val_mae: 0.2466 - val_mape: 7.7229 - lr: 1.0000e-04
Epoch 433/2000
292/318 [==========================>…] - ETA: 0s - loss: 0.1931 - mse: 0.1931
- rmse: 0.4394 - mae: 0.2477 - mape: 7.7584
Epoch 433: val_loss did not improve from 0.19124
318/318 [==============================] - 1s 3ms/step - loss: 0.1925 - mse:
0.1925 - rmse: 0.4388 - mae: 0.2473 - mape: 7.7359 - val_loss: 0.1921 - val_mse:
0.1921 - val_rmse: 0.4382 - val_mae: 0.2457 - val_mape: 7.6732 - lr: 1.0000e-04
Epoch 434/2000
298/318 [==========================>..] - ETA: 0s - loss: 0.1924 - mse: 0.1924
- rmse: 0.4386 - mae: 0.2475 - mape: 7.7390
Epoch 434: val_loss did not improve from 0.19124
318/318 [==============================] - 1s 3ms/step - loss: 0.1926 - mse:
0.1926 - rmse: 0.4389 - mae: 0.2476 - mape: 7.7554 - val_loss: 0.1923 - val_mse:
0.1923 - val_rmse: 0.4385 - val_mae: 0.2462 - val_mape: 7.7077 - lr: 1.0000e-04
Epoch 435/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1943 - mse: 0.1943
- rmse: 0.4408 - mae: 0.2477 - mape: 7.7568
Epoch 435: val_loss did not improve from 0.19124
318/318 [==============================] - 1s 3ms/step - loss: 0.1926 - mse:
0.1926 - rmse: 0.4388 - mae: 0.2473 - mape: 7.7438 - val_loss: 0.1920 - val_mse:
0.1920 - val_rmse: 0.4382 - val_mae: 0.2486 - val_mape: 7.8138 - lr: 1.0000e-04
Epoch 436/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1916 - mse: 0.1916
- rmse: 0.4377 - mae: 0.2463 - mape: 7.7308
Epoch 436: val_loss improved from 0.19124 to 0.19110, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1935 - mse:
0.1935 - rmse: 0.4398 - mae: 0.2476 - mape: 7.7576 - val_loss: 0.1911 - val_mse:
0.1911 - val_rmse: 0.4371 - val_mae: 0.2475 - val_mape: 7.7499 - lr: 1.0000e-04
Epoch 437/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1922 - mse: 0.1922
- rmse: 0.4385 - mae: 0.2477 - mape: 7.7630
Epoch 437: val_loss did not improve from 0.19110
318/318 [==============================] - 1s 3ms/step - loss: 0.1927 - mse:
0.1927 - rmse: 0.4390 - mae: 0.2477 - mape: 7.7578 - val_loss: 0.1937 - val_mse:
0.1937 - val_rmse: 0.4402 - val_mae: 0.2473 - val_mape: 7.7349 - lr: 1.0000e-04
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Epoch 438/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1920 - mse: 0.1920
- rmse: 0.4382 - mae: 0.2469 - mape: 7.7325
Epoch 438: val_loss did not improve from 0.19110
318/318 [==============================] - 1s 3ms/step - loss: 0.1927 - mse:
0.1927 - rmse: 0.4390 - mae: 0.2472 - mape: 7.7411 - val_loss: 0.1914 - val_mse:
0.1914 - val_rmse: 0.4375 - val_mae: 0.2465 - val_mape: 7.6988 - lr: 1.0000e-04
Epoch 439/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1930 - mse: 0.1930
- rmse: 0.4393 - mae: 0.2476 - mape: 7.7463
Epoch 439: val_loss improved from 0.19110 to 0.19097, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1926 - mse:
0.1926 - rmse: 0.4389 - mae: 0.2473 - mape: 7.7430 - val_loss: 0.1910 - val_mse:
0.1910 - val_rmse: 0.4370 - val_mae: 0.2459 - val_mape: 7.6959 - lr: 1.0000e-04
Epoch 440/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1926 - mse: 0.1926
- rmse: 0.4389 - mae: 0.2470 - mape: 7.7311
Epoch 440: val_loss did not improve from 0.19097
318/318 [==============================] - 1s 3ms/step - loss: 0.1930 - mse:
0.1930 - rmse: 0.4393 - mae: 0.2475 - mape: 7.7557 - val_loss: 0.1910 - val_mse:
0.1910 - val_rmse: 0.4370 - val_mae: 0.2446 - val_mape: 7.6522 - lr: 1.0000e-04
Epoch 441/2000
311/318 [============================>.] - ETA: 0s - loss: 0.1926 - mse: 0.1926
- rmse: 0.4389 - mae: 0.2470 - mape: 7.7339
Epoch 441: val_loss did not improve from 0.19097
318/318 [==============================] - 1s 3ms/step - loss: 0.1927 - mse:
0.1927 - rmse: 0.4389 - mae: 0.2469 - mape: 7.7251 - val_loss: 0.1917 - val_mse:
0.1917 - val_rmse: 0.4379 - val_mae: 0.2471 - val_mape: 7.7817 - lr: 1.0000e-04
Epoch 442/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1937 - mse: 0.1937
- rmse: 0.4402 - mae: 0.2480 - mape: 7.7694
Epoch 442: val_loss did not improve from 0.19097
318/318 [==============================] - 1s 3ms/step - loss: 0.1929 - mse:
0.1929 - rmse: 0.4393 - mae: 0.2477 - mape: 7.7658 - val_loss: 0.1936 - val_mse:
0.1936 - val_rmse: 0.4400 - val_mae: 0.2465 - val_mape: 7.6195 - lr: 1.0000e-04
Epoch 443/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1936 - mse: 0.1936
- rmse: 0.4400 - mae: 0.2477 - mape: 7.7590
Epoch 443: val_loss did not improve from 0.19097
318/318 [==============================] - 1s 3ms/step - loss: 0.1930 - mse:
0.1930 - rmse: 0.4393 - mae: 0.2477 - mape: 7.7573 - val_loss: 0.1912 - val_mse:
0.1912 - val_rmse: 0.4372 - val_mae: 0.2467 - val_mape: 7.7680 - lr: 1.0000e-04
Epoch 444/2000
315/318 [============================>.] - ETA: 0s - loss: 0.1931 - mse: 0.1931
- rmse: 0.4394 - mae: 0.2474 - mape: 7.7308
Epoch 444: val_loss did not improve from 0.19097
318/318 [==============================] - 1s 3ms/step - loss: 0.1926 - mse:
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0.1926 - rmse: 0.4388 - mae: 0.2472 - mape: 7.7270 - val_loss: 0.1950 - val_mse:
0.1950 - val_rmse: 0.4416 - val_mae: 0.2512 - val_mape: 7.9884 - lr: 1.0000e-04
Epoch 445/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.1927 - mse: 0.1927
- rmse: 0.4389 - mae: 0.2476 - mape: 7.7705
Epoch 445: val_loss improved from 0.19097 to 0.19091, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1928 - mse:
0.1928 - rmse: 0.4391 - mae: 0.2475 - mape: 7.7597 - val_loss: 0.1909 - val_mse:
0.1909 - val_rmse: 0.4369 - val_mae: 0.2435 - val_mape: 7.5885 - lr: 1.0000e-04
Epoch 446/2000
308/318 [===========================>.] - ETA: 0s - loss: 0.1923 - mse: 0.1923
- rmse: 0.4385 - mae: 0.2464 - mape: 7.7152
Epoch 446: val_loss did not improve from 0.19091
318/318 [==============================] - 1s 3ms/step - loss: 0.1921 - mse:
0.1921 - rmse: 0.4383 - mae: 0.2464 - mape: 7.7131 - val_loss: 0.1912 - val_mse:
0.1912 - val_rmse: 0.4373 - val_mae: 0.2459 - val_mape: 7.7410 - lr: 1.0000e-04
Epoch 447/2000
309/318 [===========================>.] - ETA: 0s - loss: 0.1933 - mse: 0.1933
- rmse: 0.4396 - mae: 0.2473 - mape: 7.7544
Epoch 447: val_loss did not improve from 0.19091
318/318 [==============================] - 1s 3ms/step - loss: 0.1923 - mse:
0.1923 - rmse: 0.4386 - mae: 0.2468 - mape: 7.7385 - val_loss: 0.1911 - val_mse:
0.1911 - val_rmse: 0.4372 - val_mae: 0.2463 - val_mape: 7.6951 - lr: 1.0000e-04
Epoch 448/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1922 - mse: 0.1922
- rmse: 0.4384 - mae: 0.2472 - mape: 7.7690
Epoch 448: val_loss did not improve from 0.19091
318/318 [==============================] - 1s 3ms/step - loss: 0.1931 - mse:
0.1931 - rmse: 0.4395 - mae: 0.2478 - mape: 7.7574 - val_loss: 0.1967 - val_mse:
0.1967 - val_rmse: 0.4436 - val_mae: 0.2523 - val_mape: 8.0451 - lr: 1.0000e-04
Epoch 449/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1926 - mse: 0.1926
- rmse: 0.4389 - mae: 0.2475 - mape: 7.7527
Epoch 449: val_loss did not improve from 0.19091
318/318 [==============================] - 1s 3ms/step - loss: 0.1932 - mse:
0.1932 - rmse: 0.4396 - mae: 0.2479 - mape: 7.7711 - val_loss: 0.1910 - val_mse:
0.1910 - val_rmse: 0.4371 - val_mae: 0.2438 - val_mape: 7.6016 - lr: 1.0000e-04
Epoch 450/2000
310/318 [===========================>.] - ETA: 0s - loss: 0.1910 - mse: 0.1910
- rmse: 0.4371 - mae: 0.2460 - mape: 7.7013
Epoch 450: val_loss did not improve from 0.19091
318/318 [==============================] - 1s 3ms/step - loss: 0.1924 - mse:
0.1924 - rmse: 0.4387 - mae: 0.2467 - mape: 7.7159 - val_loss: 0.1921 - val_mse:
0.1921 - val_rmse: 0.4383 - val_mae: 0.2488 - val_mape: 7.8716 - lr: 1.0000e-04
Epoch 451/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1938 - mse: 0.1938
- rmse: 0.4402 - mae: 0.2471 - mape: 7.7584

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Epoch 451: val_loss did not improve from 0.19091
318/318 [==============================] - 1s 3ms/step - loss: 0.1926 - mse:
0.1926 - rmse: 0.4388 - mae: 0.2468 - mape: 7.7506 - val_loss: 0.1916 - val_mse:
0.1916 - val_rmse: 0.4377 - val_mae: 0.2451 - val_mape: 7.6591 - lr: 1.0000e-04
Epoch 452/2000
316/318 [=============================>.] - ETA: 0s - loss: 0.1928 - mse: 0.1928
- rmse: 0.4391 - mae: 0.2473 - mape: 7.7357
Epoch 452: val_loss did not improve from 0.19091
318/318 [==============================] - 1s 3ms/step - loss: 0.1931 - mse:
0.1931 - rmse: 0.4395 - mae: 0.2475 - mape: 7.7380 - val_loss: 0.2000 - val_mse:
0.2000 - val_rmse: 0.4472 - val_mae: 0.2569 - val_mape: 8.1237 - lr: 1.0000e-04
Epoch 453/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1931 - mse: 0.1931
- rmse: 0.4394 - mae: 0.2480 - mape: 7.7722
Epoch 453: val_loss did not improve from 0.19091
318/318 [==============================] - 1s 3ms/step - loss: 0.1931 - mse:
0.1931 - rmse: 0.4394 - mae: 0.2478 - mape: 7.7584 - val_loss: 0.1924 - val_mse:
0.1924 - val_rmse: 0.4387 - val_mae: 0.2497 - val_mape: 7.9148 - lr: 1.0000e-04
Epoch 454/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1935 - mse: 0.1935
- rmse: 0.4399 - mae: 0.2478 - mape: 7.7619
Epoch 454: val_loss did not improve from 0.19091
318/318 [==============================] - 1s 3ms/step - loss: 0.1922 - mse:
0.1922 - rmse: 0.4384 - mae: 0.2471 - mape: 7.7497 - val_loss: 0.1910 - val_mse:
0.1910 - val_rmse: 0.4370 - val_mae: 0.2457 - val_mape: 7.6692 - lr: 1.0000e-04
Epoch 455/2000
313/318 [=============================>.] - ETA: 0s - loss: 0.1928 - mse: 0.1928
- rmse: 0.4390 - mae: 0.2469 - mape: 7.7371
Epoch 455: val_loss did not improve from 0.19091
318/318 [==============================] - 1s 3ms/step - loss: 0.1924 - mse:
0.1924 - rmse: 0.4387 - mae: 0.2468 - mape: 7.7314 - val_loss: 0.1911 - val_mse:
0.1911 - val_rmse: 0.4371 - val_mae: 0.2432 - val_mape: 7.5675 - lr: 1.0000e-04
Epoch 456/2000
290/318 [==========================>…] - ETA: 0s - loss: 0.1899 - mse: 0.1899
- rmse: 0.4357 - mae: 0.2458 - mape: 7.7108
Epoch 456: val_loss did not improve from 0.19091
318/318 [==============================] - 1s 3ms/step - loss: 0.1922 - mse:
0.1922 - rmse: 0.4384 - mae: 0.2465 - mape: 7.7158 - val_loss: 0.1945 - val_mse:
0.1945 - val_rmse: 0.4410 - val_mae: 0.2501 - val_mape: 7.8680 - lr: 1.0000e-04
Epoch 457/2000
298/318 [============================>..] - ETA: 0s - loss: 0.1917 - mse: 0.1917
- rmse: 0.4379 - mae: 0.2469 - mape: 7.7238
Epoch 457: val_loss improved from 0.19091 to 0.19076, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1925 - mse:
0.1925 - rmse: 0.4388 - mae: 0.2470 - mape: 7.7479 - val_loss: 0.1908 - val_mse:
0.1908 - val_rmse: 0.4368 - val_mae: 0.2443 - val_mape: 7.6162 - lr: 1.0000e-04
Epoch 458/2000
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297/318 [===========================>..] - ETA: 0s - loss: 0.1900 - mse: 0.1900
- rmse: 0.4359 - mae: 0.2458 - mape: 7.7057
Epoch 458: val_loss did not improve from 0.19076
318/318 [==============================] - 1s 3ms/step - loss: 0.1921 - mse:
0.1921 - rmse: 0.4383 - mae: 0.2470 - mape: 7.7291 - val_loss: 0.1955 - val_mse:
0.1955 - val_rmse: 0.4422 - val_mae: 0.2481 - val_mape: 7.8300 - lr: 1.0000e-04
Epoch 459/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1932 - mse: 0.1932
- rmse: 0.4396 - mae: 0.2476 - mape: 7.7493
Epoch 459: val_loss did not improve from 0.19076
318/318 [==============================] - 1s 3ms/step - loss: 0.1926 - mse:
0.1926 - rmse: 0.4389 - mae: 0.2475 - mape: 7.7421 - val_loss: 0.1910 - val_mse:
0.1910 - val_rmse: 0.4370 - val_mae: 0.2459 - val_mape: 7.7427 - lr: 1.0000e-04
Epoch 460/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1913 - mse: 0.1913
- rmse: 0.4374 - mae: 0.2463 - mape: 7.7165
Epoch 460: val_loss did not improve from 0.19076
318/318 [==============================] - 1s 3ms/step - loss: 0.1924 - mse:
0.1924 - rmse: 0.4387 - mae: 0.2467 - mape: 7.7304 - val_loss: 0.1911 - val_mse:
0.1911 - val_rmse: 0.4371 - val_mae: 0.2445 - val_mape: 7.6897 - lr: 1.0000e-04
Epoch 461/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1932 - mse: 0.1932
- rmse: 0.4396 - mae: 0.2463 - mape: 7.6969
Epoch 461: val_loss did not improve from 0.19076
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse:
0.1920 - rmse: 0.4382 - mae: 0.2462 - mape: 7.7222 - val_loss: 0.1932 - val_mse:
0.1932 - val_rmse: 0.4396 - val_mae: 0.2470 - val_mape: 7.6517 - lr: 1.0000e-04
Epoch 462/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.1928 - mse: 0.1928
- rmse: 0.4391 - mae: 0.2461 - mape: 7.7059
Epoch 462: val_loss did not improve from 0.19076
318/318 [==============================] - 1s 3ms/step - loss: 0.1925 - mse:
0.1925 - rmse: 0.4387 - mae: 0.2467 - mape: 7.7318 - val_loss: 0.1910 - val_mse:
0.1910 - val_rmse: 0.4371 - val_mae: 0.2452 - val_mape: 7.6336 - lr: 1.0000e-04
Epoch 463/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1927 - mse: 0.1927
- rmse: 0.4390 - mae: 0.2470 - mape: 7.7302
Epoch 463: val_loss did not improve from 0.19076
318/318 [==============================] - 1s 3ms/step - loss: 0.1923 - mse:
0.1923 - rmse: 0.4386 - mae: 0.2469 - mape: 7.7282 - val_loss: 0.1926 - val_mse:
0.1926 - val_rmse: 0.4388 - val_mae: 0.2492 - val_mape: 7.9138 - lr: 1.0000e-04
Epoch 464/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1924 - mse: 0.1924
- rmse: 0.4387 - mae: 0.2470 - mape: 7.7538
Epoch 464: val_loss did not improve from 0.19076
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse:
0.1920 - rmse: 0.4382 - mae: 0.2466 - mape: 7.7419 - val_loss: 0.1909 - val_mse:
0.1909 - val_rmse: 0.4369 - val_mae: 0.2448 - val_mape: 7.6128 - lr: 1.0000e-04
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Epoch 465/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1917 - mse: 0.1917
- rmse: 0.4378 - mae: 0.2464 - mape: 7.7152
Epoch 465: val_loss improved from 0.19076 to 0.19058, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1918 - mse:
0.1918 - rmse: 0.4380 - mae: 0.2467 - mape: 7.7190 - val_loss: 0.1906 - val_mse:
0.1906 - val_rmse: 0.4366 - val_mae: 0.2455 - val_mape: 7.7125 - lr: 1.0000e-04
Epoch 466/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1921 - mse: 0.1921
- rmse: 0.4382 - mae: 0.2459 - mape: 7.7109
Epoch 466: val_loss did not improve from 0.19058
318/318 [==============================] - 1s 3ms/step - loss: 0.1927 - mse:
0.1927 - rmse: 0.4390 - mae: 0.2463 - mape: 7.7146 - val_loss: 0.1914 - val_mse:
0.1914 - val_rmse: 0.4375 - val_mae: 0.2492 - val_mape: 7.8861 - lr: 1.0000e-04
Epoch 467/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1924 - mse: 0.1924
- rmse: 0.4386 - mae: 0.2465 - mape: 7.7415
Epoch 467: val_loss did not improve from 0.19058
318/318 [==============================] - 1s 3ms/step - loss: 0.1927 - mse:
0.1927 - rmse: 0.4390 - mae: 0.2471 - mape: 7.7527 - val_loss: 0.1913 - val_mse:
0.1913 - val_rmse: 0.4374 - val_mae: 0.2467 - val_mape: 7.6878 - lr: 1.0000e-04
Epoch 468/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1920 - mse: 0.1920
- rmse: 0.4382 - mae: 0.2462 - mape: 7.7132
Epoch 468: val_loss did not improve from 0.19058
318/318 [==============================] - 1s 3ms/step - loss: 0.1921 - mse:
0.1921 - rmse: 0.4383 - mae: 0.2462 - mape: 7.7105 - val_loss: 0.1908 - val_mse:
0.1908 - val_rmse: 0.4369 - val_mae: 0.2471 - val_mape: 7.7964 - lr: 1.0000e-04
Epoch 469/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1912 - mse: 0.1912
- rmse: 0.4373 - mae: 0.2469 - mape: 7.7396
Epoch 469: val_loss did not improve from 0.19058
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2467 - mape: 7.7263 - val_loss: 0.1932 - val_mse:
0.1932 - val_rmse: 0.4396 - val_mae: 0.2470 - val_mape: 7.7291 - lr: 1.0000e-04
Epoch 470/2000
315/318 [============================>.] - ETA: 0s - loss: 0.1923 - mse: 0.1923
- rmse: 0.4386 - mae: 0.2463 - mape: 7.7127
Epoch 470: val_loss did not improve from 0.19058
318/318 [==============================] - 1s 3ms/step - loss: 0.1919 - mse:
0.1919 - rmse: 0.4381 - mae: 0.2462 - mape: 7.7094 - val_loss: 0.1924 - val_mse:
0.1924 - val_rmse: 0.4386 - val_mae: 0.2504 - val_mape: 7.9934 - lr: 1.0000e-04
Epoch 471/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1935 - mse: 0.1935
- rmse: 0.4399 - mae: 0.2465 - mape: 7.7270
Epoch 471: val_loss did not improve from 0.19058
318/318 [==============================] - 1s 3ms/step - loss: 0.1929 - mse:
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0.1929 - rmse: 0.4392 - mae: 0.2465 - mape: 7.7353 - val_loss: 0.1924 - val_mse: 0.1924 - val_rmse: 0.4387 - val_mae: 0.2459 - val_mape: 7.6040 - lr: 1.0000e-04
Epoch 472/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1937 - mse: 0.1937 - rmse: 0.4401 - mae: 0.2470 - mape: 7.7380
Epoch 472: val_loss improved from 0.19058 to 0.19035, saving model to model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1933 - mse: 0.1933 - rmse: 0.4396 - mae: 0.2476 - mape: 7.7553 - val_loss: 0.1903 - val_mse: 0.1903 - val_rmse: 0.4363 - val_mae: 0.2463 - val_mape: 7.7437 - lr: 1.0000e-04
Epoch 473/2000
317/318 [============================>.] - ETA: 0s - loss: 0.1925 - mse: 0.1925 - rmse: 0.4387 - mae: 0.2472 - mape: 7.7459
Epoch 473: val_loss did not improve from 0.19035
318/318 [==============================] - 1s 3ms/step - loss: 0.1924 - mse: 0.1924 - rmse: 0.4387 - mae: 0.2472 - mape: 7.7454 - val_loss: 0.1907 - val_mse: 0.1907 - val_rmse: 0.4367 - val_mae: 0.2437 - val_mape: 7.6061 - lr: 1.0000e-04
Epoch 474/2000
293/318 [=========================>…] - ETA: 0s - loss: 0.1925 - mse: 0.1925 - rmse: 0.4387 - mae: 0.2466 - mape: 7.7143
Epoch 474: val_loss did not improve from 0.19035
318/318 [==============================] - 1s 3ms/step - loss: 0.1925 - mse: 0.1925 - rmse: 0.4388 - mae: 0.2470 - mape: 7.7294 - val_loss: 0.1911 - val_mse: 0.1911 - val_rmse: 0.4372 - val_mae: 0.2450 - val_mape: 7.6989 - lr: 1.0000e-04
Epoch 475/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1928 - mse: 0.1928 - rmse: 0.4391 - mae: 0.2466 - mape: 7.7345
Epoch 475: val_loss did not improve from 0.19035
318/318 [==============================] - 1s 3ms/step - loss: 0.1922 - mse: 0.1922 - rmse: 0.4384 - mae: 0.2464 - mape: 7.7266 - val_loss: 0.1907 - val_mse: 0.1907 - val_rmse: 0.4366 - val_mae: 0.2445 - val_mape: 7.6137 - lr: 1.0000e-04
Epoch 476/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1929 - mse: 0.1929 - rmse: 0.4392 - mae: 0.2467 - mape: 7.7340
Epoch 476: val_loss improved from 0.19035 to 0.19027, saving model to model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse: 0.1920 - rmse: 0.4382 - mae: 0.2463 - mape: 7.7148 - val_loss: 0.1903 - val_mse: 0.1903 - val_rmse: 0.4362 - val_mae: 0.2456 - val_mape: 7.7292 - lr: 1.0000e-04
Epoch 477/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1911 - mse: 0.1911 - rmse: 0.4372 - mae: 0.2458 - mape: 7.7172
Epoch 477: val_loss did not improve from 0.19027
318/318 [==============================] - 1s 3ms/step - loss: 0.1922 - mse: 0.1922 - rmse: 0.4384 - mae: 0.2466 - mape: 7.7296 - val_loss: 0.1934 - val_mse: 0.1934 - val_rmse: 0.4398 - val_mae: 0.2488 - val_mape: 7.7793 - lr: 1.0000e-04
Epoch 478/2000
295/318 [=========================>…] - ETA: 0s - loss: 0.1920 - mse: 0.1920

