

```
1 ssh://root@103.254.67.181:10006/usr/bin/  
python -u /home/sunfengzhen/pycharm/  
keras_regress/boston01.py  
2 Using TensorFlow backend.  
3 #####load dataset  
#####  
4 the type of train data is float64  
5 the shape of train data is (404, 13)  
6 the shape of train target is (404,)  
7 the type of train target is float64  
8 train target[:10]: [15.2 42.3 50. 21.1  
17.7 18.5 11.3 15.6 15.6 14.4]  
9 the shape of test data is (102, 13)  
10 the shape of test target is (102,)  
11 #####data proecess  
#####  
12 the shape of mean is (13,)  
13 the shape of std is (13,)  
14 #####model train  
#####  
15 model.metrics_names = ['loss', '  
mean_absolute_error']  
16
```

```
17 Layer (type)                Output
    Shape                    Param #
18 =====
19 dense_1 (Dense)              (None, 64)
    )                        896
20 =====
21 dense_2 (Dense)              (None, 64)
    )                        4160
22 =====
23 dense_3 (Dense)              (None, 1)
    )                        65
24 =====
25 Total params: 5,121
26 Trainable params: 5,121
27 Non-trainable params: 0
28 =====
29 Train on 323 samples, validate on 81
    samples
30 Epoch 1/1000
```

```
31 2019-05-29 10:27:28.883963: I tensorflow
   /core/platform/cpu_feature_guard.cc:141
   ] Your CPU supports instructions that
   this TensorFlow binary was not compiled
   to use: AVX2 FMA
32 2019-05-29 10:27:29.182857: I tensorflow
   /core/common_runtime/gpu/gpu_device.cc:
   1432] Found device 0 with properties:
33 name: GeForce GTX 1080 Ti major: 6 minor
   : 1 memoryClockRate(GHz): 1.582
34 pciBusID: 0000:82:00.0
35 totalMemory: 10.92GiB freeMemory: 10.
   76GiB
36 2019-05-29 10:27:29.182923: I tensorflow
   /core/common_runtime/gpu/gpu_device.cc:
   1511] Adding visible gpu devices: 0
37 2019-05-29 10:27:29.649652: I tensorflow
   /core/common_runtime/gpu/gpu_device.cc:
   982] Device interconnect StreamExecutor
   with strength 1 edge matrix:
38 2019-05-29 10:27:29.649726: I tensorflow
   /core/common_runtime/gpu/gpu_device.cc:
   988] 0
39 2019-05-29 10:27:29.649740: I tensorflow
```

```
39 /core/common_runtime/gpu/gpu_device.cc:
1001] 0: N
40 2019-05-29 10:27:29.650091: I tensorflow
/core/common_runtime/gpu/gpu_device.cc:
1115] Created TensorFlow device (/job:
localhost/replica:0/task:0/device:GPU:0
with 10409 MB memory) -> physical GPU (
device: 0, name: GeForce GTX 1080 Ti,
pci bus id: 0000:82:00.0, compute
capability: 6.1)
41 - 2s - loss: 508.8570 -
mean_absolute_error: 20.4707 - val_loss
: 502.1782 - val_mean_absolute_error: 20
.3382
42 Epoch 2/1000
43 - 0s - loss: 377.0670 -
mean_absolute_error: 16.9365 - val_loss
: 351.6663 - val_mean_absolute_error: 16
.3737
44 Epoch 3/1000
45 - 0s - loss: 233.1376 -
mean_absolute_error: 12.7086 - val_loss
: 201.0621 - val_mean_absolute_error: 11
.5551
```

```
46 Epoch 4/1000
47   - 0s - loss: 119.1073 -
    mean_absolute_error: 8.5366 - val_loss:
    106.8299 - val_mean_absolute_error: 7.
    8862
48 Epoch 5/1000
49   - 0s - loss: 66.6506 -
    mean_absolute_error: 6.1033 - val_loss:
    66.7304 - val_mean_absolute_error: 6.
    1965
50 Epoch 6/1000
51   - 0s - loss: 46.5216 -
    mean_absolute_error: 4.9055 - val_loss:
    50.3796 - val_mean_absolute_error: 5.
    2820
52 Epoch 7/1000
53   - 0s - loss: 35.6644 -
    mean_absolute_error: 4.1863 - val_loss:
    37.8124 - val_mean_absolute_error: 4.
    6576
54 Epoch 8/1000
55   - 0s - loss: 28.5578 -
    mean_absolute_error: 3.7078 - val_loss:
    29.4733 - val_mean_absolute_error: 4.
```

```
55 2196
56 Epoch 9/1000
57 - 0s - loss: 24.2213 -
  mean_absolute_error: 3.4109 - val_loss:
  26.2472 - val_mean_absolute_error: 3.
  9858
58 Epoch 10/1000
59 - 0s - loss: 22.1722 -
  mean_absolute_error: 3.2803 - val_loss:
  24.3110 - val_mean_absolute_error: 3.
  9968
60
61 Epoch 0010: val_mean_absolute_error
  improved from inf to 3.99685, saving
  model to ./model/model_Epoch0010-
  val_mean_absolute_error4.00.h5
62 Epoch 11/1000
63 - 0s - loss: 19.9153 -
  mean_absolute_error: 3.1422 - val_loss:
  23.0588 - val_mean_absolute_error: 3.
  5317
64 Epoch 12/1000
65 - 0s - loss: 18.6735 -
  mean_absolute_error: 2.9657 - val_loss:
```

```
65 19.3226 - val_mean_absolute_error: 3.
4762
66 Epoch 13/1000
67 - 0s - loss: 17.0796 -
mean_absolute_error: 2.8401 - val_loss:
18.5031 - val_mean_absolute_error: 3.
4244
68 Epoch 14/1000
69 - 0s - loss: 15.8806 -
mean_absolute_error: 2.7602 - val_loss:
16.5286 - val_mean_absolute_error: 3.
1774
70 Epoch 15/1000
71 - 0s - loss: 14.9331 -
mean_absolute_error: 2.6634 - val_loss:
15.3848 - val_mean_absolute_error: 3.
0312
72 Epoch 16/1000
73 - 0s - loss: 14.0725 -
mean_absolute_error: 2.5630 - val_loss:
14.8925 - val_mean_absolute_error: 2.
9480
74 Epoch 17/1000
75 - 0s - loss: 13.3512 -
```

```
75 mean_absolute_error: 2.4960 - val_loss:
   13.9896 - val_mean_absolute_error: 2.
   8303
76 Epoch 18/1000
77   - 0s - loss: 13.0629 -
   mean_absolute_error: 2.4981 - val_loss:
   15.3788 - val_mean_absolute_error: 3.
   1110
78 Epoch 19/1000
79   - 0s - loss: 12.6171 -
   mean_absolute_error: 2.4574 - val_loss:
   13.3599 - val_mean_absolute_error: 2.
   8262
80 Epoch 20/1000
81   - 0s - loss: 11.7888 -
   mean_absolute_error: 2.3847 - val_loss:
   13.6188 - val_mean_absolute_error: 2.
   8368
82
83 Epoch 0020: val_mean_absolute_error
   improved from 3.99685 to 2.83678, saving
   model to ./model/model_Epoch0020-
   val_mean_absolute_error2.84.h5
84 Epoch 21/1000
```



```
85 - 0s - loss: 11.7894 -  
mean_absolute_error: 2.3426 - val_loss  
: 12.8359 - val_mean_absolute_error: 2.  
7281  
86 Epoch 22/1000  
87 - 0s - loss: 11.2370 -  
mean_absolute_error: 2.2978 - val_loss  
: 12.7378 - val_mean_absolute_error: 2.  
7909  
88 Epoch 23/1000  
89 - 0s - loss: 10.9771 -  
mean_absolute_error: 2.2869 - val_loss  
: 12.3347 - val_mean_absolute_error: 2.  
7578  
90 Epoch 24/1000  
91 - 0s - loss: 10.7601 -  
mean_absolute_error: 2.2491 - val_loss  
: 12.3628 - val_mean_absolute_error: 2.  
6097  
92 Epoch 25/1000  
93 - 0s - loss: 10.2933 -  
mean_absolute_error: 2.2198 - val_loss  
: 13.8948 - val_mean_absolute_error: 2.  
7856
```

```
94 Epoch 26/1000
95   - 0s - loss: 10.3395 -
    mean_absolute_error: 2.1852 - val_loss
    : 12.5965 - val_mean_absolute_error: 2.
    6553
96 Epoch 27/1000
97   - 0s - loss: 10.0387 -
    mean_absolute_error: 2.1834 - val_loss
    : 12.6053 - val_mean_absolute_error: 2.
    7038
98 Epoch 28/1000
99   - 0s - loss: 9.9576 -
    mean_absolute_error: 2.1891 - val_loss
    : 12.0698 - val_mean_absolute_error: 2.
    6495
100 Epoch 29/1000
101   - 0s - loss: 9.5338 -
    mean_absolute_error: 2.1261 - val_loss
    : 12.7163 - val_mean_absolute_error: 2.
    8390
102 Epoch 30/1000
103   - 0s - loss: 9.3056 -
    mean_absolute_error: 2.1012 - val_loss
    : 11.6176 - val_mean_absolute_error: 2.
```

103 6176

104

105 Epoch 00030: val\_mean\_absolute\_error  
improved from 2.83678 to 2.61763,  
saving model to ./model/model\_Epoch0030  
-val\_mean\_absolute\_error2.62.h5

106 Epoch 31/1000

107 - 0s - loss: 9.5487 -  
mean\_absolute\_error: 2.1249 - val\_loss  
: 12.1098 - val\_mean\_absolute\_error: 2.  
6561

108 Epoch 32/1000

109 - 0s - loss: 8.9365 -  
mean\_absolute\_error: 2.0343 - val\_loss  
: 15.7893 - val\_mean\_absolute\_error: 2.  
8930

110 Epoch 33/1000

111 - 0s - loss: 9.1733 -  
mean\_absolute\_error: 2.1379 - val\_loss  
: 12.4831 - val\_mean\_absolute\_error: 2.  
5939

112 Epoch 34/1000

113 - 0s - loss: 8.7832 -  
mean\_absolute\_error: 2.0653 - val\_loss

```
113 : 12.4745 - val_mean_absolute_error: 2.
    6719
114 Epoch 35/1000
115 - 0s - loss: 8.9244 -
    mean_absolute_error: 2.0582 - val_loss
    : 12.4537 - val_mean_absolute_error: 2.
    5946
116 Epoch 36/1000
117 - 0s - loss: 8.5267 -
    mean_absolute_error: 2.0779 - val_loss
    : 12.7375 - val_mean_absolute_error: 2.
    7257
118 Epoch 37/1000
119 - 0s - loss: 8.6095 -
    mean_absolute_error: 2.0246 - val_loss
    : 12.5228 - val_mean_absolute_error: 2.
    5267
120 Epoch 38/1000
121 - 0s - loss: 8.6112 -
    mean_absolute_error: 2.0274 - val_loss
    : 12.5877 - val_mean_absolute_error: 2.
    5362
122 Epoch 39/1000
123 - 0s - loss: 8.4096 -
```

```
123 mean_absolute_error: 1.9910 - val_loss
    : 12.5051 - val_mean_absolute_error: 2.
    5184
124 Epoch 40/1000
125   - 0s - loss: 8.1227 -
    mean_absolute_error: 1.9826 - val_loss
    : 12.3537 - val_mean_absolute_error: 2.
    5608
126
127 Epoch 00040: val_mean_absolute_error
    improved from 2.61763 to 2.56082,
    saving model to ./model/model_Epoch0040
    -val_mean_absolute_error2.56.h5
128 Epoch 41/1000
129   - 0s - loss: 8.0297 -
    mean_absolute_error: 1.9396 - val_loss
    : 12.1463 - val_mean_absolute_error: 2.
    5982
130 Epoch 42/1000
131   - 0s - loss: 8.2348 -
    mean_absolute_error: 1.9562 - val_loss
    : 12.9758 - val_mean_absolute_error: 2.
    5625
132 Epoch 43/1000
```

```
133 - 0s - loss: 7.9648 -  
mean_absolute_error: 1.9833 - val_loss  
: 12.0786 - val_mean_absolute_error: 2.  
5746  
134 Epoch 44/1000  
135 - 0s - loss: 7.9476 -  
mean_absolute_error: 1.9209 - val_loss  
: 15.3071 - val_mean_absolute_error: 2.  
7191  
136 Epoch 45/1000  
137 - 0s - loss: 7.8115 -  
mean_absolute_error: 1.9458 - val_loss  
: 12.3172 - val_mean_absolute_error: 2.  
6178  
138 Epoch 46/1000  
139 - 0s - loss: 7.7519 -  
mean_absolute_error: 1.8970 - val_loss  
: 13.3924 - val_mean_absolute_error: 2.  
6245  
140 Epoch 47/1000  
141 - 0s - loss: 7.6907 -  
mean_absolute_error: 1.9203 - val_loss  
: 12.5278 - val_mean_absolute_error: 2.  
4699
```

```
142 Epoch 48/1000
143   - 0s - loss: 7.4754 -
      mean_absolute_error: 1.8890 - val_loss
      : 12.3038 - val_mean_absolute_error: 2.
      5601
144 Epoch 49/1000
145   - 0s - loss: 7.6362 -
      mean_absolute_error: 1.8887 - val_loss
      : 12.2313 - val_mean_absolute_error: 2.
      5350
146 Epoch 50/1000
147   - 0s - loss: 7.5599 -
      mean_absolute_error: 1.8726 - val_loss
      : 11.9923 - val_mean_absolute_error: 2.
      4585
148
149 Epoch 00050: val_mean_absolute_error
      improved from 2.56082 to 2.45854,
      saving model to ./model/model_Epoch0050
      -val_mean_absolute_error2.46.h5
150 Epoch 51/1000
151   - 0s - loss: 7.4957 -
      mean_absolute_error: 1.8982 - val_loss
      : 12.4439 - val_mean_absolute_error: 2.
```

```
151 6541
152 Epoch 52/1000
153   - 0s - loss: 7.3561 -
    mean_absolute_error: 1.8711 - val_loss
    : 12.2916 - val_mean_absolute_error: 2.
    5589
154 Epoch 53/1000
155   - 0s - loss: 7.1150 -
    mean_absolute_error: 1.8399 - val_loss
    : 12.0207 - val_mean_absolute_error: 2.
    5144
156 Epoch 54/1000
157   - 0s - loss: 7.1536 -
    mean_absolute_error: 1.8609 - val_loss
    : 14.2695 - val_mean_absolute_error: 2.
    7237
158 Epoch 55/1000
159   - 0s - loss: 7.3549 -
    mean_absolute_error: 1.8630 - val_loss
    : 13.1265 - val_mean_absolute_error: 2.
    4830
160 Epoch 56/1000
161   - 0s - loss: 7.0151 -
    mean_absolute_error: 1.8336 - val_loss
```



```
161 : 12.7181 - val_mean_absolute_error: 2.
5833
162 Epoch 57/1000
163 - 0s - loss: 7.1830 -
mean_absolute_error: 1.8377 - val_loss
: 12.6467 - val_mean_absolute_error: 2.
5032
164 Epoch 58/1000
165 - 0s - loss: 6.9233 -
mean_absolute_error: 1.8006 - val_loss
: 12.9391 - val_mean_absolute_error: 2.
5442
166 Epoch 59/1000
167 - 0s - loss: 6.9152 -
mean_absolute_error: 1.8035 - val_loss
: 14.1281 - val_mean_absolute_error: 2.
5920
168 Epoch 60/1000
169 - 0s - loss: 6.6614 -
mean_absolute_error: 1.7891 - val_loss
: 15.5446 - val_mean_absolute_error: 2.
6221
170
171 Epoch 00060: val_mean_absolute_error
```

```
171 did not improve from 2.45854
172 Epoch 61/1000
173   - 0s - loss: 7.0422 -
    mean_absolute_error: 1.8260 - val_loss
    : 12.3304 - val_mean_absolute_error: 2.
    4674
174 Epoch 62/1000
175   - 0s - loss: 6.8601 -
    mean_absolute_error: 1.8219 - val_loss
    : 12.8567 - val_mean_absolute_error: 2.
    5128
176 Epoch 63/1000
177   - 0s - loss: 6.5729 -
    mean_absolute_error: 1.7427 - val_loss
    : 16.2805 - val_mean_absolute_error: 2.
    7514
178 Epoch 64/1000
179   - 0s - loss: 6.6873 -
    mean_absolute_error: 1.8112 - val_loss
    : 13.7294 - val_mean_absolute_error: 2.
    6141
180 Epoch 65/1000
181   - 0s - loss: 6.4925 -
    mean_absolute_error: 1.7712 - val_loss
```

```
181 : 13.8488 - val_mean_absolute_error: 2.5839
182 Epoch 66/1000
183 - 0s - loss: 6.3370 - mean_absolute_error: 1.7626 - val_loss: 12.4611 - val_mean_absolute_error: 2.5212
184 Epoch 67/1000
185 - 0s - loss: 6.4373 - mean_absolute_error: 1.7643 - val_loss: 13.0092 - val_mean_absolute_error: 2.5384
186 Epoch 68/1000
187 - 0s - loss: 6.4051 - mean_absolute_error: 1.7779 - val_loss: 13.3328 - val_mean_absolute_error: 2.7080
188 Epoch 69/1000
189 - 0s - loss: 6.4513 - mean_absolute_error: 1.7229 - val_loss: 14.7567 - val_mean_absolute_error: 2.6862
190 Epoch 70/1000
191 - 0s - loss: 6.2459 -
```

```
191 mean_absolute_error: 1.7464 - val_loss
    : 12.9123 - val_mean_absolute_error: 2.
    5536
```

```
192
```

```
193 Epoch 00070: val_mean_absolute_error
    did not improve from 2.45854
```

```
194 Epoch 71/1000
```

```
195   - 0s - loss: 6.1774 -
    mean_absolute_error: 1.6919 - val_loss
    : 13.9759 - val_mean_absolute_error: 2.
    5164
```

```
196 Epoch 72/1000
```

```
197   - 0s - loss: 6.3357 -
    mean_absolute_error: 1.7462 - val_loss
    : 13.3034 - val_mean_absolute_error: 2.
    5839
```

```
198 Epoch 73/1000
```

```
199   - 0s - loss: 6.1997 -
    mean_absolute_error: 1.7343 - val_loss
    : 12.4309 - val_mean_absolute_error: 2.
    4936
```

```
200 Epoch 74/1000
```

```
201   - 0s - loss: 6.0883 -
    mean_absolute_error: 1.6695 - val_loss
```

```
201 : 13.0401 - val_mean_absolute_error: 2.
4979
202 Epoch 75/1000
203 - 0s - loss: 6.2554 -
mean_absolute_error: 1.7133 - val_loss
: 13.3727 - val_mean_absolute_error: 2.
4556
204 Epoch 76/1000
205 - 0s - loss: 6.0023 -
mean_absolute_error: 1.6996 - val_loss
: 12.8556 - val_mean_absolute_error: 2.
4618
206 Epoch 77/1000
207 - 0s - loss: 5.9766 -
mean_absolute_error: 1.6278 - val_loss
: 13.0897 - val_mean_absolute_error: 2.
4513
208 Epoch 78/1000
209 - 0s - loss: 6.0793 -
mean_absolute_error: 1.6577 - val_loss
: 12.8823 - val_mean_absolute_error: 2.
4754
210 Epoch 79/1000
211 - 0s - loss: 5.7519 -
```

```
211 mean_absolute_error: 1.6324 - val_loss
    : 13.3224 - val_mean_absolute_error: 2.
    6205
212 Epoch 80/1000
213   - 0s - loss: 5.7596 -
    mean_absolute_error: 1.6362 - val_loss
    : 12.9500 - val_mean_absolute_error: 2.
    5735
214
215 Epoch 00080: val_mean_absolute_error
    did not improve from 2.45854
216 Epoch 81/1000
217   - 0s - loss: 5.7959 -
    mean_absolute_error: 1.6462 - val_loss
    : 13.0019 - val_mean_absolute_error: 2.
    6597
218 Epoch 82/1000
219   - 0s - loss: 5.7090 -
    mean_absolute_error: 1.6289 - val_loss
    : 12.8836 - val_mean_absolute_error: 2.
    5374
220 Epoch 83/1000
221   - 0s - loss: 5.6286 -
    mean_absolute_error: 1.6220 - val_loss
```

```
221 : 13.6477 - val_mean_absolute_error: 2.  
4625  
222 Epoch 84/1000  
223 - 0s - loss: 5.7457 -  
mean_absolute_error: 1.6571 - val_loss  
: 12.6499 - val_mean_absolute_error: 2.  
4417  
224 Epoch 85/1000  
225 - 0s - loss: 5.6964 -  
mean_absolute_error: 1.6348 - val_loss  
: 12.9228 - val_mean_absolute_error: 2.  
4512  
226 Epoch 86/1000  
227 - 0s - loss: 5.6430 -  
mean_absolute_error: 1.6679 - val_loss  