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- rmse: 0.4382 - mae: 0.2460 - mape: 7.7026
Epoch 478: val_loss did not improve from 0.19027
318/318 [==============================] - 1s 3ms/step - loss: 0.1924 - mse:
0.1924 - rmse: 0.4386 - mae: 0.2466 - mape: 7.7369 - val_loss: 0.1914 - val_mse:
0.1914 - val_rmse: 0.4375 - val_mae: 0.2456 - val_mape: 7.6517 - lr: 1.0000e-04
Epoch 479/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1934 - mse: 0.1934
- rmse: 0.4397 - mae: 0.2467 - mape: 7.7275
Epoch 479: val_loss did not improve from 0.19027
318/318 [==============================] - 1s 3ms/step - loss: 0.1922 - mse:
0.1922 - rmse: 0.4384 - mae: 0.2463 - mape: 7.7132 - val_loss: 0.1918 - val_mse:
0.1918 - val_rmse: 0.4380 - val_mae: 0.2463 - val_mape: 7.7159 - lr: 1.0000e-04
Epoch 480/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1929 - mse: 0.1929
- rmse: 0.4392 - mae: 0.2466 - mape: 7.7279
Epoch 480: val_loss did not improve from 0.19027
318/318 [==============================] - 1s 3ms/step - loss: 0.1925 - mse:
0.1925 - rmse: 0.4387 - mae: 0.2466 - mape: 7.7255 - val_loss: 0.1916 - val_mse:
0.1916 - val_rmse: 0.4377 - val_mae: 0.2451 - val_mape: 7.6100 - lr: 1.0000e-04
Epoch 481/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.1934 - mse: 0.1934
- rmse: 0.4398 - mae: 0.2473 - mape: 7.7365
Epoch 481: val_loss did not improve from 0.19027
318/318 [==============================] - 1s 3ms/step - loss: 0.1928 - mse:
0.1928 - rmse: 0.4391 - mae: 0.2472 - mape: 7.7407 - val_loss: 0.1908 - val_mse:
0.1908 - val_rmse: 0.4368 - val_mae: 0.2451 - val_mape: 7.6731 - lr: 1.0000e-04
Epoch 482/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1919 - mse: 0.1919
- rmse: 0.4380 - mae: 0.2463 - mape: 7.7041
Epoch 482: val_loss did not improve from 0.19027
318/318 [==============================] - 1s 3ms/step - loss: 0.1926 - mse:
0.1926 - rmse: 0.4388 - mae: 0.2463 - mape: 7.7039 - val_loss: 0.1913 - val_mse:
0.1913 - val_rmse: 0.4374 - val_mae: 0.2480 - val_mape: 7.8410 - lr: 1.0000e-04
Epoch 483/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.1905 - mse: 0.1905
- rmse: 0.4365 - mae: 0.2459 - mape: 7.7052
Epoch 483: val_loss did not improve from 0.19027
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4379 - mae: 0.2463 - mape: 7.7187 - val_loss: 0.1905 - val_mse:
0.1905 - val_rmse: 0.4365 - val_mae: 0.2456 - val_mape: 7.7123 - lr: 1.0000e-04
Epoch 484/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.1934 - mse: 0.1934
- rmse: 0.4398 - mae: 0.2472 - mape: 7.7439
Epoch 484: val_loss did not improve from 0.19027
318/318 [==============================] - 1s 3ms/step - loss: 0.1919 - mse:
0.1919 - rmse: 0.4380 - mae: 0.2461 - mape: 7.7084 - val_loss: 0.1912 - val_mse:
0.1912 - val_rmse: 0.4373 - val_mae: 0.2460 - val_mape: 7.7551 - lr: 1.0000e-04
Epoch 485/2000
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303/318 [==========================>..] - ETA: 0s - loss: 0.1928 - mse: 0.1928
- rmse: 0.4391 - mae: 0.2472 - mape: 7.7507
Epoch 485: val_loss improved from 0.19027 to 0.18992, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1921 - mse:
0.1921 - rmse: 0.4383 - mae: 0.2468 - mape: 7.7343 - val_loss: 0.1899 - val_mse:
0.1899 - val_rmse: 0.4358 - val_mae: 0.2442 - val_mape: 7.6531 - lr: 1.0000e-04
Epoch 486/2000
296/318 [=========================>…] - ETA: 0s - loss: 0.1937 - mse: 0.1937
- rmse: 0.4401 - mae: 0.2466 - mape: 7.7259
Epoch 486: val_loss did not improve from 0.18992
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse:
0.1920 - rmse: 0.4382 - mae: 0.2463 - mape: 7.7158 - val_loss: 0.1905 - val_mse:
0.1905 - val_rmse: 0.4365 - val_mae: 0.2451 - val_mape: 7.7351 - lr: 1.0000e-04
Epoch 487/2000
316/318 [=============================>.] - ETA: 0s - loss: 0.1921 - mse: 0.1921
- rmse: 0.4383 - mae: 0.2456 - mape: 7.6982
Epoch 487: val_loss did not improve from 0.18992
318/318 [==============================] - 1s 3ms/step - loss: 0.1918 - mse:
0.1918 - rmse: 0.4379 - mae: 0.2454 - mape: 7.6918 - val_loss: 0.1903 - val_mse:
0.1903 - val_rmse: 0.4362 - val_mae: 0.2461 - val_mape: 7.7392 - lr: 1.0000e-04
Epoch 488/2000
293/318 [=========================>…] - ETA: 0s - loss: 0.1940 - mse: 0.1940
- rmse: 0.4405 - mae: 0.2477 - mape: 7.7649
Epoch 488: val_loss did not improve from 0.18992
318/318 [==============================] - 1s 3ms/step - loss: 0.1916 - mse:
0.1916 - rmse: 0.4378 - mae: 0.2464 - mape: 7.7213 - val_loss: 0.1901 - val_mse:
0.1901 - val_rmse: 0.4360 - val_mae: 0.2453 - val_mape: 7.6974 - lr: 1.0000e-04
Epoch 489/2000
305/318 [==========================>..] - ETA: 0s - loss: 0.1904 - mse: 0.1904
- rmse: 0.4363 - mae: 0.2458 - mape: 7.6956
Epoch 489: val_loss did not improve from 0.18992
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4374 - mae: 0.2460 - mape: 7.7139 - val_loss: 0.1921 - val_mse:
0.1921 - val_rmse: 0.4383 - val_mae: 0.2460 - val_mape: 7.7005 - lr: 1.0000e-04
Epoch 490/2000
292/318 [=========================>…] - ETA: 0s - loss: 0.1935 - mse: 0.1935
- rmse: 0.4399 - mae: 0.2467 - mape: 7.7180
Epoch 490: val_loss did not improve from 0.18992
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4379 - mae: 0.2461 - mape: 7.7123 - val_loss: 0.1909 - val_mse:
0.1909 - val_rmse: 0.4369 - val_mae: 0.2444 - val_mape: 7.5907 - lr: 1.0000e-04
Epoch 491/2000
306/318 [==========================>..] - ETA: 0s - loss: 0.1929 - mse: 0.1929
- rmse: 0.4392 - mae: 0.2463 - mape: 7.7031
Epoch 491: val_loss did not improve from 0.18992
318/318 [==============================] - 1s 3ms/step - loss: 0.1919 - mse:
0.1919 - rmse: 0.4381 - mae: 0.2458 - mape: 7.6881 - val_loss: 0.1922 - val_mse:

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0.1922 - val_rmse: 0.4384 - val_mae: 0.2470 - val_mape: 7.8235 - lr: 1.0000e-04
Epoch 492/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1923 - mse: 0.1923
- rmse: 0.4386 - mae: 0.2467 - mape: 7.7240
Epoch 492: val_loss improved from 0.18992 to 0.18989, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1919 - mse:
0.1919 - rmse: 0.4380 - mae: 0.2465 - mape: 7.7266 - val_loss: 0.1899 - val_mse:
0.1899 - val_rmse: 0.4358 - val_mae: 0.2428 - val_mape: 7.5984 - lr: 1.0000e-04
Epoch 493/2000
317/318 [============================>.] - ETA: 0s - loss: 0.1919 - mse: 0.1919
- rmse: 0.4381 - mae: 0.2458 - mape: 7.6945
Epoch 493: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1919 - mse:
0.1919 - rmse: 0.4381 - mae: 0.2458 - mape: 7.6955 - val_loss: 0.1908 - val_mse:
0.1908 - val_rmse: 0.4368 - val_mae: 0.2462 - val_mape: 7.7646 - lr: 1.0000e-04
Epoch 494/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1919 - mse: 0.1919
- rmse: 0.4380 - mae: 0.2460 - mape: 7.7121
Epoch 494: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2456 - mape: 7.7063 - val_loss: 0.1907 - val_mse:
0.1907 - val_rmse: 0.4367 - val_mae: 0.2437 - val_mape: 7.5807 - lr: 1.0000e-04
Epoch 495/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1915 - mse: 0.1915
- rmse: 0.4376 - mae: 0.2458 - mape: 7.6945
Epoch 495: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4378 - mae: 0.2463 - mape: 7.7115 - val_loss: 0.1926 - val_mse:
0.1926 - val_rmse: 0.4389 - val_mae: 0.2467 - val_mape: 7.8316 - lr: 1.0000e-04
Epoch 496/2000
317/318 [============================>.] - ETA: 0s - loss: 0.1919 - mse: 0.1919
- rmse: 0.4380 - mae: 0.2463 - mape: 7.7177
Epoch 496: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1918 - mse:
0.1918 - rmse: 0.4380 - mae: 0.2463 - mape: 7.7175 - val_loss: 0.1901 - val_mse:
0.1901 - val_rmse: 0.4360 - val_mae: 0.2432 - val_mape: 7.5886 - lr: 1.0000e-04
Epoch 497/2000
309/318 [===========================>.] - ETA: 0s - loss: 0.1930 - mse: 0.1930
- rmse: 0.4394 - mae: 0.2467 - mape: 7.7243
Epoch 497: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1921 - mse:
0.1921 - rmse: 0.4383 - mae: 0.2462 - mape: 7.7089 - val_loss: 0.1928 - val_mse:
0.1928 - val_rmse: 0.4391 - val_mae: 0.2458 - val_mape: 7.7796 - lr: 1.0000e-04
Epoch 498/2000
318/318 [==============================] - ETA: 0s - loss: 0.1914 - mse: 0.1914
- rmse: 0.4375 - mae: 0.2463 - mape: 7.7219
Epoch 498: val_loss did not improve from 0.18989
```

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318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2463 - mape: 7.7219 - val_loss: 0.1906 - val_mse:
0.1906 - val_rmse: 0.4366 - val_mae: 0.2457 - val_mape: 7.7405 - lr: 1.0000e-04
Epoch 499/2000
311/318 [=============================>.] - ETA: 0s - loss: 0.1925 - mse: 0.1925
- rmse: 0.4388 - mae: 0.2465 - mape: 7.7288
Epoch 499: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1919 - mse:
0.1919 - rmse: 0.4380 - mae: 0.2461 - mape: 7.7137 - val_loss: 0.1906 - val_mse:
0.1906 - val_rmse: 0.4366 - val_mae: 0.2452 - val_mape: 7.7228 - lr: 1.0000e-04
Epoch 500/2000
302/318 [============================>..] - ETA: 0s - loss: 0.1898 - mse: 0.1898
- rmse: 0.4357 - mae: 0.2458 - mape: 7.7079
Epoch 500: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4376 - mae: 0.2464 - mape: 7.7213 - val_loss: 0.1926 - val_mse:
0.1926 - val_rmse: 0.4389 - val_mae: 0.2474 - val_mape: 7.8498 - lr: 1.0000e-04
Epoch 501/2000
288/318 [==========================>…] - ETA: 0s - loss: 0.1915 - mse: 0.1915
- rmse: 0.4377 - mae: 0.2456 - mape: 7.7171
Epoch 501: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1919 - mse:
0.1919 - rmse: 0.4380 - mae: 0.2454 - mape: 7.6806 - val_loss: 0.1911 - val_mse:
0.1911 - val_rmse: 0.4372 - val_mae: 0.2487 - val_mape: 7.8612 - lr: 1.0000e-04
Epoch 502/2000
302/318 [============================>..] - ETA: 0s - loss: 0.1937 - mse: 0.1937
- rmse: 0.4401 - mae: 0.2477 - mape: 7.7688
Epoch 502: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse:
0.1920 - rmse: 0.4381 - mae: 0.2465 - mape: 7.7329 - val_loss: 0.1938 - val_mse:
0.1938 - val_rmse: 0.4402 - val_mae: 0.2476 - val_mape: 7.7607 - lr: 1.0000e-04
Epoch 503/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1912 - mse: 0.1912
- rmse: 0.4373 - mae: 0.2453 - mape: 7.6893
Epoch 503: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1921 - mse:
0.1921 - rmse: 0.4383 - mae: 0.2460 - mape: 7.7074 - val_loss: 0.1907 - val_mse:
0.1907 - val_rmse: 0.4367 - val_mae: 0.2458 - val_mape: 7.7562 - lr: 1.0000e-04
Epoch 504/2000
287/318 [==========================>…] - ETA: 0s - loss: 0.1895 - mse: 0.1895
- rmse: 0.4354 - mae: 0.2456 - mape: 7.6976
Epoch 504: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4373 - mae: 0.2455 - mape: 7.6970 - val_loss: 0.1902 - val_mse:
0.1902 - val_rmse: 0.4361 - val_mae: 0.2444 - val_mape: 7.6224 - lr: 1.0000e-04
Epoch 505/2000
302/318 [============================>..] - ETA: 0s - loss: 0.1915 - mse: 0.1915
- rmse: 0.4376 - mae: 0.2462 - mape: 7.7192
```

Epoch 505: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1918 - mse:
0.1918 - rmse: 0.4380 - mae: 0.2463 - mape: 7.7222 - val_loss: 0.1909 - val_mse:
0.1909 - val_rmse: 0.4370 - val_mae: 0.2465 - val_mape: 7.6897 - lr: 1.0000e-04
Epoch 506/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1909 - mse: 0.1909
- rmse: 0.4370 - mae: 0.2456 - mape: 7.6945
Epoch 506: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1918 - mse:
0.1918 - rmse: 0.4379 - mae: 0.2463 - mape: 7.7112 - val_loss: 0.1904 - val_mse:
0.1904 - val_rmse: 0.4363 - val_mae: 0.2479 - val_mape: 7.7992 - lr: 1.0000e-04
Epoch 507/2000
308/318 [============================>.] - ETA: 0s - loss: 0.1906 - mse: 0.1906
- rmse: 0.4365 - mae: 0.2455 - mape: 7.6983
Epoch 507: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4373 - mae: 0.2458 - mape: 7.6991 - val_loss: 0.1939 - val_mse:
0.1939 - val_rmse: 0.4404 - val_mae: 0.2472 - val_mape: 7.7468 - lr: 1.0000e-04
Epoch 508/2000
318/318 [==============================] - ETA: 0s - loss: 0.1921 - mse: 0.1921
- rmse: 0.4383 - mae: 0.2462 - mape: 7.7165
Epoch 508: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1921 - mse:
0.1921 - rmse: 0.4383 - mae: 0.2462 - mape: 7.7165 - val_loss: 0.1912 - val_mse:
0.1912 - val_rmse: 0.4373 - val_mae: 0.2472 - val_mape: 7.7120 - lr: 1.0000e-04
Epoch 509/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1908 - mse: 0.1908
- rmse: 0.4369 - mae: 0.2451 - mape: 7.6787
Epoch 509: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2455 - mape: 7.6837 - val_loss: 0.1907 - val_mse:
0.1907 - val_rmse: 0.4367 - val_mae: 0.2470 - val_mape: 7.8133 - lr: 1.0000e-04
Epoch 510/2000
318/318 [==============================] - ETA: 0s - loss: 0.1916 - mse: 0.1916
- rmse: 0.4377 - mae: 0.2460 - mape: 7.7224
Epoch 510: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1916 - mse:
0.1916 - rmse: 0.4377 - mae: 0.2460 - mape: 7.7224 - val_loss: 0.1907 - val_mse:
0.1907 - val_rmse: 0.4367 - val_mae: 0.2465 - val_mape: 7.7412 - lr: 1.0000e-04
Epoch 511/2000
298/318 [==========================>..] - ETA: 0s - loss: 0.1931 - mse: 0.1931
- rmse: 0.4394 - mae: 0.2466 - mape: 7.7238
Epoch 511: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse:
0.1910 - rmse: 0.4371 - mae: 0.2458 - mape: 7.7043 - val_loss: 0.1912 - val_mse:
0.1912 - val_rmse: 0.4373 - val_mae: 0.2457 - val_mape: 7.7349 - lr: 1.0000e-04
Epoch 512/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1926 - mse: 0.1926

- rmse: 0.4389 - mae: 0.2461 - mape: 7.6977
Epoch 512: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse:
0.1920 - rmse: 0.4381 - mae: 0.2459 - mape: 7.7016 - val_loss: 0.1902 - val_mse:
0.1902 - val_rmse: 0.4362 - val_mae: 0.2457 - val_mape: 7.6891 - lr: 1.0000e-04
Epoch 513/2000
308/318 [============================>.] - ETA: 0s - loss: 0.1910 - mse: 0.1910
- rmse: 0.4370 - mae: 0.2453 - mape: 7.6914
Epoch 513: val_loss did not improve from 0.18989
318/318 [==============================] - 1s 3ms/step - loss: 0.1923 - mse:
0.1923 - rmse: 0.4385 - mae: 0.2460 - mape: 7.7085 - val_loss: 0.1902 - val_mse:
0.1902 - val_rmse: 0.4361 - val_mae: 0.2448 - val_mape: 7.6821 - lr: 1.0000e-04
Epoch 514/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1911 - mse: 0.1911
- rmse: 0.4371 - mae: 0.2469 - mape: 7.7347
Epoch 514: val_loss improved from 0.18989 to 0.18969, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4376 - mae: 0.2461 - mape: 7.7037 - val_loss: 0.1897 - val_mse:
0.1897 - val_rmse: 0.4355 - val_mae: 0.2441 - val_mape: 7.6440 - lr: 1.0000e-04
Epoch 515/2000
302/318 [============================>..] - ETA: 0s - loss: 0.1907 - mse: 0.1907
- rmse: 0.4367 - mae: 0.2456 - mape: 7.6935
Epoch 515: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4379 - mae: 0.2464 - mape: 7.7191 - val_loss: 0.1911 - val_mse:
0.1911 - val_rmse: 0.4371 - val_mae: 0.2471 - val_mape: 7.7536 - lr: 1.0000e-04
Epoch 516/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1908 - mse: 0.1908
- rmse: 0.4368 - mae: 0.2451 - mape: 7.6759
Epoch 516: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1918 - mse:
0.1918 - rmse: 0.4379 - mae: 0.2458 - mape: 7.6964 - val_loss: 0.1927 - val_mse:
0.1927 - val_rmse: 0.4389 - val_mae: 0.2448 - val_mape: 7.5678 - lr: 1.0000e-04
Epoch 517/2000
317/318 [============================>.] - ETA: 0s - loss: 0.1922 - mse: 0.1922
- rmse: 0.4384 - mae: 0.2463 - mape: 7.7078
Epoch 517: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1921 - mse:
0.1921 - rmse: 0.4383 - mae: 0.2463 - mape: 7.7073 - val_loss: 0.1906 - val_mse:
0.1906 - val_rmse: 0.4366 - val_mae: 0.2486 - val_mape: 7.8844 - lr: 1.0000e-04
Epoch 518/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1896 - mse: 0.1896
- rmse: 0.4354 - mae: 0.2447 - mape: 7.6772
Epoch 518: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1919 - mse:
0.1919 - rmse: 0.4380 - mae: 0.2459 - mape: 7.7047 - val_loss: 0.1934 - val_mse:
0.1934 - val_rmse: 0.4398 - val_mae: 0.2476 - val_mape: 7.7704 - lr: 1.0000e-04

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Epoch 519/2000
294/318 [===========================>…] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4346 - mae: 0.2439 - mape: 7.6533
Epoch 519: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2455 - mape: 7.6984 - val_loss: 0.1933 - val_mse:
0.1933 - val_rmse: 0.4397 - val_mae: 0.2482 - val_mape: 7.8086 - lr: 1.0000e-04
Epoch 520/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1907 - mse: 0.1907
- rmse: 0.4367 - mae: 0.2450 - mape: 7.6785
Epoch 520: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2455 - mape: 7.6934 - val_loss: 0.1927 - val_mse:
0.1927 - val_rmse: 0.4389 - val_mae: 0.2463 - val_mape: 7.6409 - lr: 1.0000e-04
Epoch 521/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1914 - mse: 0.1914
- rmse: 0.4375 - mae: 0.2457 - mape: 7.7075
Epoch 521: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2455 - mape: 7.6945 - val_loss: 0.1900 - val_mse:
0.1900 - val_rmse: 0.4359 - val_mae: 0.2449 - val_mape: 7.7087 - lr: 1.0000e-04
Epoch 522/2000
309/318 [===========================>.] - ETA: 0s - loss: 0.1923 - mse: 0.1923
- rmse: 0.4385 - mae: 0.2459 - mape: 7.7110
Epoch 522: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4378 - mae: 0.2457 - mape: 7.7031 - val_loss: 0.1909 - val_mse:
0.1909 - val_rmse: 0.4369 - val_mae: 0.2461 - val_mape: 7.7145 - lr: 1.0000e-04
Epoch 523/2000
313/318 [===========================>.] - ETA: 0s - loss: 0.1904 - mse: 0.1904
- rmse: 0.4364 - mae: 0.2446 - mape: 7.6661
Epoch 523: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4371 - mae: 0.2450 - mape: 7.6719 - val_loss: 0.1914 - val_mse:
0.1914 - val_rmse: 0.4375 - val_mae: 0.2479 - val_mape: 7.8386 - lr: 1.0000e-04
Epoch 524/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1918 - mse: 0.1918
- rmse: 0.4380 - mae: 0.2467 - mape: 7.7302
Epoch 524: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1918 - mse:
0.1918 - rmse: 0.4380 - mae: 0.2464 - mape: 7.7216 - val_loss: 0.1923 - val_mse:
0.1923 - val_rmse: 0.4386 - val_mae: 0.2437 - val_mape: 7.5719 - lr: 1.0000e-04
Epoch 525/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1924 - mse: 0.1924
- rmse: 0.4387 - mae: 0.2463 - mape: 7.7196
Epoch 525: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1916 - mse:
0.1916 - rmse: 0.4377 - mae: 0.2456 - mape: 7.7032 - val_loss: 0.1899 - val_mse:
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0.1899 - val_rmse: 0.4358 - val_mae: 0.2426 - val_mape: 7.5403 - lr: 1.0000e-04
Epoch 526/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1923 - mse: 0.1923
- rmse: 0.4386 - mae: 0.2464 - mape: 7.7227
Epoch 526: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4378 - mae: 0.2461 - mape: 7.7110 - val_loss: 0.1901 - val_mse:
0.1901 - val_rmse: 0.4360 - val_mae: 0.2434 - val_mape: 7.5970 - lr: 1.0000e-04
Epoch 527/2000
309/318 [============================>.] - ETA: 0s - loss: 0.1915 - mse: 0.1915
- rmse: 0.4376 - mae: 0.2450 - mape: 7.6778
Epoch 527: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4376 - mae: 0.2448 - mape: 7.6676 - val_loss: 0.1902 - val_mse:
0.1902 - val_rmse: 0.4361 - val_mae: 0.2445 - val_mape: 7.6967 - lr: 1.0000e-04
Epoch 528/2000
318/318 [==============================] - ETA: 0s - loss: 0.1914 - mse: 0.1914
- rmse: 0.4375 - mae: 0.2459 - mape: 7.7070
Epoch 528: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2459 - mape: 7.7070 - val_loss: 0.1904 - val_mse:
0.1904 - val_rmse: 0.4364 - val_mae: 0.2456 - val_mape: 7.6847 - lr: 1.0000e-04
Epoch 529/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1930 - mse: 0.1930
- rmse: 0.4394 - mae: 0.2469 - mape: 7.7312
Epoch 529: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1919 - mse:
0.1919 - rmse: 0.4380 - mae: 0.2461 - mape: 7.7109 - val_loss: 0.1908 - val_mse:
0.1908 - val_rmse: 0.4368 - val_mae: 0.2440 - val_mape: 7.5716 - lr: 1.0000e-04
Epoch 530/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1908 - mse: 0.1908
- rmse: 0.4368 - mae: 0.2452 - mape: 7.6678
Epoch 530: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1919 - mse:
0.1919 - rmse: 0.4380 - mae: 0.2454 - mape: 7.6800 - val_loss: 0.1902 - val_mse:
0.1902 - val_rmse: 0.4361 - val_mae: 0.2463 - val_mape: 7.7560 - lr: 1.0000e-04
Epoch 531/2000
316/318 [=============================>.] - ETA: 0s - loss: 0.1916 - mse: 0.1916
- rmse: 0.4377 - mae: 0.2462 - mape: 7.7143
Epoch 531: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1916 - mse:
0.1916 - rmse: 0.4377 - mae: 0.2463 - mape: 7.7140 - val_loss: 0.1920 - val_mse:
0.1920 - val_rmse: 0.4382 - val_mae: 0.2459 - val_mape: 7.7160 - lr: 1.0000e-04
Epoch 532/2000
308/318 [============================>.] - ETA: 0s - loss: 0.1913 - mse: 0.1913
- rmse: 0.4374 - mae: 0.2459 - mape: 7.7045
Epoch 532: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:

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0.1912 - rmse: 0.4373 - mae: 0.2460 - mape: 7.7040 - val_loss: 0.1940 - val_mse:
0.1940 - val_rmse: 0.4405 - val_mae: 0.2464 - val_mape: 7.7370 - lr: 1.0000e-04
Epoch 533/2000
305/318 [============================>..] - ETA: 0s - loss: 0.1920 - mse: 0.1920
- rmse: 0.4382 - mae: 0.2458 - mape: 7.6956
Epoch 533: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1916 - mse:
0.1916 - rmse: 0.4378 - mae: 0.2456 - mape: 7.6940 - val_loss: 0.1906 - val_mse:
0.1906 - val_rmse: 0.4366 - val_mae: 0.2448 - val_mape: 7.6226 - lr: 1.0000e-04
Epoch 534/2000
311/318 [=============================>.] - ETA: 0s - loss: 0.1922 - mse: 0.1922
- rmse: 0.4384 - mae: 0.2463 - mape: 7.7138
Epoch 534: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1916 - mse:
0.1916 - rmse: 0.4377 - mae: 0.2460 - mape: 7.7107 - val_loss: 0.1923 - val_mse:
0.1923 - val_rmse: 0.4385 - val_mae: 0.2457 - val_mape: 7.5866 - lr: 1.0000e-04
Epoch 535/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.1917 - mse: 0.1917
- rmse: 0.4378 - mae: 0.2456 - mape: 7.6869
Epoch 535: val_loss did not improve from 0.18969
318/318 [==============================] - 1s 3ms/step - loss: 0.1922 - mse:
0.1922 - rmse: 0.4384 - mae: 0.2456 - mape: 7.6803 - val_loss: 0.1901 - val_mse:
0.1901 - val_rmse: 0.4360 - val_mae: 0.2457 - val_mape: 7.6787 - lr: 1.0000e-04
Epoch 536/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1917 - mse: 0.1917
- rmse: 0.4378 - mae: 0.2460 - mape: 7.7254
Epoch 536: val_loss improved from 0.18969 to 0.18955, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1916 - mse:
0.1916 - rmse: 0.4377 - mae: 0.2460 - mape: 7.7124 - val_loss: 0.1895 - val_mse:
0.1895 - val_rmse: 0.4354 - val_mae: 0.2439 - val_mape: 7.6346 - lr: 1.0000e-04
Epoch 537/2000
291/318 [==========================>...] - ETA: 0s - loss: 0.1920 - mse: 0.1920
- rmse: 0.4382 - mae: 0.2469 - mape: 7.7337
Epoch 537: val_loss did not improve from 0.18955
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse:
0.1907 - rmse: 0.4367 - mae: 0.2458 - mape: 7.7006 - val_loss: 0.1921 - val_mse:
0.1921 - val_rmse: 0.4383 - val_mae: 0.2454 - val_mape: 7.6986 - lr: 1.0000e-04
Epoch 538/2000
291/318 [==========================>...] - ETA: 0s - loss: 0.1940 - mse: 0.1940
- rmse: 0.4404 - mae: 0.2467 - mape: 7.7344
Epoch 538: val_loss did not improve from 0.18955
318/318 [==============================] - 1s 3ms/step - loss: 0.1919 - mse:
0.1919 - rmse: 0.4381 - mae: 0.2458 - mape: 7.7083 - val_loss: 0.1903 - val_mse:
0.1903 - val_rmse: 0.4362 - val_mae: 0.2456 - val_mape: 7.6797 - lr: 1.0000e-04
Epoch 539/2000
318/318 [==============================] - ETA: 0s - loss: 0.1920 - mse: 0.1920
- rmse: 0.4382 - mae: 0.2458 - mape: 7.7000
```

Epoch 539: val_loss did not improve from 0.18955
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse:
0.1920 - rmse: 0.4382 - mae: 0.2458 - mape: 7.7000 - val_loss: 0.1912 - val_mse:
0.1912 - val_rmse: 0.4373 - val_mae: 0.2442 - val_mape: 7.5469 - lr: 1.0000e-04
Epoch 540/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1920 - mse: 0.1920
- rmse: 0.4382 - mae: 0.2452 - mape: 7.6889
Epoch 540: val_loss did not improve from 0.18955
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4378 - mae: 0.2453 - mape: 7.6796 - val_loss: 0.1926 - val_mse:
0.1926 - val_rmse: 0.4389 - val_mae: 0.2475 - val_mape: 7.7768 - lr: 1.0000e-04
Epoch 541/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.1914 - mse: 0.1914
- rmse: 0.4375 - mae: 0.2451 - mape: 7.6739
Epoch 541: val_loss did not improve from 0.18955
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2451 - mape: 7.6715 - val_loss: 0.1926 - val_mse:
0.1926 - val_rmse: 0.4389 - val_mae: 0.2484 - val_mape: 7.8180 - lr: 1.0000e-04
Epoch 542/2000
292/318 [==========================>…] - ETA: 0s - loss: 0.1921 - mse: 0.1921
- rmse: 0.4383 - mae: 0.2459 - mape: 7.7123
Epoch 542: val_loss did not improve from 0.18955
318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4376 - mae: 0.2456 - mape: 7.7018 - val_loss: 0.1906 - val_mse:
0.1906 - val_rmse: 0.4366 - val_mae: 0.2460 - val_mape: 7.7468 - lr: 1.0000e-04
Epoch 543/2000
301/318 [============================>..] - ETA: 0s - loss: 0.1912 - mse: 0.1912
- rmse: 0.4372 - mae: 0.2455 - mape: 7.6885
Epoch 543: val_loss did not improve from 0.18955
318/318 [==============================] - 1s 3ms/step - loss: 0.1918 - mse:
0.1918 - rmse: 0.4379 - mae: 0.2461 - mape: 7.7090 - val_loss: 0.1896 - val_mse:
0.1896 - val_rmse: 0.4354 - val_mae: 0.2434 - val_mape: 7.6401 - lr: 1.0000e-04
Epoch 544/2000
301/318 [============================>..] - ETA: 0s - loss: 0.1910 - mse: 0.1910
- rmse: 0.4370 - mae: 0.2450 - mape: 7.6815
Epoch 544: val_loss did not improve from 0.18955
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4373 - mae: 0.2454 - mape: 7.6982 - val_loss: 0.1905 - val_mse:
0.1905 - val_rmse: 0.4364 - val_mae: 0.2420 - val_mape: 7.5181 - lr: 1.0000e-04
Epoch 545/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1913 - mse: 0.1913
- rmse: 0.4374 - mae: 0.2449 - mape: 7.6665
Epoch 545: val_loss did not improve from 0.18955
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4379 - mae: 0.2456 - mape: 7.6902 - val_loss: 0.1901 - val_mse:
0.1901 - val_rmse: 0.4360 - val_mae: 0.2447 - val_mape: 7.6630 - lr: 1.0000e-04
Epoch 546/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1915 - mse: 0.1915

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- rmse: 0.4376 - mae: 0.2465 - mape: 7.7134
Epoch 546: val_loss did not improve from 0.18955
318/318 [==============================] - 1s 3ms/step - loss: 0.1916 - mse:
0.1916 - rmse: 0.4377 - mae: 0.2458 - mape: 7.6899 - val_loss: 0.1910 - val_mse:
0.1910 - val_rmse: 0.4370 - val_mae: 0.2438 - val_mape: 7.6346 - lr: 1.0000e-04
Epoch 547/2000
311/318 [============================>.] - ETA: 0s - loss: 0.1924 - mse: 0.1924
- rmse: 0.4386 - mae: 0.2459 - mape: 7.7118
Epoch 547: val_loss did not improve from 0.18955
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse:
0.1920 - rmse: 0.4382 - mae: 0.2458 - mape: 7.7013 - val_loss: 0.1898 - val_mse:
0.1898 - val_rmse: 0.4356 - val_mae: 0.2448 - val_mape: 7.7136 - lr: 1.0000e-04
Epoch 548/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1923 - mse: 0.1923
- rmse: 0.4385 - mae: 0.2462 - mape: 7.6976
Epoch 548: val_loss did not improve from 0.18955
318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4376 - mae: 0.2460 - mape: 7.7126 - val_loss: 0.1913 - val_mse:
0.1913 - val_rmse: 0.4374 - val_mae: 0.2443 - val_mape: 7.6069 - lr: 1.0000e-04
Epoch 549/2000
309/318 [===========================>.] - ETA: 0s - loss: 0.1916 - mse: 0.1916
- rmse: 0.4378 - mae: 0.2452 - mape: 7.6808
Epoch 549: val_loss improved from 0.18955 to 0.18952, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1918 - mse:
0.1918 - rmse: 0.4380 - mae: 0.2452 - mape: 7.6768 - val_loss: 0.1895 - val_mse:
0.1895 - val_rmse: 0.4353 - val_mae: 0.2442 - val_mape: 7.6736 - lr: 1.0000e-04
Epoch 550/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1924 - mse: 0.1924
- rmse: 0.4386 - mae: 0.2454 - mape: 7.6881
Epoch 550: val_loss did not improve from 0.18952
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2453 - mape: 7.6860 - val_loss: 0.1897 - val_mse:
0.1897 - val_rmse: 0.4355 - val_mae: 0.2427 - val_mape: 7.6102 - lr: 1.0000e-04
Epoch 551/2000
296/318 [==========================>...] - ETA: 0s - loss: 0.1915 - mse: 0.1915
- rmse: 0.4376 - mae: 0.2450 - mape: 7.6751
Epoch 551: val_loss did not improve from 0.18952
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4379 - mae: 0.2452 - mape: 7.6802 - val_loss: 0.1919 - val_mse:
0.1919 - val_rmse: 0.4380 - val_mae: 0.2468 - val_mape: 7.7836 - lr: 1.0000e-04
Epoch 552/2000
295/318 [==========================>...] - ETA: 0s - loss: 0.1906 - mse: 0.1906
- rmse: 0.4365 - mae: 0.2444 - mape: 7.6638
Epoch 552: val_loss improved from 0.18952 to 0.18940, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4370 - mae: 0.2448 - mape: 7.6756 - val_loss: 0.1894 - val_mse:

0.1894 - val_rmse: 0.4352 - val_mae: 0.2447 - val_mape: 7.6777 - lr: 1.0000e-04
Epoch 553/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1924 - mse: 0.1924
- rmse: 0.4387 - mae: 0.2457 - mape: 7.7165
Epoch 553: val_loss did not improve from 0.18940
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4379 - mae: 0.2459 - mape: 7.7170 - val_loss: 0.1925 - val_mse:
0.1925 - val_rmse: 0.4387 - val_mae: 0.2476 - val_mape: 7.7513 - lr: 1.0000e-04
Epoch 554/2000
311/318 [============================>.] - ETA: 0s - loss: 0.1906 - mse: 0.1906
- rmse: 0.4366 - mae: 0.2450 - mape: 7.6807
Epoch 554: val_loss improved from 0.18940 to 0.18939, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4376 - mae: 0.2456 - mape: 7.6869 - val_loss: 0.1894 - val_mse:
0.1894 - val_rmse: 0.4352 - val_mae: 0.2429 - val_mape: 7.5734 - lr: 1.0000e-04
Epoch 555/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.1905 - mse: 0.1905
- rmse: 0.4364 - mae: 0.2450 - mape: 7.6867
Epoch 555: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4377 - mae: 0.2462 - mape: 7.7175 - val_loss: 0.1903 - val_mse:
0.1903 - val_rmse: 0.4363 - val_mae: 0.2448 - val_mape: 7.6155 - lr: 1.0000e-04
Epoch 556/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1904 - mse: 0.1904
- rmse: 0.4363 - mae: 0.2445 - mape: 7.6469
Epoch 556: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse:
0.1910 - rmse: 0.4371 - mae: 0.2450 - mape: 7.6719 - val_loss: 0.1897 - val_mse:
0.1897 - val_rmse: 0.4355 - val_mae: 0.2459 - val_mape: 7.7581 - lr: 1.0000e-04
Epoch 557/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1907 - mse: 0.1907
- rmse: 0.4367 - mae: 0.2455 - mape: 7.6863
Epoch 557: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4369 - mae: 0.2453 - mape: 7.6772 - val_loss: 0.1898 - val_mse:
0.1898 - val_rmse: 0.4356 - val_mae: 0.2451 - val_mape: 7.7395 - lr: 1.0000e-04
Epoch 558/2000
309/318 [============================>.] - ETA: 0s - loss: 0.1921 - mse: 0.1921
- rmse: 0.4383 - mae: 0.2452 - mape: 7.6867
Epoch 558: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2449 - mape: 7.6800 - val_loss: 0.1895 - val_mse:
0.1895 - val_rmse: 0.4353 - val_mae: 0.2441 - val_mape: 7.6435 - lr: 1.0000e-04
Epoch 559/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.1911 - mse: 0.1911
- rmse: 0.4372 - mae: 0.2449 - mape: 7.6605
Epoch 559: val_loss did not improve from 0.18939

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318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4376 - mae: 0.2452 - mape: 7.6781 - val_loss: 0.1896 - val_mse:
0.1896 - val_rmse: 0.4355 - val_mae: 0.2433 - val_mape: 7.6167 - lr: 1.0000e-04
Epoch 560/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1922 - mse: 0.1922
- rmse: 0.4384 - mae: 0.2457 - mape: 7.6897
Epoch 560: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4372 - mae: 0.2450 - mape: 7.6780 - val_loss: 0.1901 - val_mse:
0.1901 - val_rmse: 0.4360 - val_mae: 0.2446 - val_mape: 7.7145 - lr: 1.0000e-04
Epoch 561/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1908 - mse: 0.1908
- rmse: 0.4368 - mae: 0.2444 - mape: 7.6571
Epoch 561: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse:
0.1910 - rmse: 0.4371 - mae: 0.2446 - mape: 7.6609 - val_loss: 0.1907 - val_mse:
0.1907 - val_rmse: 0.4367 - val_mae: 0.2473 - val_mape: 7.8161 - lr: 1.0000e-04
Epoch 562/2000
308/318 [============================>.] - ETA: 0s - loss: 0.1913 - mse: 0.1913
- rmse: 0.4374 - mae: 0.2457 - mape: 7.7066
Epoch 562: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4378 - mae: 0.2461 - mape: 7.7191 - val_loss: 0.1938 - val_mse:
0.1938 - val_rmse: 0.4402 - val_mae: 0.2477 - val_mape: 7.7790 - lr: 1.0000e-04
Epoch 563/2000
293/318 [=========================>…] - ETA: 0s - loss: 0.1938 - mse: 0.1938
- rmse: 0.4403 - mae: 0.2466 - mape: 7.7222
Epoch 563: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse:
0.1920 - rmse: 0.4382 - mae: 0.2454 - mape: 7.6921 - val_loss: 0.1915 - val_mse:
0.1915 - val_rmse: 0.4376 - val_mae: 0.2456 - val_mape: 7.6378 - lr: 1.0000e-04
Epoch 564/2000
311/318 [============================>.] - ETA: 0s - loss: 0.1907 - mse: 0.1907
- rmse: 0.4367 - mae: 0.2445 - mape: 7.6557
Epoch 564: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse:
0.1910 - rmse: 0.4370 - mae: 0.2448 - mape: 7.6639 - val_loss: 0.1902 - val_mse:
0.1902 - val_rmse: 0.4361 - val_mae: 0.2455 - val_mape: 7.6978 - lr: 1.0000e-04
Epoch 565/2000
293/318 [=========================>…] - ETA: 0s - loss: 0.1923 - mse: 0.1923
- rmse: 0.4385 - mae: 0.2454 - mape: 7.6872
Epoch 565: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2453 - mape: 7.6809 - val_loss: 0.1912 - val_mse:
0.1912 - val_rmse: 0.4373 - val_mae: 0.2456 - val_mape: 7.7232 - lr: 1.0000e-04
Epoch 566/2000
315/318 [============================>.] - ETA: 0s - loss: 0.1909 - mse: 0.1909
- rmse: 0.4370 - mae: 0.2449 - mape: 7.6811
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Epoch 566: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4376 - mae: 0.2451 - mape: 7.6856 - val_loss: 0.1919 - val_mse:
0.1919 - val_rmse: 0.4380 - val_mae: 0.2460 - val_mape: 7.7677 - lr: 1.0000e-04
Epoch 567/2000
310/318 [=============================>.] - ETA: 0s - loss: 0.1903 - mse: 0.1903
- rmse: 0.4363 - mae: 0.2454 - mape: 7.6904
Epoch 567: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4370 - mae: 0.2457 - mape: 7.7064 - val_loss: 0.1915 - val_mse:
0.1915 - val_rmse: 0.4376 - val_mae: 0.2443 - val_mape: 7.5909 - lr: 1.0000e-04
Epoch 568/2000
288/318 [===========================>…] - ETA: 0s - loss: 0.1948 - mse: 0.1948
- rmse: 0.4414 - mae: 0.2473 - mape: 7.7390
Epoch 568: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4372 - mae: 0.2453 - mape: 7.6863 - val_loss: 0.1912 - val_mse:
0.1912 - val_rmse: 0.4372 - val_mae: 0.2454 - val_mape: 7.7105 - lr: 1.0000e-04
Epoch 569/2000
317/318 [=============================>.] - ETA: 0s - loss: 0.1911 - mse: 0.1911
- rmse: 0.4371 - mae: 0.2452 - mape: 7.6890
Epoch 569: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse:
0.1910 - rmse: 0.4370 - mae: 0.2451 - mape: 7.6878 - val_loss: 0.1908 - val_mse:
0.1908 - val_rmse: 0.4368 - val_mae: 0.2422 - val_mape: 7.4964 - lr: 1.0000e-04
Epoch 570/2000
310/318 [=============================>.] - ETA: 0s - loss: 0.1925 - mse: 0.1925
- rmse: 0.4387 - mae: 0.2463 - mape: 7.7021
Epoch 570: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1916 - mse:
0.1916 - rmse: 0.4377 - mae: 0.2457 - mape: 7.6926 - val_loss: 0.1895 - val_mse:
0.1895 - val_rmse: 0.4353 - val_mae: 0.2422 - val_mape: 7.5571 - lr: 1.0000e-04
Epoch 571/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.1942 - mse: 0.1942
- rmse: 0.4407 - mae: 0.2469 - mape: 7.7211
Epoch 571: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1908 - mse:
0.1908 - rmse: 0.4368 - mae: 0.2445 - mape: 7.6527 - val_loss: 0.1908 - val_mse:
0.1908 - val_rmse: 0.4368 - val_mae: 0.2456 - val_mape: 7.7630 - lr: 1.0000e-04
Epoch 572/2000
311/318 [=============================>.] - ETA: 0s - loss: 0.1907 - mse: 0.1907
- rmse: 0.4367 - mae: 0.2456 - mape: 7.7000
Epoch 572: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse:
0.1920 - rmse: 0.4381 - mae: 0.2464 - mape: 7.7222 - val_loss: 0.1925 - val_mse:
0.1925 - val_rmse: 0.4388 - val_mae: 0.2474 - val_mape: 7.8477 - lr: 1.0000e-04
Epoch 573/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1900 - mse: 0.1900
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- rmse: 0.4359 - mae: 0.2448 - mape: 7.6786
Epoch 573: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1918 - mse:
0.1918 - rmse: 0.4379 - mae: 0.2454 - mape: 7.6895 - val_loss: 0.1958 - val_mse:
0.1958 - val_rmse: 0.4425 - val_mae: 0.2480 - val_mape: 7.7163 - lr: 1.0000e-04
Epoch 574/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1935 - mse: 0.1935
- rmse: 0.4399 - mae: 0.2460 - mape: 7.7059
Epoch 574: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4371 - mae: 0.2452 - mape: 7.6869 - val_loss: 0.1897 - val_mse:
0.1897 - val_rmse: 0.4355 - val_mae: 0.2444 - val_mape: 7.7091 - lr: 1.0000e-04
Epoch 575/2000
290/318 [==========================>…] - ETA: 0s - loss: 0.1924 - mse: 0.1924
- rmse: 0.4387 - mae: 0.2455 - mape: 7.6925
Epoch 575: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1908 - mse:
0.1908 - rmse: 0.4368 - mae: 0.2445 - mape: 7.6680 - val_loss: 0.1896 - val_mse:
0.1896 - val_rmse: 0.4354 - val_mae: 0.2440 - val_mape: 7.6338 - lr: 1.0000e-04
Epoch 576/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1915 - mse: 0.1915
- rmse: 0.4376 - mae: 0.2447 - mape: 7.6595
Epoch 576: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1918 - mse:
0.1918 - rmse: 0.4379 - mae: 0.2450 - mape: 7.6738 - val_loss: 0.1896 - val_mse:
0.1896 - val_rmse: 0.4354 - val_mae: 0.2437 - val_mape: 7.6235 - lr: 1.0000e-04
Epoch 577/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1913 - mse: 0.1913
- rmse: 0.4374 - mae: 0.2452 - mape: 7.6821
Epoch 577: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4379 - mae: 0.2451 - mape: 7.6792 - val_loss: 0.1895 - val_mse:
0.1895 - val_rmse: 0.4353 - val_mae: 0.2451 - val_mape: 7.6552 - lr: 1.0000e-04
Epoch 578/2000
288/318 [==========================>…] - ETA: 0s - loss: 0.1932 - mse: 0.1932
- rmse: 0.4395 - mae: 0.2472 - mape: 7.7378
Epoch 578: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1906 - mse:
0.1906 - rmse: 0.4366 - mae: 0.2448 - mape: 7.6770 - val_loss: 0.1914 - val_mse:
0.1914 - val_rmse: 0.4375 - val_mae: 0.2446 - val_mape: 7.5869 - lr: 1.0000e-04
Epoch 579/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1910 - mse: 0.1910
- rmse: 0.4370 - mae: 0.2444 - mape: 7.6477
Epoch 579: val_loss did not improve from 0.18939
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2449 - mape: 7.6619 - val_loss: 0.1906 - val_mse:
0.1906 - val_rmse: 0.4366 - val_mae: 0.2449 - val_mape: 7.7505 - lr: 1.0000e-04
Epoch 580/2000

312/318 [============================>.] - ETA: 0s - loss: 0.1906 - mse: 0.1906
- rmse: 0.4365 - mae: 0.2444 - mape: 7.6721
Epoch 580: val_loss improved from 0.18939 to 0.18935, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4373 - mae: 0.2448 - mape: 7.6818 - val_loss: 0.1894 - val_mse:
0.1894 - val_rmse: 0.4351 - val_mae: 0.2424 - val_mape: 7.5774 - lr: 1.0000e-04
Epoch 581/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1914 - mse: 0.1914
- rmse: 0.4375 - mae: 0.2446 - mape: 7.6741
Epoch 581: val_loss did not improve from 0.18935
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4371 - mae: 0.2448 - mape: 7.6680 - val_loss: 0.1910 - val_mse:
0.1910 - val_rmse: 0.4370 - val_mae: 0.2466 - val_mape: 7.8146 - lr: 1.0000e-04
Epoch 582/2000
311/318 [============================>.] - ETA: 0s - loss: 0.1914 - mse: 0.1914
- rmse: 0.4375 - mae: 0.2452 - mape: 7.6822
Epoch 582: val_loss did not improve from 0.18935
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2452 - mape: 7.6820 - val_loss: 0.1906 - val_mse:
0.1906 - val_rmse: 0.4366 - val_mae: 0.2481 - val_mape: 7.8484 - lr: 1.0000e-04
Epoch 583/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1894 - mse: 0.1894
- rmse: 0.4352 - mae: 0.2441 - mape: 7.6445
Epoch 583: val_loss improved from 0.18935 to 0.18917, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse:
0.1907 - rmse: 0.4367 - mae: 0.2449 - mape: 7.6813 - val_loss: 0.1892 - val_mse:
0.1892 - val_rmse: 0.4349 - val_mae: 0.2438 - val_mape: 7.6482 - lr: 1.0000e-04
Epoch 584/2000
288/318 [==========================>…] - ETA: 0s - loss: 0.1922 - mse: 0.1922
- rmse: 0.4385 - mae: 0.2461 - mape: 7.7075
Epoch 584: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4372 - mae: 0.2455 - mape: 7.6862 - val_loss: 0.1915 - val_mse:
0.1915 - val_rmse: 0.4376 - val_mae: 0.2447 - val_mape: 7.6297 - lr: 1.0000e-04
Epoch 585/2000
300/318 [============================>..] - ETA: 0s - loss: 0.1906 - mse: 0.1906
- rmse: 0.4365 - mae: 0.2446 - mape: 7.6597
Epoch 585: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1908 - mse:
0.1908 - rmse: 0.4368 - mae: 0.2450 - mape: 7.6723 - val_loss: 0.1951 - val_mse:
0.1951 - val_rmse: 0.4417 - val_mae: 0.2514 - val_mape: 7.9102 - lr: 1.0000e-04
Epoch 586/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1920 - mse: 0.1920
- rmse: 0.4382 - mae: 0.2455 - mape: 7.7041
Epoch 586: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:

0.1915 - rmse: 0.4376 - mae: 0.2452 - mape: 7.6887 - val_loss: 0.1893 - val_mse:
0.1893 - val_rmse: 0.4351 - val_mae: 0.2421 - val_mape: 7.5735 - lr: 1.0000e-04
Epoch 587/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.1912 - mse: 0.1912
- rmse: 0.4373 - mae: 0.2454 - mape: 7.6827
Epoch 587: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4376 - mae: 0.2451 - mape: 7.6765 - val_loss: 0.1898 - val_mse:
0.1898 - val_rmse: 0.4356 - val_mae: 0.2421 - val_mape: 7.5147 - lr: 1.0000e-04
Epoch 588/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1922 - mse: 0.1922
- rmse: 0.4384 - mae: 0.2453 - mape: 7.6783
Epoch 588: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1906 - mse:
0.1906 - rmse: 0.4365 - mae: 0.2444 - mape: 7.6590 - val_loss: 0.1905 - val_mse:
0.1905 - val_rmse: 0.4365 - val_mae: 0.2430 - val_mape: 7.6328 - lr: 1.0000e-04
Epoch 589/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1908 - mse: 0.1908
- rmse: 0.4368 - mae: 0.2450 - mape: 7.6704
Epoch 589: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1921 - mse:
0.1921 - rmse: 0.4383 - mae: 0.2455 - mape: 7.6868 - val_loss: 0.1914 - val_mse:
0.1914 - val_rmse: 0.4375 - val_mae: 0.2452 - val_mape: 7.6527 - lr: 1.0000e-04
Epoch 590/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1911 - mse: 0.1911
- rmse: 0.4371 - mae: 0.2450 - mape: 7.6880
Epoch 590: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1906 - mse:
0.1906 - rmse: 0.4365 - mae: 0.2449 - mape: 7.6849 - val_loss: 0.1900 - val_mse:
0.1900 - val_rmse: 0.4358 - val_mae: 0.2439 - val_mape: 7.5977 - lr: 1.0000e-04
Epoch 591/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1910 - mse: 0.1910
- rmse: 0.4370 - mae: 0.2447 - mape: 7.6697
Epoch 591: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4372 - mae: 0.2448 - mape: 7.6784 - val_loss: 0.1904 - val_mse:
0.1904 - val_rmse: 0.4364 - val_mae: 0.2463 - val_mape: 7.7161 - lr: 1.0000e-04
Epoch 592/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1907 - mse: 0.1907
- rmse: 0.4366 - mae: 0.2446 - mape: 7.6696
Epoch 592: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4371 - mae: 0.2450 - mape: 7.6817 - val_loss: 0.1901 - val_mse:
0.1901 - val_rmse: 0.4360 - val_mae: 0.2441 - val_mape: 7.6853 - lr: 1.0000e-04
Epoch 593/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1925 - mse: 0.1925
- rmse: 0.4388 - mae: 0.2451 - mape: 7.6891
Epoch 593: val_loss did not improve from 0.18917

318/318 [==============================] - 1s 3ms/step - loss: 0.1919 - mse: 0.1919 - rmse: 0.4380 - mae: 0.2449 - mape: 7.6768 - val_loss: 0.1903 - val_mse: 0.1903 - val_rmse: 0.4363 - val_mae: 0.2446 - val_mape: 7.6232 - lr: 1.0000e-04
Epoch 594/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1893 - mse: 0.1893 - rmse: 0.4351 - mae: 0.2434 - mape: 7.6299
Epoch 594: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse: 0.1909 - rmse: 0.4369 - mae: 0.2446 - mape: 7.6638 - val_loss: 0.1910 - val_mse: 0.1910 - val_rmse: 0.4370 - val_mae: 0.2475 - val_mape: 7.7636 - lr: 1.0000e-04
Epoch 595/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1877 - mse: 0.1877 - rmse: 0.4333 - mae: 0.2440 - mape: 7.6475
Epoch 595: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1908 - mse: 0.1908 - rmse: 0.4368 - mae: 0.2452 - mape: 7.6816 - val_loss: 0.1898 - val_mse: 0.1898 - val_rmse: 0.4356 - val_mae: 0.2441 - val_mape: 7.6634 - lr: 1.0000e-04
Epoch 596/2000
297/318 [==========================>..] - ETA: 0s - loss: 0.1912 - mse: 0.1912 - rmse: 0.4372 - mae: 0.2460 - mape: 7.7066
Epoch 596: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse: 0.1910 - rmse: 0.4370 - mae: 0.2453 - mape: 7.6836 - val_loss: 0.1903 - val_mse: 0.1903 - val_rmse: 0.4363 - val_mae: 0.2435 - val_mape: 7.6826 - lr: 1.0000e-04
Epoch 597/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.1921 - mse: 0.1921 - rmse: 0.4383 - mae: 0.2459 - mape: 7.6957
Epoch 597: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse: 0.1917 - rmse: 0.4378 - mae: 0.2456 - mape: 7.6870 - val_loss: 0.1894 - val_mse: 0.1894 - val_rmse: 0.4352 - val_mae: 0.2440 - val_mape: 7.6637 - lr: 1.0000e-04
Epoch 598/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1904 - mse: 0.1904 - rmse: 0.4364 - mae: 0.2446 - mape: 7.6691
Epoch 598: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse: 0.1917 - rmse: 0.4379 - mae: 0.2453 - mape: 7.6884 - val_loss: 0.1893 - val_mse: 0.1893 - val_rmse: 0.4351 - val_mae: 0.2438 - val_mape: 7.6823 - lr: 1.0000e-04
Epoch 599/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1909 - mse: 0.1909 - rmse: 0.4369 - mae: 0.2447 - mape: 7.6700
Epoch 599: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse: 0.1911 - rmse: 0.4372 - mae: 0.2451 - mape: 7.6827 - val_loss: 0.1894 - val_mse: 0.1894 - val_rmse: 0.4353 - val_mae: 0.2428 - val_mape: 7.5857 - lr: 1.0000e-04
Epoch 600/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1917 - mse: 0.1917 - rmse: 0.4378 - mae: 0.2456 - mape: 7.7099

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Epoch 600: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse:
0.1910 - rmse: 0.4371 - mae: 0.2447 - mape: 7.6739 - val_loss: 0.1895 - val_mse:
0.1895 - val_rmse: 0.4353 - val_mae: 0.2414 - val_mape: 7.4955 - lr: 1.0000e-04
Epoch 601/2000
316/318 [=============================>.] - ETA: 0s - loss: 0.1907 - mse: 0.1907
- rmse: 0.4366 - mae: 0.2450 - mape: 7.6729
Epoch 601: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1906 - mse:
0.1906 - rmse: 0.4366 - mae: 0.2449 - mape: 7.6776 - val_loss: 0.1895 - val_mse:
0.1895 - val_rmse: 0.4353 - val_mae: 0.2414 - val_mape: 7.5273 - lr: 1.0000e-04
Epoch 602/2000
318/318 [==============================] - ETA: 0s - loss: 0.1907 - mse: 0.1907
- rmse: 0.4367 - mae: 0.2443 - mape: 7.6547
Epoch 602: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse:
0.1907 - rmse: 0.4367 - mae: 0.2443 - mape: 7.6547 - val_loss: 0.1902 - val_mse:
0.1902 - val_rmse: 0.4362 - val_mae: 0.2420 - val_mape: 7.5058 - lr: 1.0000e-04
Epoch 603/2000
290/318 [==========================>…] - ETA: 0s - loss: 0.1927 - mse: 0.1927
- rmse: 0.4389 - mae: 0.2464 - mape: 7.7188
Epoch 603: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4372 - mae: 0.2452 - mape: 7.6814 - val_loss: 0.1906 - val_mse:
0.1906 - val_rmse: 0.4366 - val_mae: 0.2428 - val_mape: 7.5333 - lr: 1.0000e-04
Epoch 604/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1909 - mse: 0.1909
- rmse: 0.4369 - mae: 0.2442 - mape: 7.6501
Epoch 604: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4370 - mae: 0.2447 - mape: 7.6704 - val_loss: 0.1895 - val_mse:
0.1895 - val_rmse: 0.4353 - val_mae: 0.2442 - val_mape: 7.6427 - lr: 1.0000e-04
Epoch 605/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1906 - mse: 0.1906
- rmse: 0.4365 - mae: 0.2454 - mape: 7.6840
Epoch 605: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse:
0.1910 - rmse: 0.4371 - mae: 0.2450 - mape: 7.6806 - val_loss: 0.1911 - val_mse:
0.1911 - val_rmse: 0.4371 - val_mae: 0.2425 - val_mape: 7.5724 - lr: 1.0000e-04
Epoch 606/2000
304/318 [============================>..] - ETA: 0s - loss: 0.1912 - mse: 0.1912
- rmse: 0.4373 - mae: 0.2452 - mape: 7.6744
Epoch 606: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2452 - mape: 7.6775 - val_loss: 0.1916 - val_mse:
0.1916 - val_rmse: 0.4377 - val_mae: 0.2430 - val_mape: 7.5120 - lr: 1.0000e-04
Epoch 607/2000
318/318 [==============================] - ETA: 0s - loss: 0.1920 - mse: 0.1920
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- rmse: 0.4382 - mae: 0.2453 - mape: 7.6840
Epoch 607: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse:
0.1920 - rmse: 0.4382 - mae: 0.2453 - mape: 7.6840 - val_loss: 0.1916 - val_mse:
0.1916 - val_rmse: 0.4377 - val_mae: 0.2448 - val_mape: 7.7249 - lr: 1.0000e-04
Epoch 608/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1921 - mse: 0.1921
- rmse: 0.4383 - mae: 0.2451 - mape: 7.6825
Epoch 608: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2447 - mape: 7.6743 - val_loss: 0.1894 - val_mse:
0.1894 - val_rmse: 0.4352 - val_mae: 0.2410 - val_mape: 7.5140 - lr: 1.0000e-04
Epoch 609/2000
309/318 [============================>.] - ETA: 0s - loss: 0.1886 - mse: 0.1886
- rmse: 0.4342 - mae: 0.2430 - mape: 7.6109
Epoch 609: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1908 - mse:
0.1908 - rmse: 0.4368 - mae: 0.2444 - mape: 7.6536 - val_loss: 0.1899 - val_mse:
0.1899 - val_rmse: 0.4358 - val_mae: 0.2432 - val_mape: 7.5651 - lr: 1.0000e-04
Epoch 610/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1916 - mse: 0.1916
- rmse: 0.4378 - mae: 0.2446 - mape: 7.6556
Epoch 610: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4371 - mae: 0.2445 - mape: 7.6533 - val_loss: 0.1903 - val_mse:
0.1903 - val_rmse: 0.4362 - val_mae: 0.2491 - val_mape: 7.9002 - lr: 1.0000e-04
Epoch 611/2000
309/318 [============================>.] - ETA: 0s - loss: 0.1887 - mse: 0.1887
- rmse: 0.4344 - mae: 0.2443 - mape: 7.6688
Epoch 611: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse:
0.1907 - rmse: 0.4367 - mae: 0.2448 - mape: 7.6741 - val_loss: 0.1901 - val_mse:
0.1901 - val_rmse: 0.4360 - val_mae: 0.2430 - val_mape: 7.6073 - lr: 1.0000e-04
Epoch 612/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1894 - mse: 0.1894
- rmse: 0.4352 - mae: 0.2440 - mape: 7.6470
Epoch 612: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse:
0.1907 - rmse: 0.4367 - mae: 0.2445 - mape: 7.6575 - val_loss: 0.1899 - val_mse:
0.1899 - val_rmse: 0.4358 - val_mae: 0.2435 - val_mape: 7.6052 - lr: 1.0000e-04
Epoch 613/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1905 - mse: 0.1905
- rmse: 0.4365 - mae: 0.2446 - mape: 7.6728
Epoch 613: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse:
0.1907 - rmse: 0.4367 - mae: 0.2448 - mape: 7.6739 - val_loss: 0.1901 - val_mse:
0.1901 - val_rmse: 0.4360 - val_mae: 0.2438 - val_mape: 7.6032 - lr: 1.0000e-04
Epoch 614/2000

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288/318 [===========================>…] - ETA: 0s - loss: 0.1915 - mse: 0.1915
- rmse: 0.4376 - mae: 0.2455 - mape: 7.6992
Epoch 614: val_loss did not improve from 0.18917
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse:
0.1920 - rmse: 0.4382 - mae: 0.2450 - mape: 7.6833 - val_loss: 0.1900 - val_mse:
0.1900 - val_rmse: 0.4359 - val_mae: 0.2447 - val_mape: 7.6404 - lr: 1.0000e-04
Epoch 615/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.1906 - mse: 0.1906
- rmse: 0.4366 - mae: 0.2449 - mape: 7.6703
Epoch 615: val_loss improved from 0.18917 to 0.18905, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4371 - mae: 0.2449 - mape: 7.6696 - val_loss: 0.1891 - val_mse:
0.1891 - val_rmse: 0.4348 - val_mae: 0.2431 - val_mape: 7.6378 - lr: 1.0000e-04
Epoch 616/2000
311/318 [=============================>.] - ETA: 0s - loss: 0.1916 - mse: 0.1916
- rmse: 0.4377 - mae: 0.2445 - mape: 7.6751
Epoch 616: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4371 - mae: 0.2445 - mape: 7.6696 - val_loss: 0.1896 - val_mse:
0.1896 - val_rmse: 0.4354 - val_mae: 0.2431 - val_mape: 7.5716 - lr: 1.0000e-04
Epoch 617/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.1916 - mse: 0.1916
- rmse: 0.4377 - mae: 0.2453 - mape: 7.6865
Epoch 617: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2450 - mape: 7.6780 - val_loss: 0.1891 - val_mse:
0.1891 - val_rmse: 0.4348 - val_mae: 0.2438 - val_mape: 7.6346 - lr: 1.0000e-04
Epoch 618/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.1913 - mse: 0.1913
- rmse: 0.4374 - mae: 0.2452 - mape: 7.6966
Epoch 618: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4369 - mae: 0.2450 - mape: 7.6906 - val_loss: 0.1910 - val_mse:
0.1910 - val_rmse: 0.4370 - val_mae: 0.2436 - val_mape: 7.5639 - lr: 1.0000e-04
Epoch 619/2000
317/318 [=============================>.] - ETA: 0s - loss: 0.1905 - mse: 0.1905
- rmse: 0.4365 - mae: 0.2441 - mape: 7.6394
Epoch 619: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse:
0.1907 - rmse: 0.4367 - mae: 0.2442 - mape: 7.6423 - val_loss: 0.1901 - val_mse:
0.1901 - val_rmse: 0.4360 - val_mae: 0.2439 - val_mape: 7.7046 - lr: 1.0000e-04
Epoch 620/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.1922 - mse: 0.1922
- rmse: 0.4384 - mae: 0.2455 - mape: 7.6896
Epoch 620: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4379 - mae: 0.2454 - mape: 7.6871 - val_loss: 0.1907 - val_mse:
```