: 13.7091 - val_mean_absolute_error: 2.  
4371  
228 Epoch 87/1000  
229 - 0s - loss: 5.5740 -  
mean_absolute_error: 1.6226 - val_loss  
: 13.9593 - val_mean_absolute_error: 2.  
4862  
230 Epoch 88/1000  
231 - 0s - loss: 5.5570 -
```

```
231 mean_absolute_error: 1.6255 - val_loss
    : 13.3627 - val_mean_absolute_error: 2.
    5253
```

```
232 Epoch 89/1000
```

```
233   - 0s - loss: 5.5249 -
      mean_absolute_error: 1.6002 - val_loss
      : 13.3536 - val_mean_absolute_error: 2.
      4942
```

```
234 Epoch 90/1000
```

```
235   - 0s - loss: 5.4470 -
      mean_absolute_error: 1.5859 - val_loss
      : 13.5879 - val_mean_absolute_error: 2.
      4849
```

```
236
```

```
237 Epoch 00090: val_mean_absolute_error
    did not improve from 2.45854
```

```
238 Epoch 91/1000
```

```
239   - 0s - loss: 5.3638 -
      mean_absolute_error: 1.6028 - val_loss
      : 14.8538 - val_mean_absolute_error: 2.
      8569
```

```
240 Epoch 92/1000
```

```
241   - 0s - loss: 5.4877 -
      mean_absolute_error: 1.6167 - val_loss
```



```
241 : 12.7267 - val_mean_absolute_error: 2.
    5878
242 Epoch 93/1000
243   - 0s - loss: 5.2634 -
    mean_absolute_error: 1.5778 - val_loss
    : 14.3206 - val_mean_absolute_error: 2.
    4848
244 Epoch 94/1000
245   - 0s - loss: 5.2590 -
    mean_absolute_error: 1.5730 - val_loss
    : 13.5896 - val_mean_absolute_error: 2.
    6795
246 Epoch 95/1000
247   - 0s - loss: 5.1998 -
    mean_absolute_error: 1.5744 - val_loss
    : 13.1699 - val_mean_absolute_error: 2.
    4703
248 Epoch 96/1000
249   - 0s - loss: 4.9457 -
    mean_absolute_error: 1.5331 - val_loss
    : 13.9732 - val_mean_absolute_error: 2.
    4181
250 Epoch 97/1000
251   - 0s - loss: 5.2812 -
```

```
251 mean_absolute_error: 1.5826 - val_loss
    : 12.9996 - val_mean_absolute_error: 2.
    45964
```

```
252 Epoch 98/1000
```

```
253   - 0s - loss: 5.3232 -
    mean_absolute_error: 1.5817 - val_loss
    : 12.7469 - val_mean_absolute_error: 2.
    4761
```

```
254 Epoch 99/1000
```

```
255   - 0s - loss: 4.9620 -
    mean_absolute_error: 1.5284 - val_loss
    : 13.1238 - val_mean_absolute_error: 2.
    4643
```

```
256 Epoch 100/1000
```

```
257   - 0s - loss: 5.1833 -
    mean_absolute_error: 1.5380 - val_loss
    : 14.0637 - val_mean_absolute_error: 2.
    4597
```

```
258
```

```
259 Epoch 00100: val_mean_absolute_error
    did not improve from 2.45854
```

```
260 Epoch 101/1000
```

```
261   - 0s - loss: 5.0293 -
    mean_absolute_error: 1.5305 - val_loss
```

```
261 : 15.5031 - val_mean_absolute_error: 2.  
5447  
262 Epoch 102/1000  
263 - 0s - loss: 4.9056 -  
mean_absolute_error: 1.5570 - val_loss  
: 15.6589 - val_mean_absolute_error: 2.  
5277  
264 Epoch 103/1000  
265 - 0s - loss: 5.0046 -  
mean_absolute_error: 1.5583 - val_loss  
: 14.5436 - val_mean_absolute_error: 2.  
4849  
266 Epoch 104/1000  
267 - 0s - loss: 5.0450 -  
mean_absolute_error: 1.5547 - val_loss  
: 13.1390 - val_mean_absolute_error: 2.  
4331  
268 Epoch 105/1000  
269 - 0s - loss: 4.7754 -  
mean_absolute_error: 1.5188 - val_loss  
: 13.7144 - val_mean_absolute_error: 2.  
4609  
270 Epoch 106/1000  
271 - 0s - loss: 5.0500 -
```

```
271 mean_absolute_error: 1.5471 - val_loss
    : 14.8180 - val_mean_absolute_error: 2.
5740
```

```
272 Epoch 107/1000
```

```
273   - 0s - loss: 4.8728 -
    mean_absolute_error: 1.4891 - val_loss
    : 13.8454 - val_mean_absolute_error: 2.
4251
```

```
274 Epoch 108/1000
```

```
275   - 0s - loss: 4.7332 -
    mean_absolute_error: 1.4691 - val_loss
    : 13.6337 - val_mean_absolute_error: 2.
6243
```

```
276 Epoch 109/1000
```

```
277   - 0s - loss: 4.6060 -
    mean_absolute_error: 1.4767 - val_loss
    : 13.6645 - val_mean_absolute_error: 2.
4436
```

```
278 Epoch 110/1000
```

```
279   - 0s - loss: 4.6188 -
    mean_absolute_error: 1.4979 - val_loss
    : 12.9895 - val_mean_absolute_error: 2.
4880
```

```
280
```

```
281 Epoch 00110: val_mean_absolute_error
    did not improve from 2.45854
282 Epoch 111/1000
283   - 0s - loss: 4.7260 -
    mean_absolute_error: 1.5002 - val_loss
    : 14.2647 - val_mean_absolute_error: 2.
    5062
284 Epoch 112/1000
285   - 0s - loss: 4.8011 -
    mean_absolute_error: 1.4700 - val_loss
    : 13.2491 - val_mean_absolute_error: 2.
    5159
286 Epoch 113/1000
287   - 0s - loss: 4.7271 -
    mean_absolute_error: 1.4957 - val_loss
    : 12.8246 - val_mean_absolute_error: 2.
    5318
288 Epoch 114/1000
289   - 0s - loss: 4.6512 -
    mean_absolute_error: 1.4513 - val_loss
    : 13.4932 - val_mean_absolute_error: 2.
    4297
290 Epoch 115/1000
291   - 0s - loss: 4.6407 -
```

```
291 mean_absolute_error: 1.4448 - val_loss
    : 13.5309 - val_mean_absolute_error: 2.
4035
292 Epoch 116/1000
293   - 0s - loss: 4.4667 -
    mean_absolute_error: 1.4160 - val_loss
    : 14.9832 - val_mean_absolute_error: 2.
5410
294 Epoch 117/1000
295   - 0s - loss: 4.4219 -
    mean_absolute_error: 1.4754 - val_loss
    : 13.7533 - val_mean_absolute_error: 2.
3929
296 Epoch 118/1000
297   - 0s - loss: 4.5402 -
    mean_absolute_error: 1.4637 - val_loss
    : 13.8223 - val_mean_absolute_error: 2.
4106
298 Epoch 119/1000
299   - 0s - loss: 4.5026 -
    mean_absolute_error: 1.4735 - val_loss
    : 13.3173 - val_mean_absolute_error: 2.
4555
300 Epoch 120/1000
```

```
301 - 0s - loss: 4.4632 -  
mean_absolute_error: 1.4456 - val_loss  
: 13.2312 - val_mean_absolute_error: 2.  
4173  
302  
303 Epoch 00120: val_mean_absolute_error  
improved from 2.45854 to 2.41731,  
saving model to ./model/model_Epoch0120  
-val_mean_absolute_error2.42.h5  
304 Epoch 121/1000  
305 - 0s - loss: 4.4761 -  
mean_absolute_error: 1.4250 - val_loss  
: 16.6304 - val_mean_absolute_error: 2.  
7050  
306 Epoch 122/1000  
307 - 0s - loss: 4.6561 -  
mean_absolute_error: 1.4688 - val_loss  
: 15.6400 - val_mean_absolute_error: 2.  
5128  
308 Epoch 123/1000  
309 - 0s - loss: 4.3071 -  
mean_absolute_error: 1.4362 - val_loss  
: 13.9746 - val_mean_absolute_error: 2.  
6208
```

```
310 Epoch 124/1000
311   - 0s - loss: 4.3706 -
    mean_absolute_error: 1.4417 - val_loss
    : 13.5181 - val_mean_absolute_error: 2.
    5104
312 Epoch 125/1000
313   - 0s - loss: 4.2669 -
    mean_absolute_error: 1.4170 - val_loss
    : 13.7394 - val_mean_absolute_error: 2.
    4933
314 Epoch 126/1000
315   - 0s - loss: 4.2876 -
    mean_absolute_error: 1.4605 - val_loss
    : 13.5563 - val_mean_absolute_error: 2.
    3906
316 Epoch 127/1000
317   - 0s - loss: 4.4309 -
    mean_absolute_error: 1.4361 - val_loss
    : 14.3062 - val_mean_absolute_error: 2.
    4536
318 Epoch 128/1000
319   - 0s - loss: 4.0691 -
    mean_absolute_error: 1.3975 - val_loss
    : 13.7712 - val_mean_absolute_error: 2.
```



```
319 4211
320 Epoch 129/1000
321   - 0s - loss: 4.1112 -
    mean_absolute_error: 1.4281 - val_loss
    : 13.4013 - val_mean_absolute_error: 2.
4146
322 Epoch 130/1000
323   - 0s - loss: 4.2188 -
    mean_absolute_error: 1.4310 - val_loss
    : 14.9179 - val_mean_absolute_error: 2.
5752
324
325 Epoch 00130: val_mean_absolute_error
    did not improve from 2.41731
326 Epoch 131/1000
327   - 0s - loss: 4.1455 -
    mean_absolute_error: 1.4184 - val_loss
    : 13.6284 - val_mean_absolute_error: 2.
4262
328 Epoch 132/1000
329   - 0s - loss: 4.1086 -
    mean_absolute_error: 1.3804 - val_loss
    : 14.6837 - val_mean_absolute_error: 2.
4741
```

```
330 Epoch 133/1000
331   - 0s - loss: 4.0551 -
      mean_absolute_error: 1.4008 - val_loss
      : 14.8289 - val_mean_absolute_error: 2.
      4647
332 Epoch 134/1000
333   - 0s - loss: 4.0402 -
      mean_absolute_error: 1.3600 - val_loss
      : 13.2224 - val_mean_absolute_error: 2.
      3943
334 Epoch 135/1000
335   - 0s - loss: 4.0246 -
      mean_absolute_error: 1.4158 - val_loss
      : 13.7612 - val_mean_absolute_error: 2.
      5837
336 Epoch 136/1000
337   - 0s - loss: 4.1324 -
      mean_absolute_error: 1.3809 - val_loss
      : 13.3615 - val_mean_absolute_error: 2.
      4132
338 Epoch 137/1000
339   - 0s - loss: 4.1333 -