0.1907 - val_rmse: 0.4367 - val_mae: 0.2469 - val_mape: 7.7501 - lr: 1.0000e-04
Epoch 621/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1920 - mse: 0.1920
- rmse: 0.4381 - mae: 0.2456 - mape: 7.6874
Epoch 621: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse:
0.1910 - rmse: 0.4371 - mae: 0.2450 - mape: 7.6746 - val_loss: 0.1903 - val_mse:
0.1903 - val_rmse: 0.4363 - val_mae: 0.2411 - val_mape: 7.4804 - lr: 1.0000e-04
Epoch 622/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1918 - mse: 0.1918
- rmse: 0.4379 - mae: 0.2447 - mape: 7.6676
Epoch 622: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2446 - mape: 7.6643 - val_loss: 0.1893 - val_mse:
0.1893 - val_rmse: 0.4351 - val_mae: 0.2447 - val_mape: 7.6741 - lr: 1.0000e-04
Epoch 623/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1909 - mse: 0.1909
- rmse: 0.4369 - mae: 0.2456 - mape: 7.6901
Epoch 623: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4369 - mae: 0.2453 - mape: 7.6863 - val_loss: 0.1899 - val_mse:
0.1899 - val_rmse: 0.4358 - val_mae: 0.2453 - val_mape: 7.7483 - lr: 1.0000e-04
Epoch 624/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1906 - mse: 0.1906
- rmse: 0.4365 - mae: 0.2451 - mape: 7.6837
Epoch 624: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4373 - mae: 0.2452 - mape: 7.6817 - val_loss: 0.1908 - val_mse:
0.1908 - val_rmse: 0.4368 - val_mae: 0.2422 - val_mape: 7.5119 - lr: 1.0000e-04
Epoch 625/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1900 - mse: 0.1900
- rmse: 0.4359 - mae: 0.2446 - mape: 7.6492
Epoch 625: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4369 - mae: 0.2448 - mape: 7.6628 - val_loss: 0.1896 - val_mse:
0.1896 - val_rmse: 0.4354 - val_mae: 0.2413 - val_mape: 7.5111 - lr: 1.0000e-04
Epoch 626/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1910 - mse: 0.1910
- rmse: 0.4371 - mae: 0.2444 - mape: 7.6560
Epoch 626: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1917 - mse:
0.1917 - rmse: 0.4378 - mae: 0.2444 - mape: 7.6586 - val_loss: 0.1896 - val_mse:
0.1896 - val_rmse: 0.4354 - val_mae: 0.2441 - val_mape: 7.6094 - lr: 1.0000e-04
Epoch 627/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1917 - mse: 0.1917
- rmse: 0.4378 - mae: 0.2459 - mape: 7.7003
Epoch 627: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:

0.1911 - rmse: 0.4371 - mae: 0.2451 - mape: 7.6793 - val_loss: 0.1918 - val_mse:
0.1918 - val_rmse: 0.4379 - val_mae: 0.2469 - val_mape: 7.7236 - lr: 1.0000e-04
Epoch 628/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1900 - mse: 0.1900
- rmse: 0.4359 - mae: 0.2443 - mape: 7.6543
Epoch 628: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2449 - mape: 7.6766 - val_loss: 0.1893 - val_mse:
0.1893 - val_rmse: 0.4351 - val_mae: 0.2435 - val_mape: 7.6595 - lr: 1.0000e-04
Epoch 629/2000
315/318 [============================>.] - ETA: 0s - loss: 0.1904 - mse: 0.1904
- rmse: 0.4364 - mae: 0.2441 - mape: 7.6572
Epoch 629: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4372 - mae: 0.2446 - mape: 7.6642 - val_loss: 0.1937 - val_mse:
0.1937 - val_rmse: 0.4401 - val_mae: 0.2480 - val_mape: 7.7242 - lr: 1.0000e-04
Epoch 630/2000
302/318 [==========================>..] - ETA: 0s - loss: 0.1911 - mse: 0.1911
- rmse: 0.4372 - mae: 0.2451 - mape: 7.6915
Epoch 630: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1906 - mse:
0.1906 - rmse: 0.4365 - mae: 0.2444 - mape: 7.6645 - val_loss: 0.1915 - val_mse:
0.1915 - val_rmse: 0.4376 - val_mae: 0.2447 - val_mape: 7.6700 - lr: 1.0000e-04
Epoch 631/2000
313/318 [============================>.] - ETA: 0s - loss: 0.1913 - mse: 0.1913
- rmse: 0.4374 - mae: 0.2449 - mape: 7.6626
Epoch 631: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4373 - mae: 0.2447 - mape: 7.6558 - val_loss: 0.1908 - val_mse:
0.1908 - val_rmse: 0.4368 - val_mae: 0.2451 - val_mape: 7.7820 - lr: 1.0000e-04
Epoch 632/2000
295/318 [=========================>…] - ETA: 0s - loss: 0.1916 - mse: 0.1916
- rmse: 0.4377 - mae: 0.2448 - mape: 7.6829
Epoch 632: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4372 - mae: 0.2444 - mape: 7.6701 - val_loss: 0.1893 - val_mse:
0.1893 - val_rmse: 0.4351 - val_mae: 0.2412 - val_mape: 7.5098 - lr: 1.0000e-04
Epoch 633/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1894 - mse: 0.1894
- rmse: 0.4352 - mae: 0.2437 - mape: 7.6468
Epoch 633: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4376 - mae: 0.2448 - mape: 7.6706 - val_loss: 0.1902 - val_mse:
0.1902 - val_rmse: 0.4361 - val_mae: 0.2447 - val_mape: 7.6655 - lr: 1.0000e-04
Epoch 634/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1908 - mse: 0.1908
- rmse: 0.4368 - mae: 0.2440 - mape: 7.6358
Epoch 634: val_loss did not improve from 0.18905

318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse: 0.1912 - rmse: 0.4373 - mae: 0.2443 - mape: 7.6553 - val_loss: 0.1899 - val_mse: 0.1899 - val_rmse: 0.4358 - val_mae: 0.2433 - val_mape: 7.6303 - lr: 1.0000e-04
Epoch 635/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1895 - mse: 0.1895 - rmse: 0.4353 - mae: 0.2441 - mape: 7.6552
Epoch 635: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse: 0.1911 - rmse: 0.4371 - mae: 0.2447 - mape: 7.6732 - val_loss: 0.1900 - val_mse: 0.1900 - val_rmse: 0.4359 - val_mae: 0.2443 - val_mape: 7.6744 - lr: 1.0000e-04
Epoch 636/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1905 - mse: 0.1905 - rmse: 0.4365 - mae: 0.2448 - mape: 7.6732
Epoch 636: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse: 0.1920 - rmse: 0.4381 - mae: 0.2456 - mape: 7.6913 - val_loss: 0.1917 - val_mse: 0.1917 - val_rmse: 0.4378 - val_mae: 0.2456 - val_mape: 7.6897 - lr: 1.0000e-04
Epoch 637/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1904 - mse: 0.1904 - rmse: 0.4363 - mae: 0.2447 - mape: 7.6662
Epoch 637: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1905 - mse: 0.1905 - rmse: 0.4365 - mae: 0.2442 - mape: 7.6463 - val_loss: 0.1899 - val_mse: 0.1899 - val_rmse: 0.4358 - val_mae: 0.2474 - val_mape: 7.8326 - lr: 1.0000e-04
Epoch 638/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1911 - mse: 0.1911 - rmse: 0.4372 - mae: 0.2446 - mape: 7.6672
Epoch 638: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1905 - mse: 0.1905 - rmse: 0.4364 - mae: 0.2444 - mape: 7.6573 - val_loss: 0.1901 - val_mse: 0.1901 - val_rmse: 0.4360 - val_mae: 0.2457 - val_mape: 7.7767 - lr: 1.0000e-04
Epoch 639/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1918 - mse: 0.1918 - rmse: 0.4380 - mae: 0.2452 - mape: 7.6817
Epoch 639: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse: 0.1907 - rmse: 0.4367 - mae: 0.2445 - mape: 7.6647 - val_loss: 0.1917 - val_mse: 0.1917 - val_rmse: 0.4379 - val_mae: 0.2428 - val_mape: 7.5220 - lr: 1.0000e-04
Epoch 640/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1911 - mse: 0.1911 - rmse: 0.4371 - mae: 0.2452 - mape: 7.6782
Epoch 640: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1906 - mse: 0.1906 - rmse: 0.4366 - mae: 0.2442 - mape: 7.6543 - val_loss: 0.1899 - val_mse: 0.1899 - val_rmse: 0.4357 - val_mae: 0.2411 - val_mape: 7.4918 - lr: 1.0000e-04
Epoch 641/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1904 - mse: 0.1904 - rmse: 0.4364 - mae: 0.2441 - mape: 7.6498