      mean_absolute_error: 1.4200 - val_loss
      : 13.4753 - val_mean_absolute_error: 2.
```

```
339 3824
340 Epoch 138/1000
341   - 0s - loss: 4.1006 -
      mean_absolute_error: 1.4123 - val_loss
      : 13.2317 - val_mean_absolute_error: 2.
5027
342 Epoch 139/1000
343   - 0s - loss: 3.9231 -
      mean_absolute_error: 1.3650 - val_loss
      : 13.2198 - val_mean_absolute_error: 2.
4040
344 Epoch 140/1000
345   - 0s - loss: 3.9884 -
      mean_absolute_error: 1.3936 - val_loss
      : 13.6991 - val_mean_absolute_error: 2.
4446
346
347 Epoch 00140: val_mean_absolute_error
      did not improve from 2.41731
348 Epoch 141/1000
349   - 0s - loss: 3.8466 -
      mean_absolute_error: 1.3519 - val_loss
      : 13.4792 - val_mean_absolute_error: 2.
4831
```

```
350 Epoch 142/1000
351   - 0s - loss: 3.7813 -
      mean_absolute_error: 1.3743 - val_loss
      : 14.5342 - val_mean_absolute_error: 2.
      4961
352 Epoch 143/1000
353   - 0s - loss: 3.9038 -
      mean_absolute_error: 1.3956 - val_loss
      : 13.9396 - val_mean_absolute_error: 2.
      4406
354 Epoch 144/1000
355   - 0s - loss: 3.9363 -
      mean_absolute_error: 1.3592 - val_loss
      : 13.8653 - val_mean_absolute_error: 2.
      3873
356 Epoch 145/1000
357   - 0s - loss: 3.6789 -
      mean_absolute_error: 1.3423 - val_loss
      : 14.0408 - val_mean_absolute_error: 2.
      6104
358 Epoch 146/1000
359   - 0s - loss: 3.9000 -
      mean_absolute_error: 1.3731 - val_loss
      : 14.4238 - val_mean_absolute_error: 2.
```

```
359 4165
360 Epoch 147/1000
361   - 0s - loss: 4.1753 -
      mean_absolute_error: 1.4052 - val_loss
      : 13.6717 - val_mean_absolute_error: 2.
3827
362 Epoch 148/1000
363   - 0s - loss: 3.6750 -
      mean_absolute_error: 1.2982 - val_loss
      : 14.3248 - val_mean_absolute_error: 2.
5185
364 Epoch 149/1000
365   - 0s - loss: 3.8542 -
      mean_absolute_error: 1.3396 - val_loss
      : 15.4329 - val_mean_absolute_error: 2.
4428
366 Epoch 150/1000
367   - 0s - loss: 3.7479 -
      mean_absolute_error: 1.3033 - val_loss
      : 13.8370 - val_mean_absolute_error: 2.
4211
368
369 Epoch 00150: val_mean_absolute_error
      did not improve from 2.41731
```

```
370 Epoch 151/1000
371   - 0s - loss: 3.7807 -
      mean_absolute_error: 1.3284 - val_loss
      : 14.6462 - val_mean_absolute_error: 2.
3955
372 Epoch 152/1000
373   - 0s - loss: 3.7666 -
      mean_absolute_error: 1.3265 - val_loss
      : 13.4395 - val_mean_absolute_error: 2.
4403
374 Epoch 153/1000
375   - 0s - loss: 3.8173 -
      mean_absolute_error: 1.3477 - val_loss
      : 13.7166 - val_mean_absolute_error: 2.
3924
376 Epoch 154/1000
377   - 0s - loss: 3.5425 -
      mean_absolute_error: 1.2959 - val_loss
      : 14.4431 - val_mean_absolute_error: 2.
6686
378 Epoch 155/1000
379   - 0s - loss: 3.7825 -
      mean_absolute_error: 1.3310 - val_loss
      : 13.8088 - val_mean_absolute_error: 2.
```

```
379 4688
380 Epoch 156/1000
381   - 0s - loss: 3.6538 -
      mean_absolute_error: 1.3102 - val_loss
      : 13.7611 - val_mean_absolute_error: 2.
4475
382 Epoch 157/1000
383   - 0s - loss: 3.7245 -
      mean_absolute_error: 1.3132 - val_loss
      : 15.0568 - val_mean_absolute_error: 2.
4247
384 Epoch 158/1000
385   - 0s - loss: 3.6386 -
      mean_absolute_error: 1.3548 - val_loss
      : 15.4886 - val_mean_absolute_error: 2.
5458
386 Epoch 159/1000
387   - 0s - loss: 3.7774 -
      mean_absolute_error: 1.3810 - val_loss
      : 14.2584 - val_mean_absolute_error: 2.
3867
388 Epoch 160/1000
389   - 0s - loss: 3.6316 -
      mean_absolute_error: 1.3275 - val_loss
```

```
389 : 13.9726 - val_mean_absolute_error: 2.4078
```

```
390
```

```
391 Epoch 00160: val_mean_absolute_error
improved from 2.41731 to 2.40778,
saving model to ./model/model_Epoch0160-
val_mean_absolute_error2.41.h5
```

```
392 Epoch 161/1000
```

```
393 - 0s - loss: 3.6482 -
mean_absolute_error: 1.2964 - val_loss
: 15.4859 - val_mean_absolute_error: 2.4212
```

```
394 Epoch 162/1000
```

```
395 - 0s - loss: 3.5675 -
mean_absolute_error: 1.2957 - val_loss
: 15.5034 - val_mean_absolute_error: 2.3820
```

```
396 Epoch 163/1000
```

```
397 - 0s - loss: 3.6060 -
mean_absolute_error: 1.2962 - val_loss
: 15.0549 - val_mean_absolute_error: 2.4616
```

```
398 Epoch 164/1000
```

```
399 - 0s - loss: 3.4726 -
```



```
399 mean_absolute_error: 1.3086 - val_loss
    : 14.9061 - val_mean_absolute_error: 2.
3588
400 Epoch 165/1000
401   - 0s - loss: 3.6794 -
    mean_absolute_error: 1.3153 - val_loss
    : 13.7839 - val_mean_absolute_error: 2.
4864
402 Epoch 166/1000
403   - 0s - loss: 3.7371 -
    mean_absolute_error: 1.3539 - val_loss
    : 13.9673 - val_mean_absolute_error: 2.
3452
404 Epoch 167/1000
405   - 0s - loss: 3.3578 -
    mean_absolute_error: 1.2785 - val_loss
    : 14.4485 - val_mean_absolute_error: 2.
4760
406 Epoch 168/1000
407   - 0s - loss: 3.3720 -
    mean_absolute_error: 1.2868 - val_loss
    : 14.1168 - val_mean_absolute_error: 2.
4263
408 Epoch 169/1000
```

```
409 - 0s - loss: 3.3311 -  
mean_absolute_error: 1.2700 - val_loss  
: 14.1818 - val_mean_absolute_error: 2.  
4602  
410 Epoch 170/1000  
411 - 0s - loss: 3.7841 -  
mean_absolute_error: 1.3124 - val_loss  
: 16.5750 - val_mean_absolute_error: 2.  
5096  
412  
413 Epoch 00170: val_mean_absolute_error  
did not improve from 2.40778  
414 Epoch 171/1000  
415 - 0s - loss: 3.5035 -  
mean_absolute_error: 1.3032 - val_loss  
: 15.9505 - val_mean_absolute_error: 2.  
4628  
416 Epoch 172/1000  
417 - 0s - loss: 3.4771 -  
mean_absolute_error: 1.2604 - val_loss  
: 13.5665 - val_mean_absolute_error: 2.  
5391  
418 Epoch 173/1000  
419 - 0s - loss: 3.3360 -
```

```
419 mean_absolute_error: 1.2582 - val_loss
    : 15.5843 - val_mean_absolute_error: 2.
4070
420 Epoch 174/1000
421   - 0s - loss: 3.4872 -
    mean_absolute_error: 1.2901 - val_loss
    : 14.3084 - val_mean_absolute_error: 2.
3939
422 Epoch 175/1000
423   - 0s - loss: 3.4222 -
    mean_absolute_error: 1.2782 - val_loss
    : 13.7511 - val_mean_absolute_error: 2.
4232
424 Epoch 176/1000
425   - 0s - loss: 3.3319 -
    mean_absolute_error: 1.2399 - val_loss
    : 13.6530 - val_mean_absolute_error: 2.
4643
426 Epoch 177/1000
427   - 0s - loss: 3.3470 -
    mean_absolute_error: 1.2410 - val_loss
    : 14.0897 - val_mean_absolute_error: 2.
4139
428 Epoch 178/1000
```

```
429 - 0s - loss: 3.1792 -  
mean_absolute_error: 1.2286 - val_loss  
: 14.6261 - val_mean_absolute_error: 2.  
4106  
430 Epoch 179/1000  
431 - 0s - loss: 3.3377 -  
mean_absolute_error: 1.2557 - val_loss  
: 15.8980 - val_mean_absolute_error: 2.  
5232  
432 Epoch 180/1000  
433 - 0s - loss: 3.2160 -  
mean_absolute_error: 1.2167 - val_loss  
: 14.7078 - val_mean_absolute_error: 2.  
4482  
434  
435 Epoch 00180: val_mean_absolute_error  
did not improve from 2.40778  
436 Epoch 181/1000  
437 - 0s - loss: 3.4325 -  
mean_absolute_error: 1.2511 - val_loss  
: 15.5223 - val_mean_absolute_error: 2.  
6207  
438 Epoch 182/1000  
439 - 0s - loss: 3.3135 -
```

```
439 mean_absolute_error: 1.2275 - val_loss
    : 13.6721 - val_mean_absolute_error: 2.
4526
440 Epoch 183/1000
441   - 0s - loss: 3.2691 -
    mean_absolute_error: 1.1872 - val_loss
    : 14.4087 - val_mean_absolute_error: 2.
4031
442 Epoch 184/1000
443   - 0s - loss: 3.1561 -
    mean_absolute_error: 1.2373 - val_loss
    : 14.4410 - val_mean_absolute_error: 2.
3893
444 Epoch 185/1000
445   - 0s - loss: 3.1449 -
    mean_absolute_error: 1.2159 - val_loss
    : 14.0137 - val_mean_absolute_error: 2.
4724
446 Epoch 186/1000
447   - 0s - loss: 3.1663 -
    mean_absolute_error: 1.2324 - val_loss
    : 13.9958 - val_mean_absolute_error: 2.
4142
448 Epoch 187/1000
```

```
449 - 0s - loss: 3.2256 -  
mean_absolute_error: 1.2207 - val_loss  
: 14.0745 - val_mean_absolute_error: 2.  
3685
```

```
450 Epoch 188/1000
```

```
451 - 0s - loss: 3.1972 -  
mean_absolute_error: 1.2269 - val_loss  
: 15.0055 - val_mean_absolute_error: 2.  
6795
```

```
452 Epoch 189/1000
```

```
453 - 0s - loss: 3.2783 -  
mean_absolute_error: 1.2509 - val_loss  