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Epoch 641: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4369 - mae: 0.2445 - mape: 7.6602 - val_loss: 0.1896 - val_mse:
0.1896 - val_rmse: 0.4354 - val_mae: 0.2436 - val_mape: 7.6130 - lr: 1.0000e-04
Epoch 642/2000
316/318 [=============================>.] - ETA: 0s - loss: 0.1904 - mse: 0.1904
- rmse: 0.4363 - mae: 0.2442 - mape: 7.6578
Epoch 642: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1903 - mse:
0.1903 - rmse: 0.4362 - mae: 0.2442 - mape: 7.6579 - val_loss: 0.1910 - val_mse:
0.1910 - val_rmse: 0.4370 - val_mae: 0.2446 - val_mape: 7.7113 - lr: 1.0000e-04
Epoch 643/2000
318/318 [==============================] - ETA: 0s - loss: 0.1913 - mse: 0.1913
- rmse: 0.4374 - mae: 0.2443 - mape: 7.6619
Epoch 643: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2443 - mape: 7.6619 - val_loss: 0.1910 - val_mse:
0.1910 - val_rmse: 0.4371 - val_mae: 0.2444 - val_mape: 7.5986 - lr: 1.0000e-04
Epoch 644/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1901 - mse: 0.1901
- rmse: 0.4360 - mae: 0.2443 - mape: 7.6616
Epoch 644: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2447 - mape: 7.6526 - val_loss: 0.1910 - val_mse:
0.1910 - val_rmse: 0.4371 - val_mae: 0.2500 - val_mape: 7.9613 - lr: 1.0000e-04
Epoch 645/2000
297/318 [==========================>..] - ETA: 0s - loss: 0.1931 - mse: 0.1931
- rmse: 0.4394 - mae: 0.2462 - mape: 7.7175
Epoch 645: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4373 - mae: 0.2455 - mape: 7.6936 - val_loss: 0.1899 - val_mse:
0.1899 - val_rmse: 0.4358 - val_mae: 0.2431 - val_mape: 7.5823 - lr: 1.0000e-04
Epoch 646/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1916 - mse: 0.1916
- rmse: 0.4377 - mae: 0.2446 - mape: 7.6563
Epoch 646: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1908 - mse:
0.1908 - rmse: 0.4369 - mae: 0.2439 - mape: 7.6481 - val_loss: 0.1891 - val_mse:
0.1891 - val_rmse: 0.4348 - val_mae: 0.2433 - val_mape: 7.6315 - lr: 1.0000e-04
Epoch 647/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1918 - mse: 0.1918
- rmse: 0.4379 - mae: 0.2451 - mape: 7.6687
Epoch 647: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1906 - mse:
0.1906 - rmse: 0.4366 - mae: 0.2446 - mape: 7.6572 - val_loss: 0.1918 - val_mse:
0.1918 - val_rmse: 0.4379 - val_mae: 0.2458 - val_mape: 7.6671 - lr: 1.0000e-04
Epoch 648/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1916 - mse: 0.1916
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- rmse: 0.4377 - mae: 0.2445 - mape: 7.6506
Epoch 648: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4371 - mae: 0.2442 - mape: 7.6479 - val_loss: 0.1897 - val_mse:
0.1897 - val_rmse: 0.4355 - val_mae: 0.2435 - val_mape: 7.5998 - lr: 1.0000e-04
Epoch 649/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1914 - mse: 0.1914
- rmse: 0.4374 - mae: 0.2439 - mape: 7.6434
Epoch 649: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2443 - mape: 7.6606 - val_loss: 0.1956 - val_mse:
0.1956 - val_rmse: 0.4422 - val_mae: 0.2463 - val_mape: 7.6308 - lr: 1.0000e-04
Epoch 650/2000
307/318 [============================>..] - ETA: 0s - loss: 0.1915 - mse: 0.1915
- rmse: 0.4376 - mae: 0.2445 - mape: 7.6614
Epoch 650: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse:
0.1910 - rmse: 0.4371 - mae: 0.2445 - mape: 7.6601 - val_loss: 0.1904 - val_mse:
0.1904 - val_rmse: 0.4364 - val_mae: 0.2422 - val_mape: 7.4985 - lr: 1.0000e-04
Epoch 651/2000
299/318 [==========================>..] - ETA: 0s - loss: 0.1921 - mse: 0.1921
- rmse: 0.4383 - mae: 0.2445 - mape: 7.6609
Epoch 651: val_loss did not improve from 0.18905
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4373 - mae: 0.2443 - mape: 7.6538 - val_loss: 0.1940 - val_mse:
0.1940 - val_rmse: 0.4404 - val_mae: 0.2447 - val_mape: 7.5355 - lr: 1.0000e-04
Epoch 652/2000
318/318 [==============================] - ETA: 0s - loss: 0.1912 - mse: 0.1912
- rmse: 0.4373 - mae: 0.2450 - mape: 7.6606
Epoch 652: val_loss improved from 0.18905 to 0.18895, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4373 - mae: 0.2450 - mape: 7.6606 - val_loss: 0.1890 - val_mse:
0.1890 - val_rmse: 0.4347 - val_mae: 0.2427 - val_mape: 7.6116 - lr: 1.0000e-04
Epoch 653/2000
298/318 [==========================>..] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4348 - mae: 0.2438 - mape: 7.6526
Epoch 653: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1905 - mse:
0.1905 - rmse: 0.4365 - mae: 0.2440 - mape: 7.6457 - val_loss: 0.1890 - val_mse:
0.1890 - val_rmse: 0.4347 - val_mae: 0.2453 - val_mape: 7.6970 - lr: 1.0000e-04
Epoch 654/2000
299/318 [==========================>..] - ETA: 0s - loss: 0.1901 - mse: 0.1901
- rmse: 0.4360 - mae: 0.2453 - mape: 7.7006
Epoch 654: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1908 - mse:
0.1908 - rmse: 0.4368 - mae: 0.2451 - mape: 7.6853 - val_loss: 0.1894 - val_mse:
0.1894 - val_rmse: 0.4352 - val_mae: 0.2433 - val_mape: 7.6318 - lr: 1.0000e-04
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Epoch 655/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1914 - mse: 0.1914
- rmse: 0.4375 - mae: 0.2451 - mape: 7.6859
Epoch 655: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4372 - mae: 0.2450 - mape: 7.6795 - val_loss: 0.1894 - val_mse:
0.1894 - val_rmse: 0.4352 - val_mae: 0.2418 - val_mape: 7.5605 - lr: 1.0000e-04
Epoch 656/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1909 - mse: 0.1909
- rmse: 0.4369 - mae: 0.2448 - mape: 7.6723
Epoch 656: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1906 - mse:
0.1906 - rmse: 0.4366 - mae: 0.2445 - mape: 7.6596 - val_loss: 0.1897 - val_mse:
0.1897 - val_rmse: 0.4356 - val_mae: 0.2443 - val_mape: 7.6415 - lr: 1.0000e-04
Epoch 657/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1915 - mse: 0.1915
- rmse: 0.4376 - mae: 0.2449 - mape: 7.6708
Epoch 657: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4376 - mae: 0.2450 - mape: 7.6739 - val_loss: 0.1891 - val_mse:
0.1891 - val_rmse: 0.4348 - val_mae: 0.2432 - val_mape: 7.6297 - lr: 1.0000e-04
Epoch 658/2000
314/318 [============================>.] - ETA: 0s - loss: 0.1912 - mse: 0.1912
- rmse: 0.4373 - mae: 0.2440 - mape: 7.6402
Epoch 658: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4369 - mae: 0.2439 - mape: 7.6376 - val_loss: 0.1892 - val_mse:
0.1892 - val_rmse: 0.4350 - val_mae: 0.2440 - val_mape: 7.6747 - lr: 1.0000e-04
Epoch 659/2000
309/318 [============================>.] - ETA: 0s - loss: 0.1916 - mse: 0.1916
- rmse: 0.4377 - mae: 0.2446 - mape: 7.6621
Epoch 659: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4369 - mae: 0.2446 - mape: 7.6580 - val_loss: 0.1893 - val_mse:
0.1893 - val_rmse: 0.4351 - val_mae: 0.2436 - val_mape: 7.6724 - lr: 1.0000e-04
Epoch 660/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1912 - mse: 0.1912
- rmse: 0.4373 - mae: 0.2449 - mape: 7.6753
Epoch 660: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse:
0.1907 - rmse: 0.4367 - mae: 0.2441 - mape: 7.6456 - val_loss: 0.1894 - val_mse:
0.1894 - val_rmse: 0.4352 - val_mae: 0.2422 - val_mape: 7.6051 - lr: 1.0000e-04
Epoch 661/2000
308/318 [============================>.] - ETA: 0s - loss: 0.1910 - mse: 0.1910
- rmse: 0.4370 - mae: 0.2437 - mape: 7.6350
Epoch 661: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1903 - mse:
0.1903 - rmse: 0.4363 - mae: 0.2436 - mape: 7.6410 - val_loss: 0.1914 - val_mse:
```

0.1914 - val_rmse: 0.4375 - val_mae: 0.2445 - val_mape: 7.6037 - lr: 1.0000e-04
Epoch 662/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.1901 - mse: 0.1901
- rmse: 0.4360 - mae: 0.2444 - mape: 7.6586
Epoch 662: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1904 - mse:
0.1904 - rmse: 0.4363 - mae: 0.2443 - mape: 7.6459 - val_loss: 0.1909 - val_mse:
0.1909 - val_rmse: 0.4370 - val_mae: 0.2481 - val_mape: 7.8713 - lr: 1.0000e-04
Epoch 663/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1901 - mse: 0.1901
- rmse: 0.4360 - mae: 0.2441 - mape: 7.6564
Epoch 663: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4370 - mae: 0.2445 - mape: 7.6736 - val_loss: 0.1899 - val_mse:
0.1899 - val_rmse: 0.4358 - val_mae: 0.2433 - val_mape: 7.6115 - lr: 1.0000e-04
Epoch 664/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.1905 - mse: 0.1905
- rmse: 0.4365 - mae: 0.2445 - mape: 7.6614
Epoch 664: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse:
0.1907 - rmse: 0.4367 - mae: 0.2447 - mape: 7.6681 - val_loss: 0.1904 - val_mse:
0.1904 - val_rmse: 0.4364 - val_mae: 0.2452 - val_mape: 7.7364 - lr: 1.0000e-04
Epoch 665/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1909 - mse: 0.1909
- rmse: 0.4370 - mae: 0.2441 - mape: 7.6473
Epoch 665: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2445 - mape: 7.6562 - val_loss: 0.1894 - val_mse:
0.1894 - val_rmse: 0.4352 - val_mae: 0.2469 - val_mape: 7.7977 - lr: 1.0000e-04
Epoch 666/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1906 - mse: 0.1906
- rmse: 0.4366 - mae: 0.2443 - mape: 7.6658
Epoch 666: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4369 - mae: 0.2445 - mape: 7.6665 - val_loss: 0.1901 - val_mse:
0.1901 - val_rmse: 0.4360 - val_mae: 0.2475 - val_mape: 7.7967 - lr: 1.0000e-04
Epoch 667/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1915 - mse: 0.1915
- rmse: 0.4376 - mae: 0.2458 - mape: 7.7034
Epoch 667: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse:
0.1907 - rmse: 0.4367 - mae: 0.2445 - mape: 7.6598 - val_loss: 0.1927 - val_mse:
0.1927 - val_rmse: 0.4390 - val_mae: 0.2451 - val_mape: 7.7677 - lr: 1.0000e-04
Epoch 668/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1917 - mse: 0.1917
- rmse: 0.4379 - mae: 0.2451 - mape: 7.6900
Epoch 668: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1920 - mse:

0.1920 - rmse: 0.4382 - mae: 0.2454 - mape: 7.6909 - val_loss: 0.1912 - val_mse:
0.1912 - val_rmse: 0.4372 - val_mae: 0.2469 - val_mape: 7.7751 - lr: 1.0000e-04
Epoch 669/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1899 - mse: 0.1899
- rmse: 0.4358 - mae: 0.2448 - mape: 7.6727
Epoch 669: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1905 - mse:
0.1905 - rmse: 0.4365 - mae: 0.2452 - mape: 7.6811 - val_loss: 0.1895 - val_mse:
0.1895 - val_rmse: 0.4354 - val_mae: 0.2425 - val_mape: 7.5859 - lr: 1.0000e-04
Epoch 670/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.1923 - mse: 0.1923
- rmse: 0.4386 - mae: 0.2457 - mape: 7.6891
Epoch 670: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4369 - mae: 0.2451 - mape: 7.6834 - val_loss: 0.1900 - val_mse:
0.1900 - val_rmse: 0.4359 - val_mae: 0.2418 - val_mape: 7.4937 - lr: 1.0000e-04
Epoch 671/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1897 - mse: 0.1897
- rmse: 0.4355 - mae: 0.2438 - mape: 7.6384
Epoch 671: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2448 - mape: 7.6690 - val_loss: 0.1902 - val_mse:
0.1902 - val_rmse: 0.4362 - val_mae: 0.2441 - val_mape: 7.6047 - lr: 1.0000e-04
Epoch 672/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1893 - mse: 0.1893
- rmse: 0.4351 - mae: 0.2447 - mape: 7.6683
Epoch 672: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1902 - mse:
0.1902 - rmse: 0.4361 - mae: 0.2444 - mape: 7.6515 - val_loss: 0.1907 - val_mse:
0.1907 - val_rmse: 0.4367 - val_mae: 0.2427 - val_mape: 7.6338 - lr: 1.0000e-04
Epoch 673/2000
318/318 [==============================] - ETA: 0s - loss: 0.1914 - mse: 0.1914
- rmse: 0.4375 - mae: 0.2444 - mape: 7.6593
Epoch 673: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1914 - mse:
0.1914 - rmse: 0.4375 - mae: 0.2444 - mape: 7.6593 - val_loss: 0.1921 - val_mse:
0.1921 - val_rmse: 0.4383 - val_mae: 0.2428 - val_mape: 7.5395 - lr: 1.0000e-04
Epoch 674/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1897 - mse: 0.1897
- rmse: 0.4356 - mae: 0.2436 - mape: 7.6248
Epoch 674: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse:
0.1910 - rmse: 0.4370 - mae: 0.2443 - mape: 7.6525 - val_loss: 0.1894 - val_mse:
0.1894 - val_rmse: 0.4353 - val_mae: 0.2451 - val_mape: 7.6560 - lr: 1.0000e-04
Epoch 675/2000
317/318 [============================>.] - ETA: 0s - loss: 0.1916 - mse: 0.1916
- rmse: 0.4377 - mae: 0.2449 - mape: 7.6729
Epoch 675: val_loss did not improve from 0.18895

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318/318 [==============================] - 1s 3ms/step - loss: 0.1915 - mse:
0.1915 - rmse: 0.4377 - mae: 0.2449 - mape: 7.6727 - val_loss: 0.1894 - val_mse:
0.1894 - val_rmse: 0.4352 - val_mae: 0.2434 - val_mape: 7.6201 - lr: 1.0000e-04
Epoch 676/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1911 - mse: 0.1911
- rmse: 0.4372 - mae: 0.2438 - mape: 7.6333
Epoch 676: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse:
0.1907 - rmse: 0.4367 - mae: 0.2439 - mape: 7.6322 - val_loss: 0.1946 - val_mse:
0.1946 - val_rmse: 0.4412 - val_mae: 0.2471 - val_mape: 7.6575 - lr: 1.0000e-04
Epoch 677/2000
314/318 [============================>.] - ETA: 0s - loss: 0.1907 - mse: 0.1907
- rmse: 0.4367 - mae: 0.2447 - mape: 7.6708
Epoch 677: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1906 - mse:
0.1906 - rmse: 0.4366 - mae: 0.2447 - mape: 7.6675 - val_loss: 0.1961 - val_mse:
0.1961 - val_rmse: 0.4429 - val_mae: 0.2506 - val_mape: 7.9763 - lr: 1.0000e-04
Epoch 678/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2434 - mape: 7.6460
Epoch 678: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4373 - mae: 0.2443 - mape: 7.6555 - val_loss: 0.1928 - val_mse:
0.1928 - val_rmse: 0.4391 - val_mae: 0.2496 - val_mape: 7.9518 - lr: 1.0000e-04
Epoch 679/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1900 - mse: 0.1900
- rmse: 0.4359 - mae: 0.2443 - mape: 7.6566
Epoch 679: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1908 - mse:
0.1908 - rmse: 0.4369 - mae: 0.2443 - mape: 7.6574 - val_loss: 0.1923 - val_mse:
0.1923 - val_rmse: 0.4385 - val_mae: 0.2488 - val_mape: 7.8564 - lr: 1.0000e-04
Epoch 680/2000
297/318 [==========================>..] - ETA: 0s - loss: 0.1920 - mse: 0.1920
- rmse: 0.4382 - mae: 0.2445 - mape: 7.6567
Epoch 680: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1909 - mse:
0.1909 - rmse: 0.4369 - mae: 0.2442 - mape: 7.6506 - val_loss: 0.1906 - val_mse:
0.1906 - val_rmse: 0.4366 - val_mae: 0.2459 - val_mape: 7.7101 - lr: 1.0000e-04
Epoch 681/2000
293/318 [=========================>…] - ETA: 0s - loss: 0.1901 - mse: 0.1901
- rmse: 0.4360 - mae: 0.2432 - mape: 7.6149
Epoch 681: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 4ms/step - loss: 0.1911 - mse:
0.1911 - rmse: 0.4372 - mae: 0.2444 - mape: 7.6572 - val_loss: 0.1893 - val_mse:
0.1893 - val_rmse: 0.4351 - val_mae: 0.2434 - val_mape: 7.6379 - lr: 1.0000e-04
Epoch 682/2000
315/318 [============================>.] - ETA: 0s - loss: 0.1917 - mse: 0.1917
- rmse: 0.4379 - mae: 0.2449 - mape: 7.6712
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Epoch 682: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 4ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2447 - mape: 7.6625 - val_loss: 0.1896 - val_mse:
0.1896 - val_rmse: 0.4354 - val_mae: 0.2448 - val_mape: 7.7012 - lr: 1.0000e-04
Epoch 683/2000
308/318 [=============================>.] - ETA: 0s - loss: 0.1908 - mse: 0.1908
- rmse: 0.4368 - mae: 0.2443 - mape: 7.6420
Epoch 683: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 4ms/step - loss: 0.1906 - mse:
0.1906 - rmse: 0.4366 - mae: 0.2442 - mape: 7.6478 - val_loss: 0.1904 - val_mse:
0.1904 - val_rmse: 0.4363 - val_mae: 0.2431 - val_mape: 7.6524 - lr: 1.0000e-04
Epoch 684/2000
308/318 [=============================>.] - ETA: 0s - loss: 0.1926 - mse: 0.1926
- rmse: 0.4389 - mae: 0.2456 - mape: 7.7055
Epoch 684: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4373 - mae: 0.2448 - mape: 7.6809 - val_loss: 0.1896 - val_mse:
0.1896 - val_rmse: 0.4354 - val_mae: 0.2401 - val_mape: 7.4434 - lr: 1.0000e-04
Epoch 685/2000
301/318 [============================>..] - ETA: 0s - loss: 0.1880 - mse: 0.1880
- rmse: 0.4336 - mae: 0.2431 - mape: 7.6140
Epoch 685: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1908 - mse:
0.1908 - rmse: 0.4368 - mae: 0.2440 - mape: 7.6424 - val_loss: 0.1891 - val_mse:
0.1891 - val_rmse: 0.4348 - val_mae: 0.2421 - val_mape: 7.5874 - lr: 1.0000e-04
Epoch 686/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1915 - mse: 0.1915
- rmse: 0.4376 - mae: 0.2448 - mape: 7.6765
Epoch 686: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse:
0.1910 - rmse: 0.4370 - mae: 0.2441 - mape: 7.6485 - val_loss: 0.1914 - val_mse:
0.1914 - val_rmse: 0.4375 - val_mae: 0.2444 - val_mape: 7.6655 - lr: 1.0000e-04
Epoch 687/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.1907 - mse: 0.1907
- rmse: 0.4367 - mae: 0.2446 - mape: 7.6656
Epoch 687: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1907 - mse:
0.1907 - rmse: 0.4367 - mae: 0.2450 - mape: 7.6795 - val_loss: 0.1938 - val_mse:
0.1938 - val_rmse: 0.4403 - val_mae: 0.2453 - val_mape: 7.5283 - lr: 1.0000e-04
Epoch 688/2000
317/318 [=============================>.] - ETA: 0s - loss: 0.1906 - mse: 0.1906
- rmse: 0.4366 - mae: 0.2439 - mape: 7.6338
Epoch 688: val_loss did not improve from 0.18895
318/318 [==============================] - 1s 3ms/step - loss: 0.1906 - mse:
0.1906 - rmse: 0.4366 - mae: 0.2438 - mape: 7.6316 - val_loss: 0.1892 - val_mse:
0.1892 - val_rmse: 0.4350 - val_mae: 0.2430 - val_mape: 7.6209 - lr: 1.0000e-04
Epoch 689/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1909 - mse: 0.1909
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- rmse: 0.4370 - mae: 0.2447 - mape: 7.6846
Epoch 689: val_loss improved from 0.18895 to 0.18886, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1913 - mse:
0.1913 - rmse: 0.4374 - mae: 0.2449 - mape: 7.6886 - val_loss: 0.1889 - val_mse:
0.1889 - val_rmse: 0.4346 - val_mae: 0.2414 - val_mape: 7.5303 - lr: 1.0000e-04
Epoch 690/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1921 - mse: 0.1921
- rmse: 0.4383 - mae: 0.2450 - mape: 7.6672
Epoch 690: val_loss did not improve from 0.18886
318/318 [==============================] - 1s 3ms/step - loss: 0.1912 - mse:
0.1912 - rmse: 0.4373 - mae: 0.2447 - mape: 7.6592 - val_loss: 0.1916 - val_mse:
0.1916 - val_rmse: 0.4377 - val_mae: 0.2430 - val_mape: 7.6817 - lr: 1.0000e-04
Epoch 691/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1913 - mse: 0.1913
- rmse: 0.4374 - mae: 0.2440 - mape: 7.6302
Epoch 691: val_loss did not improve from 0.18886
318/318 [==============================] - 1s 3ms/step - loss: 0.1910 - mse:
0.1910 - rmse: 0.4370 - mae: 0.2441 - mape: 7.6425 - val_loss: 0.1900 - val_mse:
0.1900 - val_rmse: 0.4359 - val_mae: 0.2437 - val_mape: 7.6857 - lr: 1.0000e-04
Epoch 692/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1927 - mse: 0.1927
- rmse: 0.4390 - mae: 0.2447 - mape: 7.6594
Epoch 692: val_loss did not improve from 0.18886
318/318 [==============================] - 1s 3ms/step - loss: 0.1908 - mse:
0.1908 - rmse: 0.4368 - mae: 0.2441 - mape: 7.6500 - val_loss: 0.1896 - val_mse:
0.1896 - val_rmse: 0.4354 - val_mae: 0.2443 - val_mape: 7.6859 - lr: 1.0000e-04
Epoch 693/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.1881 - mse: 0.1881
- rmse: 0.4337 - mae: 0.2424 - mape: 7.6049
Epoch 693: val_loss improved from 0.18886 to 0.18877, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4346 - mae: 0.2427 - mape: 7.6068 - val_loss: 0.1888 - val_mse:
0.1888 - val_rmse: 0.4345 - val_mae: 0.2425 - val_mape: 7.5870 - lr: 1.0000e-05
Epoch 694/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1885 - mse: 0.1885
- rmse: 0.4341 - mae: 0.2426 - mape: 7.5957
Epoch 694: val_loss improved from 0.18877 to 0.18855, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1889 - mse:
0.1889 - rmse: 0.4346 - mae: 0.2427 - mape: 7.6072 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2423 - val_mape: 7.5929 - lr: 1.0000e-05
Epoch 695/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1875 - mse: 0.1875
- rmse: 0.4330 - mae: 0.2418 - mape: 7.5835
Epoch 695: val_loss improved from 0.18855 to 0.18854, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
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318/318 [==============================] - 1s 3ms/step - loss: 0.1889 - mse:
0.1889 - rmse: 0.4346 - mae: 0.2423 - mape: 7.5865 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2424 - val_mape: 7.5982 - lr: 1.0000e-05
Epoch 696/2000
317/318 [=============================>.] - ETA: 0s - loss: 0.1889 - mse: 0.1889
- rmse: 0.4346 - mae: 0.2427 - mape: 7.6139
Epoch 696: val_loss improved from 0.18854 to 0.18854, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4346 - mae: 0.2427 - mape: 7.6127 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2423 - val_mape: 7.5818 - lr: 1.0000e-05
Epoch 697/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1895 - mse: 0.1895
- rmse: 0.4353 - mae: 0.2427 - mape: 7.5948
Epoch 697: val_loss did not improve from 0.18854
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2423 - mape: 7.5839 - val_loss: 0.1886 - val_mse:
0.1886 - val_rmse: 0.4342 - val_mae: 0.2424 - val_mape: 7.6082 - lr: 1.0000e-05
Epoch 698/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1901 - mse: 0.1901
- rmse: 0.4360 - mae: 0.2429 - mape: 7.6210
Epoch 698: val_loss did not improve from 0.18854
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2425 - mape: 7.6097 - val_loss: 0.1886 - val_mse:
0.1886 - val_rmse: 0.4343 - val_mae: 0.2425 - val_mape: 7.5847 - lr: 1.0000e-05
Epoch 699/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1876 - mse: 0.1876
- rmse: 0.4331 - mae: 0.2418 - mape: 7.5837
Epoch 699: val_loss did not improve from 0.18854
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2424 - mape: 7.5915 - val_loss: 0.1890 - val_mse:
0.1890 - val_rmse: 0.4348 - val_mae: 0.2429 - val_mape: 7.6161 - lr: 1.0000e-05
Epoch 700/2000
318/318 [==============================] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4347 - mae: 0.2424 - mape: 7.5900
Epoch 700: val_loss did not improve from 0.18854
318/318 [==============================] - 1s 3ms/step - loss: 0.1890 - mse:
0.1890 - rmse: 0.4347 - mae: 0.2424 - mape: 7.5900 - val_loss: 0.1886 - val_mse:
0.1886 - val_rmse: 0.4342 - val_mae: 0.2427 - val_mape: 7.6162 - lr: 1.0000e-05
Epoch 701/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1909 - mse: 0.1909
- rmse: 0.4369 - mae: 0.2433 - mape: 7.6250
Epoch 701: val_loss did not improve from 0.18854
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2425 - mape: 7.6064 - val_loss: 0.1886 - val_mse:
0.1886 - val_rmse: 0.4343 - val_mae: 0.2423 - val_mape: 7.5836 - lr: 1.0000e-05
Epoch 702/2000
301/318 [==========================>..] - ETA: 0s - loss: 0.1898 - mse: 0.1898
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- rmse: 0.4357 - mae: 0.2430 - mape: 7.6228
Epoch 702: val_loss improved from 0.18854 to 0.18852, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2426 - mape: 7.6028 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2419 - val_mape: 7.5691 - lr: 1.0000e-05
Epoch 703/2000
296/318 [==========================>.] - ETA: 0s - loss: 0.1894 - mse: 0.1894
- rmse: 0.4352 - mae: 0.2431 - mape: 7.6076
Epoch 703: val_loss improved from 0.18852 to 0.18850, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1889 - mse:
0.1889 - rmse: 0.4346 - mae: 0.2423 - mape: 7.5888 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2420 - val_mape: 7.5831 - lr: 1.0000e-05
Epoch 704/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2422 - mape: 7.5825
Epoch 704: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4345 - mae: 0.2421 - mape: 7.5819 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2425 - val_mape: 7.6202 - lr: 1.0000e-05
Epoch 705/2000
306/318 [============================>..] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4340 - mae: 0.2426 - mape: 7.6097
Epoch 705: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2423 - mape: 7.5971 - val_loss: 0.1886 - val_mse:
0.1886 - val_rmse: 0.4342 - val_mae: 0.2421 - val_mape: 7.5869 - lr: 1.0000e-05
Epoch 706/2000
294/318 [==========================>.] - ETA: 0s - loss: 0.1905 - mse: 0.1905
- rmse: 0.4364 - mae: 0.2433 - mape: 7.6199
Epoch 706: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4345 - mae: 0.2426 - mape: 7.6154 - val_loss: 0.1886 - val_mse:
0.1886 - val_rmse: 0.4343 - val_mae: 0.2417 - val_mape: 7.5573 - lr: 1.0000e-05
Epoch 707/2000
294/318 [==========================>.] - ETA: 0s - loss: 0.1864 - mse: 0.1864
- rmse: 0.4317 - mae: 0.2411 - mape: 7.5527
Epoch 707: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2419 - mape: 7.5704 - val_loss: 0.1888 - val_mse:
0.1888 - val_rmse: 0.4346 - val_mae: 0.2429 - val_mape: 7.6305 - lr: 1.0000e-05
Epoch 708/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.1887 - mse: 0.1887
- rmse: 0.4344 - mae: 0.2422 - mape: 7.5950
Epoch 708: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1889 - mse:
0.1889 - rmse: 0.4346 - mae: 0.2424 - mape: 7.5992 - val_loss: 0.1885 - val_mse:
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0.1885 - val_rmse: 0.4342 - val_mae: 0.2424 - val_mape: 7.6087 - lr: 1.0000e-05
Epoch 709/2000
311/318 [============================>.] - ETA: 0s - loss: 0.1893 - mse: 0.1893
- rmse: 0.4350 - mae: 0.2428 - mape: 7.6161
Epoch 709: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2425 - mape: 7.6082 - val_loss: 0.1886 - val_mse:
0.1886 - val_rmse: 0.4342 - val_mae: 0.2421 - val_mape: 7.5943 - lr: 1.0000e-05
Epoch 710/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2422 - mape: 7.5857
Epoch 710: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2422 - mape: 7.5888 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2421 - val_mape: 7.5931 - lr: 1.0000e-05
Epoch 711/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1879 - mse: 0.1879
- rmse: 0.4335 - mae: 0.2423 - mape: 7.5862
Epoch 711: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2427 - mape: 7.6131 - val_loss: 0.1886 - val_mse:
0.1886 - val_rmse: 0.4343 - val_mae: 0.2419 - val_mape: 7.5882 - lr: 1.0000e-05
Epoch 712/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4348 - mae: 0.2418 - mape: 7.5806
Epoch 712: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2419 - mape: 7.5826 - val_loss: 0.1888 - val_mse:
0.1888 - val_rmse: 0.4345 - val_mae: 0.2420 - val_mape: 7.5566 - lr: 1.0000e-05
Epoch 713/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1862 - mse: 0.1862
- rmse: 0.4316 - mae: 0.2410 - mape: 7.5557
Epoch 713: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2420 - mape: 7.5715 - val_loss: 0.1886 - val_mse:
0.1886 - val_rmse: 0.4342 - val_mae: 0.2426 - val_mape: 7.6209 - lr: 1.0000e-05
Epoch 714/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1889 - mse: 0.1889
- rmse: 0.4346 - mae: 0.2425 - mape: 7.6099
Epoch 714: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2425 - mape: 7.6126 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2419 - val_mape: 7.5718 - lr: 1.0000e-05
Epoch 715/2000
289/318 [==========================>…] - ETA: 0s - loss: 0.1912 - mse: 0.1912
- rmse: 0.4372 - mae: 0.2434 - mape: 7.6283
Epoch 715: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:

0.1888 - rmse: 0.4345 - mae: 0.2422 - mape: 7.5869 - val_loss: 0.1886 - val_mse:
0.1886 - val_rmse: 0.4343 - val_mae: 0.2424 - val_mape: 7.6070 - lr: 1.0000e-05
Epoch 716/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1898 - mse: 0.1898
- rmse: 0.4357 - mae: 0.2431 - mape: 7.6117
Epoch 716: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1889 - mse:
0.1889 - rmse: 0.4346 - mae: 0.2424 - mape: 7.5990 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2423 - val_mape: 7.5879 - lr: 1.0000e-05
Epoch 717/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1897 - mse: 0.1897
- rmse: 0.4355 - mae: 0.2424 - mape: 7.5963
Epoch 717: val_loss did not improve from 0.18850
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2422 - mape: 7.5904 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2424 - val_mape: 7.5898 - lr: 1.0000e-05
Epoch 718/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1908 - mse: 0.1908
- rmse: 0.4368 - mae: 0.2432 - mape: 7.6140
Epoch 718: val_loss improved from 0.18850 to 0.18849, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2425 - mape: 7.5994 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4341 - val_mae: 0.2419 - val_mape: 7.5697 - lr: 1.0000e-05
Epoch 719/2000
313/318 [============================>.] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2420 - mape: 7.5840
Epoch 719: val_loss did not improve from 0.18849
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2420 - mape: 7.5816 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2422 - val_mape: 7.5883 - lr: 1.0000e-05
Epoch 720/2000
317/318 [============================>.] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2424 - mape: 7.5951
Epoch 720: val_loss did not improve from 0.18849
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2424 - mape: 7.5944 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2419 - val_mape: 7.5847 - lr: 1.0000e-05
Epoch 721/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4348 - mae: 0.2425 - mape: 7.6021
Epoch 721: val_loss improved from 0.18849 to 0.18847, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2423 - mape: 7.5987 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4341 - val_mae: 0.2418 - val_mape: 7.5765 - lr: 1.0000e-05
Epoch 722/2000
314/318 [===========================>.] - ETA: 0s - loss: 0.1886 - mse: 0.1886

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- rmse: 0.4343 - mae: 0.2423 - mape: 7.5913
Epoch 722: val_loss did not improve from 0.18847
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2422 - mape: 7.5901 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2417 - val_mape: 7.5790 - lr: 1.0000e-05
Epoch 723/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.1892 - mse: 0.1892
- rmse: 0.4350 - mae: 0.2422 - mape: 7.5826
Epoch 723: val_loss did not improve from 0.18847
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2420 - mape: 7.5803 - val_loss: 0.1887 - val_mse:
0.1887 - val_rmse: 0.4344 - val_mae: 0.2423 - val_mape: 7.6121 - lr: 1.0000e-05
Epoch 724/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1880 - mse: 0.1880
- rmse: 0.4336 - mae: 0.2412 - mape: 7.5567
Epoch 724: val_loss did not improve from 0.18847
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2420 - mape: 7.5853 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2425 - val_mape: 7.6147 - lr: 1.0000e-05
Epoch 725/2000
303/318 [============================>..] - ETA: 0s - loss: 0.1904 - mse: 0.1904
- rmse: 0.4364 - mae: 0.2433 - mape: 7.6165
Epoch 725: val_loss improved from 0.18847 to 0.18846, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4346 - mae: 0.2425 - mape: 7.6045 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5796 - lr: 1.0000e-05
Epoch 726/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1889 - mse: 0.1889
- rmse: 0.4346 - mae: 0.2425 - mape: 7.5860
Epoch 726: val_loss did not improve from 0.18846
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2423 - mape: 7.5883 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4341 - val_mae: 0.2422 - val_mape: 7.5925 - lr: 1.0000e-05
Epoch 727/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1893 - mse: 0.1893
- rmse: 0.4351 - mae: 0.2422 - mape: 7.5892
Epoch 727: val_loss did not improve from 0.18846
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2423 - mape: 7.5946 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2420 - val_mape: 7.5843 - lr: 1.0000e-05
Epoch 728/2000
309/318 [============================>.] - ETA: 0s - loss: 0.1873 - mse: 0.1873
- rmse: 0.4328 - mae: 0.2415 - mape: 7.5608
Epoch 728: val_loss did not improve from 0.18846
318/318 [==============================] - 1s 3ms/step - loss: 0.1886 - mse:
0.1886 - rmse: 0.4343 - mae: 0.2421 - mape: 7.5882 - val_loss: 0.1889 - val_mse:
0.1889 - val_rmse: 0.4346 - val_mae: 0.2431 - val_mape: 7.6384 - lr: 1.0000e-05
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Epoch 729/2000
318/318 [==============================] - ETA: 0s - loss: 0.1887 - mse: 0.1887
- rmse: 0.4344 - mae: 0.2427 - mape: 7.6085
Epoch 729: val_loss did not improve from 0.18846
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2427 - mape: 7.6085 - val_loss: 0.1887 - val_mse:
0.1887 - val_rmse: 0.4343 - val_mae: 0.2419 - val_mape: 7.5604 - lr: 1.0000e-05
Epoch 730/2000
313/318 [=============================>.] - ETA: 0s - loss: 0.1885 - mse: 0.1885
- rmse: 0.4341 - mae: 0.2417 - mape: 7.5662
Epoch 730: val_loss did not improve from 0.18846
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2420 - mape: 7.5759 - val_loss: 0.1886 - val_mse:
0.1886 - val_rmse: 0.4343 - val_mae: 0.2425 - val_mape: 7.6153 - lr: 1.0000e-05
Epoch 731/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.1881 - mse: 0.1881
- rmse: 0.4338 - mae: 0.2423 - mape: 7.5995
Epoch 731: val_loss did not improve from 0.18846
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2423 - mape: 7.5976 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2423 - val_mape: 7.6012 - lr: 1.0000e-05
Epoch 732/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1873 - mse: 0.1873
- rmse: 0.4328 - mae: 0.2417 - mape: 7.5884
Epoch 732: val_loss did not improve from 0.18846
318/318 [==============================] - 1s 3ms/step - loss: 0.1888 - mse:
0.1888 - rmse: 0.4345 - mae: 0.2424 - mape: 7.6050 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4341 - val_mae: 0.2419 - val_mape: 7.5671 - lr: 1.0000e-05
Epoch 733/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1895 - mse: 0.1895
- rmse: 0.4353 - mae: 0.2425 - mape: 7.5937
Epoch 733: val_loss did not improve from 0.18846
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2422 - mape: 7.5887 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4342 - val_mae: 0.2421 - val_mape: 7.5868 - lr: 1.0000e-05
Epoch 734/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1881 - mse: 0.1881
- rmse: 0.4338 - mae: 0.2424 - mape: 7.5963
Epoch 734: val_loss did not improve from 0.18846
318/318 [==============================] - 1s 3ms/step - loss: 0.1887 - mse:
0.1887 - rmse: 0.4344 - mae: 0.2420 - mape: 7.5775 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4341 - val_mae: 0.2423 - val_mape: 7.6009 - lr: 1.0000e-05
Epoch 735/2000
299/318 [============================>..] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4340 - mae: 0.2425 - mape: 7.6079
Epoch 735: val_loss improved from 0.18846 to 0.18845, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
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0.1885 - rmse: 0.4342 - mae: 0.2423 - mape: 7.6027 - val_loss: 0.1885 - val_mse:
0.1885 - val_rmse: 0.4341 - val_mae: 0.2423 - val_mape: 7.5985 - lr: 1.0000e-06
Epoch 736/2000
291/318 [===========================>…] - ETA: 0s - loss: 0.1877 - mse: 0.1877
- rmse: 0.4332 - mae: 0.2420 - mape: 7.5605
Epoch 736: val_loss improved from 0.18845 to 0.18844, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4342 - mae: 0.2423 - mape: 7.5984 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2423 - val_mape: 7.5961 - lr: 1.0000e-06
Epoch 737/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.1886 - mse: 0.1886
- rmse: 0.4343 - mae: 0.2424 - mape: 7.5954
Epoch 737: val_loss improved from 0.18844 to 0.18844, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2422 - mape: 7.5933 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2422 - val_mape: 7.5947 - lr: 1.0000e-06
Epoch 738/2000
311/318 [============================>.] - ETA: 0s - loss: 0.1886 - mse: 0.1886
- rmse: 0.4343 - mae: 0.2423 - mape: 7.5977
Epoch 738: val_loss improved from 0.18844 to 0.18844, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2422 - mape: 7.5930 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2422 - val_mape: 7.5914 - lr: 1.0000e-06
Epoch 739/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4348 - mae: 0.2424 - mape: 7.5970
Epoch 739: val_loss did not improve from 0.18844
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2422 - mape: 7.5949 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5892 - lr: 1.0000e-06
Epoch 740/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1877 - mse: 0.1877
- rmse: 0.4332 - mae: 0.2417 - mape: 7.5852
Epoch 740: val_loss improved from 0.18844 to 0.18844, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2422 - mape: 7.5906 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5874 - lr: 1.0000e-06
Epoch 741/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1881 - mse: 0.1881
- rmse: 0.4337 - mae: 0.2420 - mape: 7.5833
Epoch 741: val_loss improved from 0.18844 to 0.18844, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5881 - val_loss: 0.1884 - val_mse:
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0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5886 - lr: 1.0000e-06
Epoch 742/2000
300/318 [============================>..] - ETA: 0s - loss: 0.1899 - mse: 0.1899
- rmse: 0.4358 - mae: 0.2426 - mape: 7.5966
Epoch 742: val_loss did not improve from 0.18844
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5889 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5886 - lr: 1.0000e-06
Epoch 743/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1879 - mse: 0.1879
- rmse: 0.4334 - mae: 0.2418 - mape: 7.5833
Epoch 743: val_loss improved from 0.18844 to 0.18844, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5886 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5880 - lr: 1.0000e-06
Epoch 744/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1891 - mse: 0.1891
- rmse: 0.4348 - mae: 0.2423 - mape: 7.5819
Epoch 744: val_loss improved from 0.18844 to 0.18844, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2422 - mape: 7.5910 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5878 - lr: 1.0000e-06
Epoch 745/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1900 - mse: 0.1900
- rmse: 0.4359 - mae: 0.2428 - mape: 7.6058
Epoch 745: val_loss improved from 0.18844 to 0.18844, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5868 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5879 - lr: 1.0000e-06
Epoch 746/2000
311/318 [============================>.] - ETA: 0s - loss: 0.1881 - mse: 0.1881
- rmse: 0.4337 - mae: 0.2421 - mape: 7.5877
Epoch 746: val_loss improved from 0.18844 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5905 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5854 - lr: 1.0000e-06
Epoch 747/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1896 - mse: 0.1896
- rmse: 0.4355 - mae: 0.2430 - mape: 7.6117
Epoch 747: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5821 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5857 - lr: 1.0000e-06
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Epoch 748/2000
314/318 [============================>.] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2421 - mape: 7.5838
Epoch 748: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5863 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5866 - lr: 1.0000e-06
Epoch 749/2000
314/318 [============================>.] - ETA: 0s - loss: 0.1885 - mse: 0.1885
- rmse: 0.4342 - mae: 0.2418 - mape: 7.5788
Epoch 749: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5849 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5860 - lr: 1.0000e-06
Epoch 750/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4348 - mae: 0.2422 - mape: 7.5840
Epoch 750: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5852 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5879 - lr: 1.0000e-06
Epoch 751/2000
317/318 [============================>.] - ETA: 0s - loss: 0.1885 - mse: 0.1885
- rmse: 0.4342 - mae: 0.2421 - mape: 7.5877
Epoch 751: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5874 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5873 - lr: 1.0000e-06
Epoch 752/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1857 - mse: 0.1857
- rmse: 0.4309 - mae: 0.2414 - mape: 7.5674
Epoch 752: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5861 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5856 - lr: 1.0000e-06
Epoch 753/2000
309/318 [============================>.] - ETA: 0s - loss: 0.1881 - mse: 0.1881
- rmse: 0.4337 - mae: 0.2416 - mape: 7.5740
Epoch 753: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5894 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5847 - lr: 1.0000e-06
Epoch 754/2000
299/318 [==========================>..] - ETA: 0s - loss: 0.1901 - mse: 0.1901
- rmse: 0.4360 - mae: 0.2425 - mape: 7.5945
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Epoch 754: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5853 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5853 - lr: 1.0000e-06
Epoch 755/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4347 - mae: 0.2424 - mape: 7.5976
Epoch 755: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5868 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5846 - lr: 1.0000e-06
Epoch 756/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1885 - mse: 0.1885
- rmse: 0.4342 - mae: 0.2421 - mape: 7.5762
Epoch 756: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5859 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5867 - lr: 1.0000e-06
Epoch 757/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1877 - mse: 0.1877
- rmse: 0.4332 - mae: 0.2419 - mape: 7.5799
Epoch 757: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5866 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-06
Epoch 758/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4348 - mae: 0.2423 - mape: 7.5993
Epoch 758: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5832 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5827 - lr: 1.0000e-06
Epoch 759/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1887 - mse: 0.1887
- rmse: 0.4344 - mae: 0.2421 - mape: 7.5829
Epoch 759: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5840 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5827 - lr: 1.0000e-06
Epoch 760/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1893 - mse: 0.1893
- rmse: 0.4351 - mae: 0.2432 - mape: 7.6050
Epoch 760: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
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0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5846 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5849 - lr: 1.0000e-06
Epoch 761/2000
300/318 [==========================>..] - ETA: 0s - loss: 0.1908 - mse: 0.1908 - rmse: 0.4368 - mae: 0.2431 - mape: 7.5988
Epoch 761: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse: 0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5830 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5847 - lr: 1.0000e-06
Epoch 762/2000
288/318 [==========================>...] - ETA: 0s - loss: 0.1871 - mse: 0.1871 - rmse: 0.4325 - mae: 0.2415 - mape: 7.5650
Epoch 762: val_loss improved from 0.18843 to 0.18843, saving model to model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse: 0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5848 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5848 - lr: 1.0000e-06
Epoch 763/2000
310/318 [===========================>.] - ETA: 0s - loss: 0.1880 - mse: 0.1880 - rmse: 0.4336 - mae: 0.2417 - mape: 7.5707
Epoch 763: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse: 0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5837 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5847 - lr: 1.0000e-06
Epoch 764/2000
293/318 [==========================>...] - ETA: 0s - loss: 0.1886 - mse: 0.1886 - rmse: 0.4342 - mae: 0.2420 - mape: 7.5897
Epoch 764: val_loss improved from 0.18843 to 0.18843, saving model to model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse: 0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5865 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5851 - lr: 1.0000e-06
Epoch 765/2000
314/318 [===========================>.] - ETA: 0s - loss: 0.1892 - mse: 0.1892 - rmse: 0.4349 - mae: 0.2424 - mape: 7.5967
Epoch 765: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse: 0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5859 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5827 - lr: 1.0000e-06
Epoch 766/2000
296/318 [=========================>...] - ETA: 0s - loss: 0.1885 - mse: 0.1885 - rmse: 0.4341 - mae: 0.2418 - mape: 7.5821
Epoch 766: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse: 0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5835 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5843 - lr: 1.0000e-06
Epoch 767/2000
296/318 [=========================>...] - ETA: 0s - loss: 0.1912 - mse: 0.1912

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- rmse: 0.4373 - mae: 0.2439 - mape: 7.6349
Epoch 767: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5881 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5835 - lr: 1.0000e-06
Epoch 768/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1889 - mse: 0.1889
- rmse: 0.4346 - mae: 0.2423 - mape: 7.5974
Epoch 768: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5845 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5854 - lr: 1.0000e-06
Epoch 769/2000
294/318 [===========================>…] - ETA: 0s - loss: 0.1861 - mse: 0.1861
- rmse: 0.4314 - mae: 0.2409 - mape: 7.5525
Epoch 769: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5862 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5856 - lr: 1.0000e-06
Epoch 770/2000
315/318 [============================>.] - ETA: 0s - loss: 0.1885 - mse: 0.1885
- rmse: 0.4342 - mae: 0.2421 - mape: 7.5850
Epoch 770: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5851 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2421 - val_mape: 7.5869 - lr: 1.0000e-06
Epoch 771/2000
313/318 [============================>.] - ETA: 0s - loss: 0.1889 - mse: 0.1889
- rmse: 0.4346 - mae: 0.2422 - mape: 7.5895
Epoch 771: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5860 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5851 - lr: 1.0000e-06
Epoch 772/2000
313/318 [============================>.] - ETA: 0s - loss: 0.1885 - mse: 0.1885
- rmse: 0.4342 - mae: 0.2422 - mape: 7.5998
Epoch 772: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5895 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5860 - lr: 1.0000e-06
Epoch 773/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2425 - mape: 7.6038
Epoch 773: val_loss improved from 0.18843 to 0.18843, saving model to
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model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5867 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5856 - lr: 1.0000e-06
Epoch 774/2000
293/318 [==========================>…] - ETA: 0s - loss: 0.1905 - mse: 0.1905
- rmse: 0.4365 - mae: 0.2429 - mape: 7.6012
Epoch 774: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2421 - mape: 7.5862 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5848 - lr: 1.0000e-06
Epoch 775/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.1891 - mse: 0.1891
- rmse: 0.4349 - mae: 0.2424 - mape: 7.5951
Epoch 775: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5830 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5838 - lr: 1.0000e-06
Epoch 776/2000
296/318 [===========================>…] - ETA: 0s - loss: 0.1895 - mse: 0.1895
- rmse: 0.4353 - mae: 0.2422 - mape: 7.6034
Epoch 776: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1885 - mse:
0.1885 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5841 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5846 - lr: 1.0000e-06
Epoch 777/2000
317/318 [=============================>.] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4340 - mae: 0.2419 - mape: 7.5822
Epoch 777: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5846 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5845 - lr: 1.0000e-07
Epoch 778/2000
296/318 [===========================>…] - ETA: 0s - loss: 0.1879 - mse: 0.1879
- rmse: 0.4334 - mae: 0.2421 - mape: 7.5875
Epoch 778: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5841 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5845 - lr: 1.0000e-07
Epoch 779/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1877 - mse: 0.1877
- rmse: 0.4333 - mae: 0.2415 - mape: 7.5720
Epoch 779: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5847 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5844 - lr: 1.0000e-07
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Epoch 780/2000
307/318 [==========================>..] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2421 - mape: 7.5847
Epoch 780: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5849 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5846 - lr: 1.0000e-07
Epoch 781/2000
318/318 [==============================] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4341 - mae: 0.2420 - mape: 7.5844
Epoch 781: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5844 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5845 - lr: 1.0000e-07
Epoch 782/2000
309/318 [==========================>.] - ETA: 0s - loss: 0.1876 - mse: 0.1876
- rmse: 0.4331 - mae: 0.2421 - mape: 7.5894
Epoch 782: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5848 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5844 - lr: 1.0000e-07
Epoch 783/2000
292/318 [=========================>…] - ETA: 0s - loss: 0.1879 - mse: 0.1879
- rmse: 0.4335 - mae: 0.2413 - mape: 7.5752
Epoch 783: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5845 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5845 - lr: 1.0000e-07
Epoch 784/2000
296/318 [=========================>…] - ETA: 0s - loss: 0.1896 - mse: 0.1896
- rmse: 0.4355 - mae: 0.2426 - mape: 7.6009
Epoch 784: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5844 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5845 - lr: 1.0000e-07
Epoch 785/2000
314/318 [===========================>.] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2421 - mape: 7.5869
Epoch 785: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5848 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5848 - lr: 1.0000e-07
Epoch 786/2000
294/318 [=========================>…] - ETA: 0s - loss: 0.1867 - mse: 0.1867
- rmse: 0.4321 - mae: 0.2415 - mape: 7.5698
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Epoch 786: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5850 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5848 - lr: 1.0000e-07
Epoch 787/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1899 - mse: 0.1899
- rmse: 0.4358 - mae: 0.2425 - mape: 7.5936
Epoch 787: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5852 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5848 - lr: 1.0000e-07
Epoch 788/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1882 - mse: 0.1882
- rmse: 0.4339 - mae: 0.2418 - mape: 7.5787
Epoch 788: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5846 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5847 - lr: 1.0000e-07
Epoch 789/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.1873 - mse: 0.1873
- rmse: 0.4328 - mae: 0.2418 - mape: 7.5661
Epoch 789: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5847 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5847 - lr: 1.0000e-07
Epoch 790/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1895 - mse: 0.1895
- rmse: 0.4353 - mae: 0.2424 - mape: 7.5940
Epoch 790: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5850 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5845 - lr: 1.0000e-07
Epoch 791/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1896 - mse: 0.1896
- rmse: 0.4354 - mae: 0.2423 - mape: 7.5903
Epoch 791: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5846 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5845 - lr: 1.0000e-07
Epoch 792/2000
292/318 [=========================>…] - ETA: 0s - loss: 0.1876 - mse: 0.1876
- rmse: 0.4331 - mae: 0.2419 - mape: 7.5850
Epoch 792: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5844 - val_loss: 0.1884 - val_mse:
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0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5845 - lr: 1.0000e-07
Epoch 793/2000
313/318 [============================>.] - ETA: 0s - loss: 0.1886 - mse: 0.1886
- rmse: 0.4343 - mae: 0.2419 - mape: 7.5769
Epoch 793: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5845 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5847 - lr: 1.0000e-07
Epoch 794/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1891 - mse: 0.1891
- rmse: 0.4349 - mae: 0.2421 - mape: 7.5808
Epoch 794: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5846 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5844 - lr: 1.0000e-07
Epoch 795/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1873 - mse: 0.1873
- rmse: 0.4328 - mae: 0.2413 - mape: 7.5765
Epoch 795: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5841 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5844 - lr: 1.0000e-07
Epoch 796/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2422 - mape: 7.5885
Epoch 796: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5844 - lr: 1.0000e-07
Epoch 797/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4340 - mae: 0.2419 - mape: 7.5830
Epoch 797: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5843 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5843 - lr: 1.0000e-07
Epoch 798/2000
298/318 [==========================>..] - ETA: 0s - loss: 0.1901 - mse: 0.1901
- rmse: 0.4360 - mae: 0.2429 - mape: 7.5986
Epoch 798: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5843 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5844 - lr: 1.0000e-07
Epoch 799/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1886 - mse: 0.1886

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- rmse: 0.4343 - mae: 0.2419 - mape: 7.5792
Epoch 799: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5845 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5843 - lr: 1.0000e-07
Epoch 800/2000
288/318 [===========================>…] - ETA: 0s - loss: 0.1868 - mse: 0.1868
- rmse: 0.4321 - mae: 0.2412 - mape: 7.5709
Epoch 800: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5846 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5844 - lr: 1.0000e-07
Epoch 801/2000
313/318 [=============================>.] - ETA: 0s - loss: 0.1875 - mse: 0.1875
- rmse: 0.4330 - mae: 0.2419 - mape: 7.5879
Epoch 801: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5843 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5844 - lr: 1.0000e-07
Epoch 802/2000
297/318 [===========================>..] - ETA: 0s - loss: 0.1879 - mse: 0.1879
- rmse: 0.4334 - mae: 0.2417 - mape: 7.5718
Epoch 802: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5846 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5845 - lr: 1.0000e-07
Epoch 803/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1907 - mse: 0.1907
- rmse: 0.4367 - mae: 0.2432 - mape: 7.6216
Epoch 803: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5846 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5845 - lr: 1.0000e-07
Epoch 804/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.1879 - mse: 0.1879
- rmse: 0.4335 - mae: 0.2420 - mape: 7.5787
Epoch 804: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5845 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5844 - lr: 1.0000e-07
Epoch 805/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4340 - mae: 0.2420 - mape: 7.5878
Epoch 805: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
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0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5844 - lr: 1.0000e-07
Epoch 806/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4341 - mae: 0.2421 - mape: 7.5850
Epoch 806: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5844 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5841 - lr: 1.0000e-07
Epoch 807/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1889 - mse: 0.1889
- rmse: 0.4346 - mae: 0.2428 - mape: 7.6098
Epoch 807: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5844 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-07
Epoch 808/2000
308/318 [============================>.] - ETA: 0s - loss: 0.1891 - mse: 0.1891
- rmse: 0.4349 - mae: 0.2425 - mape: 7.5969
Epoch 808: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5843 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-07
Epoch 809/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4340 - mae: 0.2419 - mape: 7.5887
Epoch 809: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5840 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-07
Epoch 810/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1891 - mse: 0.1891
- rmse: 0.4349 - mae: 0.2422 - mape: 7.5895
Epoch 810: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5843 - lr: 1.0000e-07
Epoch 811/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1862 - mse: 0.1862
- rmse: 0.4316 - mae: 0.2404 - mape: 7.5538
Epoch 811: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-07
Epoch 812/2000

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292/318 [==========================>…] – ETA: 0s – loss: 0.1885 – mse: 0.1885
– rmse: 0.4341 – mae: 0.2417 – mape: 7.5781
Epoch 812: val_loss did not improve from 0.18843
318/318 [==============================] – 1s 3ms/step – loss: 0.1884 – mse:
0.1884 – rmse: 0.4341 – mae: 0.2420 – mape: 7.5844 – val_loss: 0.1884 – val_mse:
0.1884 – val_rmse: 0.4341 – val_mae: 0.2420 – val_mape: 7.5844 – lr: 1.0000e-07
Epoch 813/2000
315/318 [===========================>.] – ETA: 0s – loss: 0.1888 – mse: 0.1888
– rmse: 0.4345 – mae: 0.2422 – mape: 7.5877
Epoch 813: val_loss did not improve from 0.18843
318/318 [==============================] – 1s 3ms/step – loss: 0.1884 – mse:
0.1884 – rmse: 0.4341 – mae: 0.2420 – mape: 7.5843 – val_loss: 0.1884 – val_mse:
0.1884 – val_rmse: 0.4341 – val_mae: 0.2420 – val_mape: 7.5843 – lr: 1.0000e-07
Epoch 814/2000
291/318 [==========================>…] – ETA: 0s – loss: 0.1887 – mse: 0.1887
– rmse: 0.4344 – mae: 0.2423 – mape: 7.5854
Epoch 814: val_loss did not improve from 0.18843
318/318 [==============================] – 1s 3ms/step – loss: 0.1884 – mse:
0.1884 – rmse: 0.4341 – mae: 0.2420 – mape: 7.5842 – val_loss: 0.1884 – val_mse:
0.1884 – val_rmse: 0.4341 – val_mae: 0.2420 – val_mape: 7.5843 – lr: 1.0000e-07
Epoch 815/2000
308/318 [===========================>.] – ETA: 0s – loss: 0.1879 – mse: 0.1879
– rmse: 0.4334 – mae: 0.2416 – mape: 7.5770
Epoch 815: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] – 1s 3ms/step – loss: 0.1884 – mse:
0.1884 – rmse: 0.4341 – mae: 0.2420 – mape: 7.5844 – val_loss: 0.1884 – val_mse:
0.1884 – val_rmse: 0.4341 – val_mae: 0.2420 – val_mape: 7.5843 – lr: 1.0000e-07
Epoch 816/2000
318/318 [==============================] – ETA: 0s – loss: 0.1884 – mse: 0.1884
– rmse: 0.4341 – mae: 0.2420 – mape: 7.5844
Epoch 816: val_loss did not improve from 0.18843
318/318 [==============================] – 1s 3ms/step – loss: 0.1884 – mse:
0.1884 – rmse: 0.4341 – mae: 0.2420 – mape: 7.5844 – val_loss: 0.1884 – val_mse:
0.1884 – val_rmse: 0.4341 – val_mae: 0.2420 – val_mape: 7.5842 – lr: 1.0000e-07
Epoch 817/2000
306/318 [==========================>..] – ETA: 0s – loss: 0.1898 – mse: 0.1898
– rmse: 0.4357 – mae: 0.2429 – mape: 7.6025
Epoch 817: val_loss improved from 0.18843 to 0.18843, saving model to
model_weights/20221125-124022_mlp_seg_best_weights.hdf5
318/318 [==============================] – 1s 3ms/step – loss: 0.1884 – mse:
0.1884 – rmse: 0.4341 – mae: 0.2420 – mape: 7.5842 – val_loss: 0.1884 – val_mse:
0.1884 – val_rmse: 0.4341 – val_mae: 0.2420 – val_mape: 7.5842 – lr: 1.0000e-08
Epoch 818/2000
316/318 [===========================>.] – ETA: 0s – loss: 0.1883 – mse: 0.1883
– rmse: 0.4339 – mae: 0.2419 – mape: 7.5813
Epoch 818: val_loss did not improve from 0.18843
318/318 [==============================] – 1s 3ms/step – loss: 0.1884 – mse:
```

0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 819/2000
317/318 [============================>.] - ETA: 0s - loss: 0.1885 - mse: 0.1885
- rmse: 0.4342 - mae: 0.2421 - mape: 7.5865
Epoch 819: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 820/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1883 - mse: 0.1883
- rmse: 0.4339 - mae: 0.2421 - mape: 7.5940
Epoch 820: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 821/2000
311/318 [===========================>.] - ETA: 0s - loss: 0.1889 - mse: 0.1889
- rmse: 0.4347 - mae: 0.2426 - mape: 7.5960
Epoch 821: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 822/2000
287/318 [=========================>…] - ETA: 0s - loss: 0.1896 - mse: 0.1896
- rmse: 0.4354 - mae: 0.2423 - mape: 7.5960
Epoch 822: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 823/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1881 - mse: 0.1881
- rmse: 0.4337 - mae: 0.2419 - mape: 7.5809
Epoch 823: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 824/2000
311/318 [===========================>.] - ETA: 0s - loss: 0.1894 - mse: 0.1894
- rmse: 0.4352 - mae: 0.2425 - mape: 7.5994
Epoch 824: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 825/2000
299/318 [===========================>..] - ETA: 0s - loss: 0.1887 - mse: 0.1887
- rmse: 0.4344 - mae: 0.2422 - mape: 7.5907
Epoch 825: val_loss did not improve from 0.18843

318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse: 0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 826/2000
295/318 [==========================>.] - ETA: 0s - loss: 0.1853 - mse: 0.1853 - rmse: 0.4304 - mae: 0.2410 - mape: 7.5577
Epoch 826: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse: 0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 827/2000
291/318 [==========================>.] - ETA: 0s - loss: 0.1899 - mse: 0.1899 - rmse: 0.4358 - mae: 0.2422 - mape: 7.5848
Epoch 827: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse: 0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 828/2000
314/318 [============================>.] - ETA: 0s - loss: 0.1887 - mse: 0.1887 - rmse: 0.4344 - mae: 0.2422 - mape: 7.5911
Epoch 828: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse: 0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 829/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1888 - mse: 0.1888 - rmse: 0.4345 - mae: 0.2422 - mape: 7.5879
Epoch 829: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse: 0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 830/2000
295/318 [==========================>.] - ETA: 0s - loss: 0.1882 - mse: 0.1882 - rmse: 0.4338 - mae: 0.2418 - mape: 7.5782
Epoch 830: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse: 0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 831/2000
318/318 [==============================] - ETA: 0s - loss: 0.1884 - mse: 0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842
Epoch 831: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse: 0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse: 0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 832/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1894 - mse: 0.1894 - rmse: 0.4352 - mae: 0.2424 - mape: 7.5895

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Epoch 832: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 833/2000
318/318 [==============================] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4341 - mae: 0.2420 - mape: 7.5842
Epoch 833: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 834/2000
316/318 [=============================>.] - ETA: 0s - loss: 0.1880 - mse: 0.1880
- rmse: 0.4336 - mae: 0.2418 - mape: 7.5803
Epoch 834: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 835/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2422 - mape: 7.5871
Epoch 835: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 836/2000
318/318 [==============================] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4341 - mae: 0.2420 - mape: 7.5842
Epoch 836: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 837/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1894 - mse: 0.1894
- rmse: 0.4352 - mae: 0.2429 - mape: 7.6021
Epoch 837: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 838/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1872 - mse: 0.1872
- rmse: 0.4326 - mae: 0.2421 - mape: 7.5845
Epoch 838: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 839/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1882 - mse: 0.1882
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- rmse: 0.4338 - mae: 0.2421 - mape: 7.5965
Epoch 839: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 840/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.1883 - mse: 0.1883
- rmse: 0.4339 - mae: 0.2420 - mape: 7.5722
Epoch 840: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 841/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1880 - mse: 0.1880
- rmse: 0.4335 - mae: 0.2423 - mape: 7.5997
Epoch 841: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 842/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1882 - mse: 0.1882
- rmse: 0.4338 - mae: 0.2417 - mape: 7.5787
Epoch 842: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 843/2000
315/318 [=============================>.] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4348 - mae: 0.2423 - mape: 7.5938
Epoch 843: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 844/2000
290/318 [==========================>…] - ETA: 0s - loss: 0.1909 - mse: 0.1909
- rmse: 0.4370 - mae: 0.2429 - mape: 7.5988
Epoch 844: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 845/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1867 - mse: 0.1867
- rmse: 0.4321 - mae: 0.2415 - mape: 7.5676
Epoch 845: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 846/2000