: 14.3020 - val_mean_absolute_error: 2.  
4139
```

```
454 Epoch 190/1000
```

```
455 - 0s - loss: 3.0791 -  
mean_absolute_error: 1.1898 - val_loss  
: 15.0499 - val_mean_absolute_error: 2.  
3961
```

```
456
```

```
457 Epoch 00190: val_mean_absolute_error  
improved from 2.40778 to 2.39609,  
saving model to ./model/model_Epoch0190  
-val_mean_absolute_error2.40.h5
```

```
458 Epoch 191/1000
459   - 0s - loss: 3.0325 -
      mean_absolute_error: 1.2678 - val_loss
      : 15.3679 - val_mean_absolute_error: 2.
      8008
460 Epoch 192/1000
461   - 0s - loss: 3.4531 -
      mean_absolute_error: 1.3084 - val_loss
      : 14.7711 - val_mean_absolute_error: 2.
      5330
462 Epoch 193/1000
463   - 0s - loss: 3.1292 -
      mean_absolute_error: 1.2138 - val_loss
      : 14.5937 - val_mean_absolute_error: 2.
      4041
464 Epoch 194/1000
465   - 0s - loss: 3.0802 -
      mean_absolute_error: 1.1800 - val_loss
      : 14.6046 - val_mean_absolute_error: 2.
      4718
466 Epoch 195/1000
467   - 0s - loss: 2.9206 -
      mean_absolute_error: 1.1623 - val_loss
      : 14.9742 - val_mean_absolute_error: 2.
```

```
467 3340
468 Epoch 196/1000
469   - 0s - loss: 3.0579 -
      mean_absolute_error: 1.2232 - val_loss
      : 14.2280 - val_mean_absolute_error: 2.
3048
470 Epoch 197/1000
471   - 0s - loss: 3.2301 -
      mean_absolute_error: 1.2337 - val_loss
      : 13.9735 - val_mean_absolute_error: 2.
3674
472 Epoch 198/1000
473   - 0s - loss: 3.0111 -
      mean_absolute_error: 1.1821 - val_loss
      : 16.7211 - val_mean_absolute_error: 2.
4829
474 Epoch 199/1000
475   - 0s - loss: 3.1437 -
      mean_absolute_error: 1.2537 - val_loss
      : 14.5429 - val_mean_absolute_error: 2.
4753
476 Epoch 200/1000
477   - 0s - loss: 2.9201 -
      mean_absolute_error: 1.1577 - val_loss
```



```
477 : 14.4668 - val_mean_absolute_error: 2.  
5071
```

```
478
```

```
479 Epoch 00200: val_mean_absolute_error  
did not improve from 2.39609
```

```
480 Epoch 201/1000
```

```
481 - 0s - loss: 2.8936 -  
mean_absolute_error: 1.2036 - val_loss  
: 15.0156 - val_mean_absolute_error: 2.  
7976
```

```
482 Epoch 202/1000
```

```
483 - 0s - loss: 3.0635 -  
mean_absolute_error: 1.1905 - val_loss  
: 15.3474 - val_mean_absolute_error: 2.  
4586
```

```
484 Epoch 203/1000
```

```
485 - 0s - loss: 2.8836 -  
mean_absolute_error: 1.2086 - val_loss  
: 14.6499 - val_mean_absolute_error: 2.  
4464
```

```
486 Epoch 204/1000
```

```
487 - 0s - loss: 3.0110 -  
mean_absolute_error: 1.2234 - val_loss  
: 15.2639 - val_mean_absolute_error: 2.
```

```
487 5076
488 Epoch 205/1000
489   - 0s - loss: 3.0484 -
      mean_absolute_error: 1.1808 - val_loss
      : 15.3061 - val_mean_absolute_error: 2.
3934
490 Epoch 206/1000
491   - 0s - loss: 2.9857 -
      mean_absolute_error: 1.1822 - val_loss
      : 14.4578 - val_mean_absolute_error: 2.
4569
492 Epoch 207/1000
493   - 0s - loss: 2.9652 -
      mean_absolute_error: 1.1830 - val_loss
      : 15.5116 - val_mean_absolute_error: 2.
4508
494 Epoch 208/1000
495   - 0s - loss: 3.0027 -
      mean_absolute_error: 1.1728 - val_loss
      : 16.9804 - val_mean_absolute_error: 2.
5010
496 Epoch 209/1000
497   - 0s - loss: 2.8897 -
      mean_absolute_error: 1.1776 - val_loss
```

```
497 : 14.4572 - val_mean_absolute_error: 2.
3800
498 Epoch 210/1000
499   - 0s - loss: 2.9027 -
mean_absolute_error: 1.1639 - val_loss
: 14.3953 - val_mean_absolute_error: 2.
5886
500
501 Epoch 00210: val_mean_absolute_error
did not improve from 2.39609
502 Epoch 211/1000
503   - 0s - loss: 2.8137 -
mean_absolute_error: 1.1649 - val_loss
: 16.7752 - val_mean_absolute_error: 2.
4754
504 Epoch 212/1000
505   - 0s - loss: 2.8919 -
mean_absolute_error: 1.1783 - val_loss
: 14.8504 - val_mean_absolute_error: 2.
6328
506 Epoch 213/1000
507   - 0s - loss: 3.0066 -
mean_absolute_error: 1.1837 - val_loss
: 14.8868 - val_mean_absolute_error: 2.
```

```
507 5250
508 Epoch 214/1000
509   - 0s - loss: 2.7766 -
      mean_absolute_error: 1.1697 - val_loss
      : 15.0705 - val_mean_absolute_error: 2.
6104
510 Epoch 215/1000
511   - 0s - loss: 2.9782 -
      mean_absolute_error: 1.2100 - val_loss
      : 18.5210 - val_mean_absolute_error: 2.
5921
512 Epoch 216/1000
513   - 0s - loss: 3.0009 -
      mean_absolute_error: 1.1735 - val_loss
      : 16.9730 - val_mean_absolute_error: 2.
3997
514 Epoch 217/1000
515   - 0s - loss: 3.0105 -
      mean_absolute_error: 1.1824 - val_loss
      : 14.4091 - val_mean_absolute_error: 2.
3876
516 Epoch 218/1000
517   - 0s - loss: 2.7362 -
      mean_absolute_error: 1.1455 - val_loss
```

```
517 : 14.2837 - val_mean_absolute_error: 2.
3787
518 Epoch 219/1000
519 - 0s - loss: 2.7011 -
mean_absolute_error: 1.1411 - val_loss
: 17.6958 - val_mean_absolute_error: 2.
6283
520 Epoch 220/1000
521 - 0s - loss: 2.7318 -
mean_absolute_error: 1.1455 - val_loss
: 14.2764 - val_mean_absolute_error: 2.
3704
522
523 Epoch 00220: val_mean_absolute_error
improved from 2.39609 to 2.37044,
saving model to ./model/model_Epoch0220
-val_mean_absolute_error2.37.h5
524 Epoch 221/1000
525 - 0s - loss: 2.6138 -
mean_absolute_error: 1.1449 - val_loss
: 14.9864 - val_mean_absolute_error: 2.
3624
526 Epoch 222/1000
527 - 0s - loss: 2.6574 -
```

```
527 mean_absolute_error: 1.1180 - val_loss
    : 16.6343 - val_mean_absolute_error: 2.
3688
528 Epoch 223/1000
529   - 0s - loss: 2.8195 -
    mean_absolute_error: 1.1688 - val_loss
    : 15.1106 - val_mean_absolute_error: 2.
3773
530 Epoch 224/1000
531   - 0s - loss: 2.7440 -
    mean_absolute_error: 1.1254 - val_loss
    : 15.2954 - val_mean_absolute_error: 2.
3837
532 Epoch 225/1000
533   - 0s - loss: 2.7820 -
    mean_absolute_error: 1.1146 - val_loss
    : 15.2769 - val_mean_absolute_error: 2.
6157
534 Epoch 226/1000
535   - 0s - loss: 2.6032 -
    mean_absolute_error: 1.1488 - val_loss
    : 14.2633 - val_mean_absolute_error: 2.
3651
536 Epoch 227/1000
```

```
537 - 0s - loss: 2.7146 -  
mean_absolute_error: 1.1339 - val_loss  
: 17.7999 - val_mean_absolute_error: 2.  
4554  
538 Epoch 228/1000  
539 - 0s - loss: 2.7311 -  
mean_absolute_error: 1.1468 - val_loss  
: 15.5700 - val_mean_absolute_error: 2.  
3963  
540 Epoch 229/1000  
541 - 0s - loss: 2.5778 -  
mean_absolute_error: 1.1225 - val_loss  
: 15.2745 - val_mean_absolute_error: 2.  
3713  
542 Epoch 230/1000  
543 - 0s - loss: 2.7418 -  
mean_absolute_error: 1.1692 - val_loss  
: 15.0234 - val_mean_absolute_error: 2.  
3743  
544  
545 Epoch 00230: val_mean_absolute_error  
did not improve from 2.37044  
546 Epoch 231/1000  
547 - 0s - loss: 2.6191 -
```

```
547 mean_absolute_error: 1.1256 - val_loss
    : 15.2519 - val_mean_absolute_error: 2.
4820
```

```
548 Epoch 232/1000
```

```
549   - 0s - loss: 2.7957 -
    mean_absolute_error: 1.1661 - val_loss
    : 14.9350 - val_mean_absolute_error: 2.
3477
```

```
550 Epoch 233/1000
```

```
551   - 0s - loss: 2.5147 -
    mean_absolute_error: 1.1031 - val_loss
    : 15.3568 - val_mean_absolute_error: 2.
7102
```

```
552 Epoch 234/1000
```

```
553   - 0s - loss: 2.6380 -
    mean_absolute_error: 1.1422 - val_loss
    : 14.9703 - val_mean_absolute_error: 2.
3754
```

```
554 Epoch 235/1000
```

```
555   - 0s - loss: 2.6223 -
    mean_absolute_error: 1.1284 - val_loss
    : 15.6622 - val_mean_absolute_error: 2.
3686
```

```
556 Epoch 236/1000
```



```
557 - 0s - loss: 2.5740 -  
mean_absolute_error: 1.1127 - val_loss  
: 14.2099 - val_mean_absolute_error: 2.  
4605  
558 Epoch 237/1000  
559 - 0s - loss: 2.5873 -  
mean_absolute_error: 1.1246 - val_loss  
: 15.8376 - val_mean_absolute_error: 2.  
3912  
560 Epoch 238/1000  
561 - 0s - loss: 2.7348 -  
mean_absolute_error: 1.1609 - val_loss  
: 14.4543 - val_mean_absolute_error: 2.  
3517  
562 Epoch 239/1000  
563 - 0s - loss: 2.4589 -  
mean_absolute_error: 1.0827 - val_loss  
: 14.9896 - val_mean_absolute_error: 2.  
3719  
564 Epoch 240/1000  
565 - 0s - loss: 2.4529 -  
mean_absolute_error: 1.0630 - val_loss  
: 15.6208 - val_mean_absolute_error: 2.  
3508
```

566

567 Epoch 00240: val\_mean\_absolute\_error  
improved from 2.37044 to 2.35075,  
saving model to ./model/model\_Epoch0240  
-val\_mean\_absolute\_error2.35.h5

568 Epoch 241/1000

569 - 0s - loss: 2.6008 -  
mean\_absolute\_error: 1.1054 - val\_loss  
: 15.1442 - val\_mean\_absolute\_error: 2.  
5803

570 Epoch 242/1000

571 - 0s - loss: 2.5024 -  
mean\_absolute\_error: 1.0556 - val\_loss  
: 16.2678 - val\_mean\_absolute\_error: 2.  
4531

572 Epoch 243/1000

573 - 0s - loss: 2.5392 -  
mean\_absolute\_error: 1.1391 - val\_loss  
: 15.8161 - val\_mean\_absolute\_error: 2.  
3862

574 Epoch 244/1000

575 - 0s - loss: 2.5439 -  
mean\_absolute\_error: 1.1179 - val\_loss  
: 15.7646 - val\_mean\_absolute\_error: 2.

```
575 3813
576 Epoch 245/1000
577   - 0s - loss: 2.5994 -
    mean_absolute_error: 1.1413 - val_loss
    : 15.3936 - val_mean_absolute_error: 2.
4186
578 Epoch 246/1000
579   - 0s - loss: 2.4311 -
    mean_absolute_error: 1.0650 - val_loss
    : 14.8946 - val_mean_absolute_error: 2.
4055
580 Epoch 247/1000
581   - 0s - loss: 2.5681 -
    mean_absolute_error: 1.0986 - val_loss
    : 14.8327 - val_mean_absolute_error: 2.
4875
582 Epoch 248/1000
583   - 0s - loss: 2.4337 -
    mean_absolute_error: 1.0475 - val_loss
    : 15.8474 - val_mean_absolute_error: 2.
3294
584 Epoch 249/1000
585   - 0s - loss: 2.3942 -
    mean_absolute_error: 1.0954 - val_loss
```

```
585 : 15.0135 - val_mean_absolute_error: 2.
7257
586 Epoch 250/1000
587 - 0s - loss: 2.4322 -
mean_absolute_error: 1.1058 - val_loss
: 14.9843 - val_mean_absolute_error: 2.
3462
588
589 Epoch 00250: val_mean_absolute_error
improved from 2.35075 to 2.34617,
saving model to ./model/model_Epoch0250
-val_mean_absolute_error2.35.h5
590 Epoch 251/1000
591 - 0s - loss: 2.4432 -
mean_absolute_error: 1.0795 - val_loss
: 15.1566 - val_mean_absolute_error: 2.
3375
592 Epoch 252/1000
593 - 0s - loss: 2.4293 -
mean_absolute_error: 1.1008 - val_loss
: 15.0765 - val_mean_absolute_error: 2.
6591
594 Epoch 253/1000
595 - 0s - loss: 2.6142 -
```

```
595 mean_absolute_error: 1.1886 - val_loss
    : 14.4562 - val_mean_absolute_error: 2.
5125
596 Epoch 254/1000
597   - 0s - loss: 2.4505 -
    mean_absolute_error: 1.0981 - val_loss
    : 15.0648 - val_mean_absolute_error: 2.
3752
598 Epoch 255/1000
599   - 0s - loss: 2.5812 -
    mean_absolute_error: 1.1018 - val_loss
    : 15.1408 - val_mean_absolute_error: 2.
3436
600 Epoch 256/1000
601   - 0s - loss: 2.2909 -
    mean_absolute_error: 1.0618 - val_loss
    : 15.7782 - val_mean_absolute_error: 2.
4280
602 Epoch 257/1000
603   - 0s - loss: 2.5267 -
    mean_absolute_error: 1.1237 - val_loss
    : 15.7746 - val_mean_absolute_error: 2.
3268
604 Epoch 258/1000
```

```
605 - 0s - loss: 2.3111 -  
mean_absolute_error: 1.0357 - val_loss  
: 15.1759 - val_mean_absolute_error: 2.  
5407  
606 Epoch 259/1000  
607 - 0s - loss: 2.4841 -  
mean_absolute_error: 1.0939 - val_loss  
: 15.6691 - val_mean_absolute_error: 2.  
5940  
608 Epoch 260/1000  
609 - 0s - loss: 2.5196 -  
mean_absolute_error: 1.0986 - val_loss  
: 14.4459 - val_mean_absolute_error: 2.  
5220  
610  
611 Epoch 00260: val_mean_absolute_error  
did not improve from 2.34617  
612 Epoch 261/1000  
613 - 0s - loss: 2.3573 -  
mean_absolute_error: 1.0628 - val_loss  
: 15.0700 - val_mean_absolute_error: 2.  
7376  
614 Epoch 262/1000  
615 - 0s - loss: 2.3871 -
```

```
615 mean_absolute_error: 1.1054 - val_loss
    : 14.6402 - val_mean_absolute_error: 2.
3826
616 Epoch 263/1000
617   - 0s - loss: 2.3120 -
    mean_absolute_error: 1.0613 - val_loss
    : 15.3541 - val_mean_absolute_error: 2.
3853
618 Epoch 264/1000
619   - 0s - loss: 2.2637 -
    mean_absolute_error: 1.0607 - val_loss
    : 14.9011 - val_mean_absolute_error: 2.
3870
620 Epoch 265/1000
621   - 0s - loss: 2.2324 -
    mean_absolute_error: 1.0240 - val_loss
    : 14.7012 - val_mean_absolute_error: 2.
3817
622 Epoch 266/1000
623   - 0s - loss: 2.3545 -
    mean_absolute_error: 1.0780 - val_loss
    : 14.7826 - val_mean_absolute_error: 2.
4492
624 Epoch 267/1000
```

```
625 - 0s - loss: 2.4608 -  
mean_absolute_error: 1.0838 - val_loss  
: 14.9630 - val_mean_absolute_error: 2.  
5956
```

```
626 Epoch 268/1000
```

```
627 - 0s - loss: 2.2883 -  
mean_absolute_error: 1.0278 - val_loss  
: 14.7649 - val_mean_absolute_error: 2.  
5545
```

```
628 Epoch 269/1000
```

```
629 - 0s - loss: 2.1454 -  
mean_absolute_error: 1.0071 - val_loss  
: 14.0932 - val_mean_absolute_error: 2.  
5414
```

```
630 Epoch 270/1000
```

```
631 - 0s - loss: 2.4364 -  
mean_absolute_error: 1.0835 - val_loss  
: 14.7341 - val_mean_absolute_error: 2.  
2787
```

```
632
```

```
633 Epoch 00270: val_mean_absolute_error  
improved from 2.34617 to 2.27868,  
saving model to ./model/model_Epoch0270  
-val_mean_absolute_error2.28.h5
```



```
634 Epoch 271/1000
635   - 0s - loss: 2.3224 -
      mean_absolute_error: 1.0494 - val_loss
      : 14.4092 - val_mean_absolute_error: 2.
      3278
636 Epoch 272/1000
637   - 0s - loss: 2.1714 -
      mean_absolute_error: 1.0398 - val_loss
      : 14.8482 - val_mean_absolute_error: 2.
      6968
638 Epoch 273/1000
639   - 0s - loss: 2.4665 -
      mean_absolute_error: 1.0828 - val_loss
      : 14.4017 - val_mean_absolute_error: 2.
      4534
640 Epoch 274/1000
641   - 0s - loss: 2.1426 -
      mean_absolute_error: 0.9815 - val_loss
      : 15.1314 - val_mean_absolute_error: 2.
      5856
642 Epoch 275/1000
643   - 0s - loss: 2.3871 -
      mean_absolute_error: 1.0624 - val_loss
      : 15.1847 - val_mean_absolute_error: 2.
```

```
643 4384
644 Epoch 276/1000
645   - 0s - loss: 2.2599 -
      mean_absolute_error: 1.0364 - val_loss
      : 14.0144 - val_mean_absolute_error: 2.
5249
646 Epoch 277/1000
647   - 0s - loss: 2.2694 -
      mean_absolute_error: 1.0616 - val_loss
      : 14.8226 - val_mean_absolute_error: 2.
2997
648 Epoch 278/1000
649   - 0s - loss: 2.1846 -
      mean_absolute_error: 1.0295 - val_loss
      : 14.9187 - val_mean_absolute_error: 2.
3189
650 Epoch 279/1000
651   - 0s - loss: 2.2912 -
      mean_absolute_error: 1.0752 - val_loss
      : 14.7807 - val_mean_absolute_error: 2.
4501
652 Epoch 280/1000
653   - 0s - loss: 2.2902 -
      mean_absolute_error: 1.0519 - val_loss
```

```
653 : 15.8950 - val_mean_absolute_error: 2.  
3306
```

```
654
```

```
655 Epoch 00280: val_mean_absolute_error  
did not improve from 2.27868
```

```
656 Epoch 281/1000
```

```
657 - 0s - loss: 2.2105 -  
mean_absolute_error: 1.0388 - val_loss  
: 17.8994 - val_mean_absolute_error: 2.  
4921
```

```
658 Epoch 282/1000
```

```
659 - 0s - loss: 2.0899 -  
mean_absolute_error: 1.0078 - val_loss  
: 17.7121 - val_mean_absolute_error: 2.  
7148
```

```
660 Epoch 283/1000
```

```
661 - 0s - loss: 2.4057 -  
mean_absolute_error: 1.0730 - val_loss  
: 15.2407 - val_mean_absolute_error: 2.  
6461
```

```
662 Epoch 284/1000
```

```
663 - 0s - loss: 2.1966 -  
mean_absolute_error: 1.0299 - val_loss  
: 15.8173 - val_mean_absolute_error: 2.
```

```
663 3053
664 Epoch 285/1000
665   - 0s - loss: 2.2464 -
      mean_absolute_error: 1.0205 - val_loss
      : 15.0818 - val_mean_absolute_error: 2.
4386
666 Epoch 286/1000
667   - 0s - loss: 2.1356 -
      mean_absolute_error: 1.0381 - val_loss
      : 16.1439 - val_mean_absolute_error: 2.
4709
668 Epoch 287/1000
669   - 0s - loss: 2.2523 -
      mean_absolute_error: 1.0469 - val_loss
      : 17.3775 - val_mean_absolute_error: 2.
6685
670 Epoch 288/1000
671   - 0s - loss: 2.3984 -
      mean_absolute_error: 1.0609 - val_loss
      : 17.4644 - val_mean_absolute_error: 2.
4816
672 Epoch 289/1000
673   - 0s - loss: 2.2076 -
      mean_absolute_error: 1.0211 - val_loss
```

```
673 : 14.8777 - val_mean_absolute_error: 2.
4257
674 Epoch 290/1000
675 - 0s - loss: 2.1017 -
mean_absolute_error: 1.0165 - val_loss
: 15.0906 - val_mean_absolute_error: 2.
3026
676
677 Epoch 00290: val_mean_absolute_error
did not improve from 2.27868
678 Epoch 291/1000
679 - 0s - loss: 2.1869 -
mean_absolute_error: 1.0559 - val_loss
: 14.0647 - val_mean_absolute_error: 2.
4907
680 Epoch 292/1000
681 - 0s - loss: 2.0737 -
mean_absolute_error: 0.9896 - val_loss
: 15.5242 - val_mean_absolute_error: 2.
2783
682 Epoch 293/1000
683 - 0s - loss: 2.3725 -
mean_absolute_error: 1.0535 - val_loss
: 15.0866 - val_mean_absolute_error: 2.
```

```
683 2942
684 Epoch 294/1000
685   - 0s - loss: 2.0685 -
      mean_absolute_error: 0.9988 - val_loss
      : 14.8762 - val_mean_absolute_error: 2.
3743
686 Epoch 295/1000
687   - 0s - loss: 2.2338 -
      mean_absolute_error: 1.0566 - val_loss
      : 15.0451 - val_mean_absolute_error: 2.
7630
688 Epoch 296/1000
689   - 0s - loss: 2.4116 -
      mean_absolute_error: 1.0665 - val_loss
      : 15.9035 - val_mean_absolute_error: 2.
3368
690 Epoch 297/1000
691   - 0s - loss: 2.0992 -
      mean_absolute_error: 0.9957 - val_loss
      : 14.5505 - val_mean_absolute_error: 2.
3696
692 Epoch 298/1000
693   - 0s - loss: 2.0936 -
      mean_absolute_error: 1.0134 - val_loss
```

```
693 : 15.2790 - val_mean_absolute_error: 2.
    2898
694 Epoch 299/1000
695   - 0s - loss: 2.1483 -
    mean_absolute_error: 1.0230 - val_loss
    : 14.8111 - val_mean_absolute_error: 2.
    4009
696 Epoch 300/1000
697   - 0s - loss: 2.1265 -
    mean_absolute_error: 1.0240 - val_loss
    : 14.7192 - val_mean_absolute_error: 2.
    2983
698
699 Epoch 00300: val_mean_absolute_error
    did not improve from 2.27868
700 Epoch 301/1000
701   - 0s - loss: 2.2190 -
    mean_absolute_error: 1.0188 - val_loss
    : 14.4182 - val_mean_absolute_error: 2.
    3559
702 Epoch 302/1000
703   - 0s - loss: 2.1514 -
    mean_absolute_error: 0.9979 - val_loss
    : 14.3620 - val_mean_absolute_error: 2.
```

```
703 4411
704 Epoch 303/1000
705   - 0s - loss: 2.0215 -
      mean_absolute_error: 1.0100 - val_loss
      : 14.2522 - val_mean_absolute_error: 2.
      4251
706 Epoch 304/1000
707   - 0s - loss: 1.9900 -
      mean_absolute_error: 0.9877 - val_loss
      : 14.7882 - val_mean_absolute_error: 2.
      3899