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309/318 [============================>.] - ETA: 0s - loss: 0.1883 - mse: 0.1883
- rmse: 0.4339 - mae: 0.2418 - mape: 7.5704
Epoch 846: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 847/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1882 - mse: 0.1882
- rmse: 0.4338 - mae: 0.2419 - mape: 7.5811
Epoch 847: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 848/2000
293/318 [===========================>…] - ETA: 0s - loss: 0.1899 - mse: 0.1899
- rmse: 0.4358 - mae: 0.2429 - mape: 7.6088
Epoch 848: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 849/2000
304/318 [===========================>..] - ETA: 0s - loss: 0.1879 - mse: 0.1879
- rmse: 0.4334 - mae: 0.2420 - mape: 7.5846
Epoch 849: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 850/2000
294/318 [===========================>…] - ETA: 0s - loss: 0.1887 - mse: 0.1887
- rmse: 0.4343 - mae: 0.2422 - mape: 7.5843
Epoch 850: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 851/2000
310/318 [============================>.] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4347 - mae: 0.2423 - mape: 7.5882
Epoch 851: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 852/2000
308/318 [============================>.] - ETA: 0s - loss: 0.1886 - mse: 0.1886
- rmse: 0.4342 - mae: 0.2418 - mape: 7.5722
Epoch 852: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
```

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Epoch 853/2000
317/318 [============================>.] - ETA: 0s - loss: 0.1885 - mse: 0.1885
- rmse: 0.4342 - mae: 0.2421 - mape: 7.5860
Epoch 853: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 854/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1886 - mse: 0.1886
- rmse: 0.4343 - mae: 0.2414 - mape: 7.5607
Epoch 854: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 855/2000
315/318 [============================>.] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2422 - mape: 7.5867
Epoch 855: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 856/2000
316/318 [============================>.] - ETA: 0s - loss: 0.1887 - mse: 0.1887
- rmse: 0.4344 - mae: 0.2422 - mape: 7.5871
Epoch 856: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-08
Epoch 857/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1878 - mse: 0.1878
- rmse: 0.4333 - mae: 0.2419 - mape: 7.5810
Epoch 857: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 858/2000
296/318 [==========================>…] - ETA: 0s - loss: 0.1909 - mse: 0.1909
- rmse: 0.4369 - mae: 0.2438 - mape: 7.6241
Epoch 858: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 859/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1896 - mse: 0.1896
- rmse: 0.4354 - mae: 0.2426 - mape: 7.5916
Epoch 859: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
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0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 860/2000
308/318 [============================>.] - ETA: 0s - loss: 0.1882 - mse: 0.1882
- rmse: 0.4338 - mae: 0.2421 - mape: 7.5934
Epoch 860: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 861/2000
313/318 [============================>.] - ETA: 0s - loss: 0.1880 - mse: 0.1880
- rmse: 0.4336 - mae: 0.2417 - mape: 7.5783
Epoch 861: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 862/2000
311/318 [============================>.] - ETA: 0s - loss: 0.1882 - mse: 0.1882
- rmse: 0.4338 - mae: 0.2416 - mape: 7.5717
Epoch 862: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 863/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1883 - mse: 0.1883
- rmse: 0.4339 - mae: 0.2422 - mape: 7.5908
Epoch 863: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 864/2000
315/318 [============================>.] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4341 - mae: 0.2421 - mape: 7.5887
Epoch 864: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 865/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1876 - mse: 0.1876
- rmse: 0.4332 - mae: 0.2418 - mape: 7.5858
Epoch 865: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 866/2000
308/318 [============================>.] - ETA: 0s - loss: 0.1899 - mse: 0.1899
- rmse: 0.4357 - mae: 0.2425 - mape: 7.5992
Epoch 866: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:

0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 867/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1866 - mse: 0.1866
- rmse: 0.4320 - mae: 0.2411 - mape: 7.5550
Epoch 867: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 868/2000
317/318 [============================>.] - ETA: 0s - loss: 0.1885 - mse: 0.1885
- rmse: 0.4342 - mae: 0.2421 - mape: 7.5859
Epoch 868: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 869/2000
299/318 [==========================>..] - ETA: 0s - loss: 0.1887 - mse: 0.1887
- rmse: 0.4343 - mae: 0.2422 - mape: 7.5899
Epoch 869: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 870/2000
295/318 [=========================>…] - ETA: 0s - loss: 0.1868 - mse: 0.1868
- rmse: 0.4322 - mae: 0.2412 - mape: 7.5564
Epoch 870: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 871/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1876 - mse: 0.1876
- rmse: 0.4331 - mae: 0.2419 - mape: 7.5653
Epoch 871: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 872/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1885 - mse: 0.1885
- rmse: 0.4342 - mae: 0.2420 - mape: 7.5853
Epoch 872: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 873/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4347 - mae: 0.2425 - mape: 7.6010
Epoch 873: val_loss did not improve from 0.18843

318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 874/2000
313/318 [=============================>.] - ETA: 0s - loss: 0.1894 - mse: 0.1894
- rmse: 0.4352 - mae: 0.2425 - mape: 7.5951
Epoch 874: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 875/2000
311/318 [=============================>.] - ETA: 0s - loss: 0.1872 - mse: 0.1872
- rmse: 0.4327 - mae: 0.2415 - mape: 7.5754
Epoch 875: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 876/2000
299/318 [============================>..] - ETA: 0s - loss: 0.1879 - mse: 0.1879
- rmse: 0.4334 - mae: 0.2419 - mape: 7.5641
Epoch 876: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 877/2000
312/318 [=============================>.] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4341 - mae: 0.2420 - mape: 7.5756
Epoch 877: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 878/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2421 - mape: 7.5887
Epoch 878: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 879/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1871 - mse: 0.1871
- rmse: 0.4326 - mae: 0.2420 - mape: 7.5789
Epoch 879: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 880/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1869 - mse: 0.1869
- rmse: 0.4323 - mae: 0.2419 - mape: 7.5834

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Epoch 880: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 881/2000
310/318 [=============================>.] - ETA: 0s - loss: 0.1897 - mse: 0.1897
- rmse: 0.4355 - mae: 0.2426 - mape: 7.5958
Epoch 881: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 882/2000
292/318 [===========================>…] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4347 - mae: 0.2426 - mape: 7.5912
Epoch 882: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 883/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4348 - mae: 0.2424 - mape: 7.5960
Epoch 883: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 884/2000
314/318 [=============================>.] - ETA: 0s - loss: 0.1877 - mse: 0.1877
- rmse: 0.4332 - mae: 0.2417 - mape: 7.5736
Epoch 884: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 885/2000
309/318 [=============================>.] - ETA: 0s - loss: 0.1878 - mse: 0.1878
- rmse: 0.4333 - mae: 0.2414 - mape: 7.5682
Epoch 885: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 886/2000
297/318 [==========================>..] - ETA: 0s - loss: 0.1875 - mse: 0.1875
- rmse: 0.4330 - mae: 0.2412 - mape: 7.5582
Epoch 886: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 887/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1878 - mse: 0.1878
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- rmse: 0.4334 - mae: 0.2418 - mape: 7.5635
Epoch 887: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 888/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1902 - mse: 0.1902
- rmse: 0.4361 - mae: 0.2426 - mape: 7.5864
Epoch 888: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 889/2000
318/318 [==============================] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4341 - mae: 0.2420 - mape: 7.5842
Epoch 889: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 890/2000
312/318 [===========================>.] - ETA: 0s - loss: 0.1892 - mse: 0.1892
- rmse: 0.4349 - mae: 0.2424 - mape: 7.5969
Epoch 890: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 891/2000
313/318 [===========================>.] - ETA: 0s - loss: 0.1893 - mse: 0.1893
- rmse: 0.4351 - mae: 0.2424 - mape: 7.5949
Epoch 891: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 892/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.1890 - mse: 0.1890
- rmse: 0.4348 - mae: 0.2423 - mape: 7.5908
Epoch 892: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 893/2000
289/318 [==========================>…] - ETA: 0s - loss: 0.1862 - mse: 0.1862
- rmse: 0.4315 - mae: 0.2411 - mape: 7.5735
Epoch 893: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 894/2000

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295/318 [============================>…] - ETA: 0s - loss: 0.1882 - mse: 0.1882
- rmse: 0.4338 - mae: 0.2427 - mape: 7.5989
Epoch 894: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 895/2000
305/318 [===========================>..] - ETA: 0s - loss: 0.1876 - mse: 0.1876
- rmse: 0.4331 - mae: 0.2416 - mape: 7.5813
Epoch 895: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 896/2000
300/318 [===========================>..] - ETA: 0s - loss: 0.1882 - mse: 0.1882
- rmse: 0.4338 - mae: 0.2416 - mape: 7.5762
Epoch 896: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-09
Epoch 897/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1876 - mse: 0.1876
- rmse: 0.4332 - mae: 0.2417 - mape: 7.5671
Epoch 897: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 898/2000
290/318 [==========================>…] - ETA: 0s - loss: 0.1893 - mse: 0.1893
- rmse: 0.4351 - mae: 0.2426 - mape: 7.5981
Epoch 898: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 899/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1874 - mse: 0.1874
- rmse: 0.4329 - mae: 0.2420 - mape: 7.5823
Epoch 899: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 900/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1897 - mse: 0.1897
- rmse: 0.4355 - mae: 0.2427 - mape: 7.6024
Epoch 900: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
```

```
Epoch 901/2000
312/318 [============================>.] - ETA: 0s - loss: 0.1884 - mse: 0.1884
- rmse: 0.4340 - mae: 0.2416 - mape: 7.5699
Epoch 901: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 4ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 902/2000
302/318 [===========================>..] - ETA: 0s - loss: 0.1894 - mse: 0.1894
- rmse: 0.4352 - mae: 0.2434 - mape: 7.6272
Epoch 902: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 903/2000
314/318 [============================>.] - ETA: 0s - loss: 0.1888 - mse: 0.1888
- rmse: 0.4345 - mae: 0.2423 - mape: 7.5874
Epoch 903: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 904/2000
307/318 [===========================>..] - ETA: 0s - loss: 0.1878 - mse: 0.1878
- rmse: 0.4334 - mae: 0.2416 - mape: 7.5749
Epoch 904: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 905/2000
300/318 [==========================>..] - ETA: 0s - loss: 0.1873 - mse: 0.1873
- rmse: 0.4328 - mae: 0.2410 - mape: 7.5501
Epoch 905: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 906/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1898 - mse: 0.1898
- rmse: 0.4357 - mae: 0.2423 - mape: 7.5852
Epoch 906: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 907/2000
298/318 [==========================>..] - ETA: 0s - loss: 0.1872 - mse: 0.1872
- rmse: 0.4327 - mae: 0.2412 - mape: 7.5698
Epoch 907: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
```

0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 908/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1882 - mse: 0.1882
- rmse: 0.4338 - mae: 0.2421 - mape: 7.5893
Epoch 908: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 909/2000
291/318 [==========================>…] - ETA: 0s - loss: 0.1843 - mse: 0.1843
- rmse: 0.4293 - mae: 0.2406 - mape: 7.5559
Epoch 909: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 910/2000
295/318 [==========================>…] - ETA: 0s - loss: 0.1896 - mse: 0.1896
- rmse: 0.4354 - mae: 0.2423 - mape: 7.5777
Epoch 910: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 911/2000
306/318 [===========================>..] - ETA: 0s - loss: 0.1864 - mse: 0.1864
- rmse: 0.4318 - mae: 0.2407 - mape: 7.5517
Epoch 911: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 912/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1902 - mse: 0.1902
- rmse: 0.4362 - mae: 0.2430 - mape: 7.6093
Epoch 912: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 913/2000
303/318 [===========================>..] - ETA: 0s - loss: 0.1886 - mse: 0.1886
- rmse: 0.4342 - mae: 0.2418 - mape: 7.5780
Epoch 913: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 914/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1887 - mse: 0.1887
- rmse: 0.4344 - mae: 0.2429 - mape: 7.6020
Epoch 914: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:

```
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 915/2000
298/318 [===========================>..] - ETA: 0s - loss: 0.1882 - mse: 0.1882
- rmse: 0.4338 - mae: 0.2424 - mape: 7.6019
Epoch 915: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 916/2000
294/318 [==========================>…] - ETA: 0s - loss: 0.1875 - mse: 0.1875
- rmse: 0.4330 - mae: 0.2417 - mape: 7.5771
Epoch 916: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 917/2000
301/318 [===========================>..] - ETA: 0s - loss: 0.1882 - mse: 0.1882
- rmse: 0.4338 - mae: 0.2414 - mape: 7.5644
Epoch 917: val_loss did not improve from 0.18843
318/318 [==============================] - 1s 3ms/step - loss: 0.1884 - mse:
0.1884 - rmse: 0.4341 - mae: 0.2420 - mape: 7.5842 - val_loss: 0.1884 - val_mse:
0.1884 - val_rmse: 0.4341 - val_mae: 0.2420 - val_mape: 7.5842 - lr: 1.0000e-10
Epoch 917: early stopping
```

```
[ ]: <keras.callbacks.History at 0x7ff404f1fa30>
```

1.5 Test model

```
[ ]: print(date_actual)
```

```
20221125-124022
```

```
[ ]: best_model = models.load_model(f'model_weights/
     ↪{date_actual}_mlp_seg_best_weights.hdf5')
     #best_model = models.load_model(f'model_weights/
     ↪20221123-225504_mlp_seg_best_weights.hdf5')
     #best_model = models.load_model(f'model_weights/MLPRegressor_Seg_V3_1.hdf5')
```

```
[ ]: best_model.evaluate(X_test, y_test)
```

```
398/398 [==============================] - 1s 1ms/step - loss: 0.2258 - mse:
0.2258 - rmse: 0.4752 - mae: 0.2791 - mape: 9.7301
```

```
[ ]: [0.22580108046531677,
      0.22580108046531677,
      0.4751853048801422,
```

```
        0.2790627181529999,
        9.730066299438477]
```

```
[ ]: y_pred = best_model.predict(X_test)
```

```
398/398 [==============================] - 0s 651us/step
```

```
[ ]: print("R^2: ", r2_score(y_test, y_pred))
     print("mse: ", mean_squared_error(y_test, y_pred))
     print("rmse: ", mean_squared_error(y_test, y_pred, squared=False))
     print("mae: ", mean_absolute_error(y_test, y_pred))
     print("mape: ", mean_absolute_percentage_error(y_test, y_pred))
     print("Error estandar: ", stde(y_test.squeeze(),
             y_pred.squeeze(), ddof=2))
```

```
R^2:  0.422092566707832
mse:  0.2258010653621972
rmse:  0.47518529581858615
mae:  0.2790626532858474
mape:  0.0973006752812812
Error estandar:  0.4650789919813469
```

```
[ ]: residuals = y_test - y_pred
     residuals_std = residuals/residuals.std()

     y_real_stage = np.array([i[0] for i in y_test])
     residual_stage = np.array([i[0] for i in residuals])

     #y_real_discharge = np.array([i[-1] for i in y_test])
     #residual_discharge = np.array([i[-1] for i in residuals])


     figure, ax = plt.subplots(ncols=2, figsize=(20, 8), dpi=80)

     ax[0].scatter(y_real_stage, residual_stage / residual_stage.std(), label="stage␣
      ↪residuals")
     #ax[1].scatter(y_real_discharge, residual_discharge / residual_discharge.std(),␣
      ↪label="discharge residuals")
     ax[0].axhline(y=0.0, color='r', linestyle='-')
     ax[1].axhline(y=0.0, color='r', linestyle='-')

     ax[0].set_title("Stage residuals")
     ax[1].set_title("Discharge residuals")

     ax[1].set_xlabel("Fitted values")
     ax[0].set_xlabel("Fitted values")
     ax[1].set_ylabel("Standarized residuals")
```

```
ax[0].set_ylabel("Standarized residuals")

plt.legend()
plt.show()
```

No artists with labels found to put in legend. Note that artists whose label
start with an underscore are ignored when legend() is called with no argument.
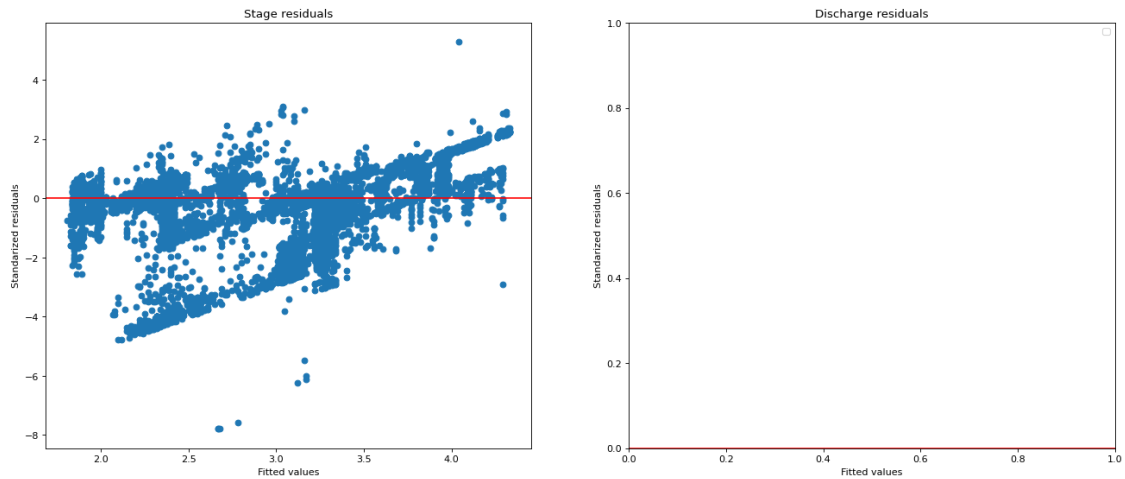

```
[ ]: import statsmodels.api as sm
     from statsmodels.stats.diagnostic import normal_ad

     #figure = sm.qqplot(residual_stage / residual_stage.std(), line ='45',␣
     ↪label='stage')
     plt.show()
```

```
[ ]: figure = sm.qqplot(residual_stage / residual_stage.std(), line='45',␣
     ↪label='discharge')
     plt.show()
```

149
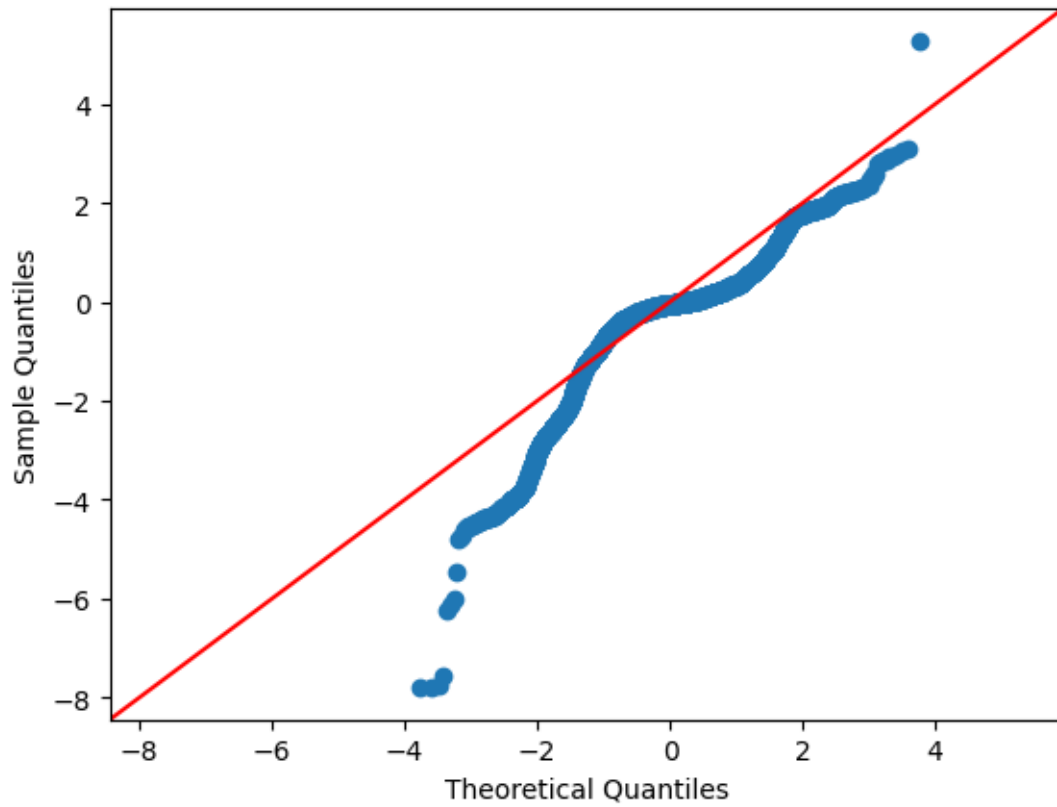
```
[ ]: plt.hist(residual_stage / residual_stage.std(), density=True, bins = 60)
     plt.ylabel('Count')
     plt.xlabel('Residual stage');
     plt.show()
```
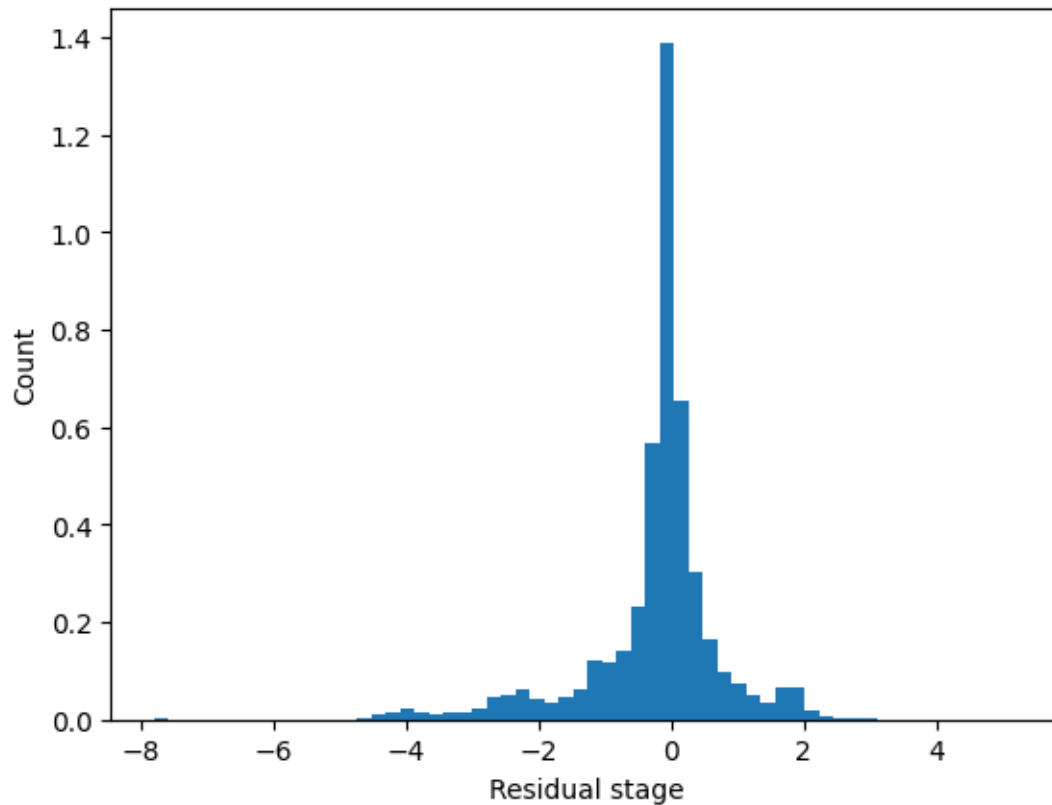
```
"""plt.hist(residual_discharge / residual_discharge.std(), density=True, bins =
 60)
plt.ylabel('Count')
plt.xlabel('Residual discharge');
plt.show()"""
```

```
"plt.hist(residual_discharge / residual_discharge.std(), density=True, bins =
60)\nplt.ylabel('Count')\nplt.xlabel('Residual discharge');\nplt.show()"
```

```python
stat, pval = normal_ad(residual_stage / residual_stage.std())
print("p-value:", pval)

if pval < 0.05:
    print("Hay evidencia de que los residuos no provienen de una distribución
 normal.")
else:
    print("No hay evidencia para rechazar la hipótesis de que los residuos
 vienen de una distribución normal.")
```

p-value: 0.0
Hay evidencia de que los residuos no provienen de una distribución normal.

```
figure, ax = plt.subplots(ncols=2, figsize=(20, 8), dpi=80)

ax[0].plot(np.arange(len(y_test)), y_test, label="Stage real")
ax[0].plot(np.arange(len(y_test)), y_pred, label="Stage pred")

ax[0].set_title("Stage predictions")
ax[1].set_title("Discharge predictions")

ax[1].set_ylabel("Values")
ax[0].set_ylabel("Values")
ax[1].set_xlabel("Time")
ax[0].set_xlabel("Time")

ax[0].legend()
ax[1].legend()
plt.show()
```

No artists with labels found to put in legend. Note that artists whose label
start with an underscore are ignored when legend() is called with no argument.