708 Epoch 305/1000
709   - 0s - loss: 2.0423 -
      mean_absolute_error: 1.0051 - val_loss
      : 14.9730 - val_mean_absolute_error: 2.
      5850
710 Epoch 306/1000
711   - 0s - loss: 2.2166 -
      mean_absolute_error: 1.0324 - val_loss
      : 14.2201 - val_mean_absolute_error: 2.
      4896
712 Epoch 307/1000
713   - 0s - loss: 2.0770 -
      mean_absolute_error: 0.9913 - val_loss
```



```
713 : 14.1804 - val_mean_absolute_error: 2.
3132
714 Epoch 308/1000
715 - 0s - loss: 1.9095 -
mean_absolute_error: 0.9435 - val_loss
: 15.3982 - val_mean_absolute_error: 2.
5432
716 Epoch 309/1000
717 - 0s - loss: 2.1437 -
mean_absolute_error: 1.0149 - val_loss
: 15.0632 - val_mean_absolute_error: 2.
3842
718 Epoch 310/1000
719 - 0s - loss: 2.0585 -
mean_absolute_error: 0.9797 - val_loss
: 17.7830 - val_mean_absolute_error: 2.
5849
720
721 Epoch 00310: val_mean_absolute_error
did not improve from 2.27868
722 Epoch 311/1000
723 - 0s - loss: 2.1620 -
mean_absolute_error: 1.0164 - val_loss
: 18.3972 - val_mean_absolute_error: 2.
```

```
723 5894
724 Epoch 312/1000
725 - 0s - loss: 1.9822 -
    mean_absolute_error: 1.0062 - val_loss
    : 14.3500 - val_mean_absolute_error: 2.
4273
726 Epoch 313/1000
727 - 0s - loss: 1.9594 -
    mean_absolute_error: 0.9621 - val_loss
    : 14.4013 - val_mean_absolute_error: 2.
3844
728 Epoch 314/1000
729 - 0s - loss: 2.0182 -
    mean_absolute_error: 0.9850 - val_loss
    : 15.0993 - val_mean_absolute_error: 2.
3840
730 Epoch 315/1000
731 - 0s - loss: 1.9406 -
    mean_absolute_error: 0.9659 - val_loss
    : 14.7852 - val_mean_absolute_error: 2.
3325
732 Epoch 316/1000
733 - 0s - loss: 2.0906 -
    mean_absolute_error: 1.0039 - val_loss
```

```
733 : 15.2359 - val_mean_absolute_error: 2.
3019
734 Epoch 317/1000
735 - 0s - loss: 1.9706 -
mean_absolute_error: 1.0049 - val_loss
: 17.0828 - val_mean_absolute_error: 2.
6797
736 Epoch 318/1000
737 - 0s - loss: 2.0393 -
mean_absolute_error: 0.9737 - val_loss
: 15.0948 - val_mean_absolute_error: 2.
6181
738 Epoch 319/1000
739 - 0s - loss: 1.9211 -
mean_absolute_error: 0.9437 - val_loss
: 15.2936 - val_mean_absolute_error: 2.
3663
740 Epoch 320/1000
741 - 0s - loss: 2.0960 -
mean_absolute_error: 1.0314 - val_loss
: 14.3545 - val_mean_absolute_error: 2.
2714
742
743 Epoch 00320: val_mean_absolute_error
```

```
743 improved from 2.27868 to 2.27144,
    saving model to ./model/model_Epoch0320
    -val_mean_absolute_error2.27.h5
744 Epoch 321/1000
745   - 0s - loss: 1.9044 -
    mean_absolute_error: 0.9583 - val_loss
    : 16.3304 - val_mean_absolute_error: 2.
    4341
746 Epoch 322/1000
747   - 0s - loss: 2.1304 -
    mean_absolute_error: 1.0233 - val_loss
    : 14.6589 - val_mean_absolute_error: 2.
    5445
748 Epoch 323/1000
749   - 0s - loss: 1.9075 -
    mean_absolute_error: 0.9564 - val_loss
    : 15.1806 - val_mean_absolute_error: 2.
    2832
750 Epoch 324/1000
751   - 0s - loss: 2.0301 -
    mean_absolute_error: 0.9918 - val_loss
    : 13.9229 - val_mean_absolute_error: 2.
    5236
752 Epoch 325/1000
```

```
753 - 0s - loss: 1.9731 -  
mean_absolute_error: 0.9991 - val_loss  
: 14.6705 - val_mean_absolute_error: 2.  
3190  
754 Epoch 326/1000  
755 - 0s - loss: 1.9225 -  
mean_absolute_error: 0.9350 - val_loss  
: 14.5299 - val_mean_absolute_error: 2.  
4179  
756 Epoch 327/1000  
757 - 0s - loss: 1.9881 -  
mean_absolute_error: 0.9949 - val_loss  
: 14.5081 - val_mean_absolute_error: 2.  
2974  
758 Epoch 328/1000  
759 - 0s - loss: 1.7965 -  
mean_absolute_error: 0.9291 - val_loss  
: 13.3162 - val_mean_absolute_error: 2.  
3665  
760 Epoch 329/1000  
761 - 0s - loss: 1.9571 -  
mean_absolute_error: 0.9876 - val_loss  
: 14.3532 - val_mean_absolute_error: 2.  
4270
```

```
762 Epoch 330/1000
763   - 0s - loss: 1.8319 -
    mean_absolute_error: 0.9335 - val_loss
    : 21.1054 - val_mean_absolute_error: 2.
    9773
```

```
764
765 Epoch 00330: val_mean_absolute_error
    did not improve from 2.27144
```

```
766 Epoch 331/1000
767   - 0s - loss: 2.1491 -
    mean_absolute_error: 1.0649 - val_loss
    : 14.2655 - val_mean_absolute_error: 2.
    4132
```

```
768 Epoch 332/1000
769   - 0s - loss: 1.8056 -
    mean_absolute_error: 0.9295 - val_loss
    : 15.8299 - val_mean_absolute_error: 2.
    3233
```

```
770 Epoch 333/1000
771   - 0s - loss: 1.8669 -
    mean_absolute_error: 0.9938 - val_loss
    : 14.6616 - val_mean_absolute_error: 2.
    3220
```

```
772 Epoch 334/1000
```

```
773 - 0s - loss: 1.9868 -  
mean_absolute_error: 1.0057 - val_loss  
: 15.2658 - val_mean_absolute_error: 2.  
4762  
774 Epoch 335/1000  
775 - 0s - loss: 2.0014 -  
mean_absolute_error: 0.9835 - val_loss  
: 14.0339 - val_mean_absolute_error: 2.  
5222  
776 Epoch 336/1000  
777 - 0s - loss: 1.8816 -  
mean_absolute_error: 0.9597 - val_loss  
: 14.8914 - val_mean_absolute_error: 2.  
2979  
778 Epoch 337/1000  
779 - 0s - loss: 1.8513 -  
mean_absolute_error: 0.9512 - val_loss  
: 13.9345 - val_mean_absolute_error: 2.  
5279  
780 Epoch 338/1000  
781 - 0s - loss: 1.8177 -  
mean_absolute_error: 0.9484 - val_loss  
: 14.7740 - val_mean_absolute_error: 2.  
3942
```

```
782 Epoch 339/1000
783   - 0s - loss: 1.8739 -
      mean_absolute_error: 0.9610 - val_loss
      : 14.3029 - val_mean_absolute_error: 2.
      4728
784 Epoch 340/1000
785   - 0s - loss: 1.9201 -
      mean_absolute_error: 0.9598 - val_loss
      : 15.3677 - val_mean_absolute_error: 2.
      3744
786
787 Epoch 00340: val_mean_absolute_error
      did not improve from 2.27144
788 Epoch 341/1000
789   - 0s - loss: 1.8761 -
      mean_absolute_error: 0.9605 - val_loss
      : 14.2186 - val_mean_absolute_error: 2.
      3111
790 Epoch 342/1000
791   - 0s - loss: 1.9512 -
      mean_absolute_error: 0.9631 - val_loss
      : 16.1321 - val_mean_absolute_error: 2.
      3997
792 Epoch 343/1000
```



```
793 - 0s - loss: 1.7205 -  
mean_absolute_error: 0.9050 - val_loss  
: 14.8215 - val_mean_absolute_error: 2.  
5433  
794 Epoch 344/1000  
795 - 0s - loss: 1.8581 -  
mean_absolute_error: 0.9509 - val_loss  
: 14.5676 - val_mean_absolute_error: 2.  
3571  
796 Epoch 345/1000  
797 - 0s - loss: 1.8681 -  
mean_absolute_error: 0.9185 - val_loss  
: 14.2676 - val_mean_absolute_error: 2.  
2742  
798 Epoch 346/1000  
799 - 0s - loss: 1.8569 -  
mean_absolute_error: 0.9499 - val_loss  
: 16.2702 - val_mean_absolute_error: 2.  
5774  
800 Epoch 347/1000  
801 - 0s - loss: 1.8741 -  
mean_absolute_error: 0.9380 - val_loss  
: 16.2111 - val_mean_absolute_error: 2.  
7778
```

```
802 Epoch 348/1000
803   - 0s - loss: 1.9640 -
      mean_absolute_error: 0.9973 - val_loss
      : 15.2091 - val_mean_absolute_error: 2.
      3715
804 Epoch 349/1000
805   - 0s - loss: 1.8096 -
      mean_absolute_error: 0.9623 - val_loss
      : 15.0984 - val_mean_absolute_error: 2.
      3445
806 Epoch 350/1000
807   - 0s - loss: 1.8214 -
      mean_absolute_error: 0.9237 - val_loss
      : 14.6338 - val_mean_absolute_error: 2.
      5597
808
809 Epoch 00350: val_mean_absolute_error
      did not improve from 2.27144
810 Epoch 351/1000
811   - 0s - loss: 1.8210 -
      mean_absolute_error: 0.9425 - val_loss
      : 17.4362 - val_mean_absolute_error: 2.
      7120
812 Epoch 352/1000
```

```
813 - 0s - loss: 1.7342 -  
mean_absolute_error: 0.9100 - val_loss  
: 15.1502 - val_mean_absolute_error: 2.  
3620  
814 Epoch 353/1000  
815 - 0s - loss: 1.9354 -  
mean_absolute_error: 0.9664 - val_loss  
: 15.0887 - val_mean_absolute_error: 2.  
5070  
816 Epoch 354/1000  
817 - 0s - loss: 1.7956 -  
mean_absolute_error: 0.9404 - val_loss  
: 14.3860 - val_mean_absolute_error: 2.  
3516  
818 Epoch 355/1000  
819 - 0s - loss: 1.8224 -  
mean_absolute_error: 0.9497 - val_loss  
: 14.7000 - val_mean_absolute_error: 2.  
3006  
820 Epoch 356/1000  
821 - 0s - loss: 1.8560 -  
mean_absolute_error: 0.9431 - val_loss  
: 14.7023 - val_mean_absolute_error: 2.  
5029
```

```
822 Epoch 357/1000
823   - 0s - loss: 1.7473 -
      mean_absolute_error: 0.9165 - val_loss
      : 14.6018 - val_mean_absolute_error: 2.
      3737
824 Epoch 358/1000
825   - 0s - loss: 1.7857 -
      mean_absolute_error: 0.9338 - val_loss
      : 14.8053 - val_mean_absolute_error: 2.
      5303
826 Epoch 359/1000
827   - 0s - loss: 1.7929 -
      mean_absolute_error: 0.9273 - val_loss
      : 14.1049 - val_mean_absolute_error: 2.
      6251
828 Epoch 360/1000
829   - 0s - loss: 1.7815 -
      mean_absolute_error: 0.9280 - val_loss
      : 14.4603 - val_mean_absolute_error: 2.
      5000
830
831 Epoch 00360: val_mean_absolute_error
      did not improve from 2.27144
832 Epoch 361/1000
```

```
833 - 0s - loss: 1.7373 -  
mean_absolute_error: 0.9016 - val_loss  
: 18.0599 - val_mean_absolute_error: 2.  
5906  
834 Epoch 362/1000  
835 - 0s - loss: 1.7415 -  
mean_absolute_error: 0.9031 - val_loss  
: 14.2964 - val_mean_absolute_error: 2.  
5967  
836 Epoch 363/1000  
837 - 0s - loss: 1.6634 -  
mean_absolute_error: 0.9207 - val_loss  
: 17.7202 - val_mean_absolute_error: 2.  
6326  
838 Epoch 364/1000  
839 - 0s - loss: 1.7729 -  
mean_absolute_error: 0.9331 - val_loss  
: 13.7976 - val_mean_absolute_error: 2.  
2670  
840 Epoch 365/1000  
841 - 0s - loss: 1.8562 -  
mean_absolute_error: 0.9745 - val_loss  
: 14.5467 - val_mean_absolute_error: 2.  
3383
```

```
842 Epoch 366/1000
843   - 0s - loss: 1.8979 -
      mean_absolute_error: 0.9670 - val_loss
      : 13.8036 - val_mean_absolute_error: 2.
      5750
844 Epoch 367/1000
845   - 0s - loss: 1.8435 -
      mean_absolute_error: 0.9378 - val_loss
      : 14.6135 - val_mean_absolute_error: 2.
      4277
846 Epoch 368/1000
847   - 0s - loss: 1.6278 -
      mean_absolute_error: 0.8752 - val_loss
      : 16.4540 - val_mean_absolute_error: 2.
      7027
848 Epoch 369/1000
849   - 0s - loss: 1.7783 -
      mean_absolute_error: 0.9456 - val_loss
      : 14.2592 - val_mean_absolute_error: 2.
      4673
850 Epoch 370/1000
851   - 0s - loss: 1.7151 -
      mean_absolute_error: 0.9234 - val_loss
      : 17.0672 - val_mean_absolute_error: 2.
```

851 4163

852

853 Epoch 00370: val\_mean\_absolute\_error  
did not improve from 2.27144

854 Epoch 371/1000

855 - 0s - loss: 1.7692 -  
mean\_absolute\_error: 0.9461 - val\_loss  
: 15.7099 - val\_mean\_absolute\_error: 2.  
3627

856 Epoch 372/1000

857 - 0s - loss: 1.6933 -  
mean\_absolute\_error: 0.9023 - val\_loss  
: 15.2885 - val\_mean\_absolute\_error: 2.  
2896

858 Epoch 373/1000

859 - 0s - loss: 1.7778 -  
mean\_absolute\_error: 0.9383 - val\_loss  
: 16.2586 - val\_mean\_absolute\_error: 2.  
7209

860 Epoch 374/1000

861 - 0s - loss: 1.6023 -  
mean\_absolute\_error: 0.8796 - val\_loss  
: 15.8011 - val\_mean\_absolute\_error: 2.  
5128

```
862 Epoch 375/1000
863   - 0s - loss: 1.8604 -
      mean_absolute_error: 0.9409 - val_loss
      : 14.4901 - val_mean_absolute_error: 2.
      4034
864 Epoch 376/1000
865   - 0s - loss: 1.6783 -
      mean_absolute_error: 0.8907 - val_loss
      : 13.9359 - val_mean_absolute_error: 2.
      5030
866 Epoch 377/1000
867   - 0s - loss: 1.6818 -
      mean_absolute_error: 0.8767 - val_loss
      : 13.7572 - val_mean_absolute_error: 2.
      3566
868 Epoch 378/1000
869   - 0s - loss: 1.6994 -
      mean_absolute_error: 0.9062 - val_loss
      : 15.8079 - val_mean_absolute_error: 2.
      4070
870 Epoch 379/1000
871   - 0s - loss: 1.6933 -
      mean_absolute_error: 0.9031 - val_loss
      : 14.7378 - val_mean_absolute_error: 2.
```



```
871 3622
872 Epoch 380/1000
873   - 0s - loss: 1.6416 -
      mean_absolute_error: 0.8921 - val_loss
      : 14.9661 - val_mean_absolute_error: 2.
      2872
```

```
874
875 Epoch 00380: val_mean_absolute_error
      did not improve from 2.27144
876 Epoch 381/1000
877   - 0s - loss: 1.6134 -
      mean_absolute_error: 0.9259 - val_loss
      : 16.5761 - val_mean_absolute_error: 2.
      3802
```

```
878 Epoch 382/1000
879   - 0s - loss: 1.6450 -
      mean_absolute_error: 0.9083 - val_loss
      : 17.4253 - val_mean_absolute_error: 2.
      6104
```

```
880 Epoch 383/1000
881   - 0s - loss: 1.7753 -
      mean_absolute_error: 0.9175 - val_loss
      : 14.6023 - val_mean_absolute_error: 2.
      2901
```

```
882 Epoch 384/1000
883   - 0s - loss: 1.7055 -
      mean_absolute_error: 0.9131 - val_loss
      : 15.1426 - val_mean_absolute_error: 2.
      3702
884 Epoch 385/1000
885   - 0s - loss: 1.7887 -
      mean_absolute_error: 0.9227 - val_loss
      : 14.4321 - val_mean_absolute_error: 2.
      4473
886 Epoch 386/1000
887   - 0s - loss: 1.6610 -
      mean_absolute_error: 0.8954 - val_loss
      : 15.1463 - val_mean_absolute_error: 2.
      3196
888 Epoch 387/1000
889   - 0s - loss: 1.7963 -
      mean_absolute_error: 0.9470 - val_loss
      : 15.1859 - val_mean_absolute_error: 2.
      4367
890 Epoch 388/1000
891   - 0s - loss: 1.6807 -
      mean_absolute_error: 0.9047 - val_loss
      : 15.9110 - val_mean_absolute_error: 2.
```

```
891 4242
892 Epoch 389/1000
893   - 0s - loss: 1.6043 -
      mean_absolute_error: 0.8894 - val_loss
      : 14.4427 - val_mean_absolute_error: 2.
      4179
894 Epoch 390/1000
895   - 0s - loss: 1.5820 -
      mean_absolute_error: 0.8699 - val_loss
      : 14.6783 - val_mean_absolute_error: 2.
      3482
896
897 Epoch 00390: val_mean_absolute_error
      did not improve from 2.27144
898 Epoch 391/1000
899   - 0s - loss: 1.5256 -
      mean_absolute_error: 0.8605 - val_loss
      : 14.9008 - val_mean_absolute_error: 2.
      5439
900 Epoch 392/1000
901   - 0s - loss: 1.7398 -
      mean_absolute_error: 0.9394 - val_loss
      : 14.9994 - val_mean_absolute_error: 2.
      2908
```

```
902 Epoch 393/1000
903   - 0s - loss: 1.5851 -
    mean_absolute_error: 0.8801 - val_loss
    : 13.7876 - val_mean_absolute_error: 2.
    4453
904 Epoch 394/1000
905   - 0s - loss: 1.5952 -
    mean_absolute_error: 0.8765 - val_loss
    : 17.4869 - val_mean_absolute_error: 2.
    8696
906 Epoch 395/1000
907   - 0s - loss: 1.8694 -
    mean_absolute_error: 0.9696 - val_loss
    : 14.7725 - val_mean_absolute_error: 2.
    4959
908 Epoch 396/1000
909   - 0s - loss: 1.6441 -
    mean_absolute_error: 0.8979 - val_loss
    : 14.5916 - val_mean_absolute_error: 2.
    3750
910 Epoch 397/1000
911   - 0s - loss: 1.5268 -
    mean_absolute_error: 0.8862 - val_loss
    : 14.0668 - val_mean_absolute_error: 2.
```

```
911 5606
912 Epoch 398/1000
913   - 0s - loss: 1.5559 -
      mean_absolute_error: 0.8838 - val_loss
      : 15.1499 - val_mean_absolute_error: 2.
      6334
914 Epoch 399/1000
915   - 0s - loss: 1.4574 -
      mean_absolute_error: 0.8563 - val_loss
      : 14.7874 - val_mean_absolute_error: 2.
      3924
916 Epoch 400/1000
917   - 0s - loss: 1.6247 -
      mean_absolute_error: 0.8791 - val_loss
      : 14.1635 - val_mean_absolute_error: 2.
      3754
918
919 Epoch 00400: val_mean_absolute_error
      did not improve from 2.27144
920 Epoch 401/1000
921   - 0s - loss: 1.5301 -
      mean_absolute_error: 0.8525 - val_loss
      : 15.7665 - val_mean_absolute_error: 2.
      3800
```

```
922 Epoch 402/1000
923   - 0s - loss: 1.5806 -
    mean_absolute_error: 0.8835 - val_loss
    : 14.7798 - val_mean_absolute_error: 2.
    4916
924 Epoch 403/1000
925   - 0s - loss: 1.5681 -
    mean_absolute_error: 0.8799 - val_loss
    : 16.2282 - val_mean_absolute_error: 2.
    6868
926 Epoch 404/1000
927   - 0s - loss: 1.6671 -
    mean_absolute_error: 0.8771 - val_loss
    : 15.5469 - val_mean_absolute_error: 2.
    6951
928 Epoch 405/1000
929   - 0s - loss: 1.6460 -
    mean_absolute_error: 0.9056 - val_loss
    : 14.4065 - val_mean_absolute_error: 2.
    5594
930 Epoch 406/1000
931   - 0s - loss: 1.6400 -
    mean_absolute_error: 0.9105 - val_loss
    : 14.7435 - val_mean_absolute_error: 2.
```

```
931 4422
932 Epoch 407/1000
933   - 0s - loss: 1.5604 -
    mean_absolute_error: 0.8955 - val_loss
    : 14.8783 - val_mean_absolute_error: 2.
    3511
934 Epoch 408/1000
935   - 0s - loss: 1.4066 -
    mean_absolute_error: 0.8364 - val_loss
    : 14.4007 - val_mean_absolute_error: 2.
    6051
936 Epoch 409/1000
937   - 0s - loss: 1.6150 -
    mean_absolute_error: 0.9263 - val_loss
    : 13.9988 - val_mean_absolute_error: 2.
    5833
938 Epoch 410/1000
939   - 0s - loss: 1.5663 -
    mean_absolute_error: 0.8712 - val_loss
    : 15.3370 - val_mean_absolute_error: 2.
    4575
940
941 Epoch 00410: val_mean_absolute_error
    did not improve from 2.27144
```

```
942 Epoch 411/1000
943   - 0s - loss: 1.5496 -
    mean_absolute_error: 0.8518 - val_loss
    : 16.2171 - val_mean_absolute_error: 2.
    4773
944 Epoch 412/1000
945   - 0s - loss: 1.5812 -
    mean_absolute_error: 0.9066 - val_loss
    : 17.2007 - val_mean_absolute_error: 2.
    5140
946 Epoch 413/1000
947   - 0s - loss: 1.5126 -
    mean_absolute_error: 0.8596 - val_loss
    : 17.6244 - val_mean_absolute_error: 2.
    6828
948 Epoch 414/1000
949   - 0s - loss: 1.5289 -
    mean_absolute_error: 0.8514 - val_loss
    : 15.7537 - val_mean_absolute_error: 2.
    6315
950 Epoch 415/1000
951   - 0s - loss: 1.5697 -
    mean_absolute_error: 0.8854 - val_loss
    : 14.6440 - val_mean_absolute_error: 2.
```



```
951 3709
952 Epoch 416/1000
953   - 0s - loss: 1.5743 -
    mean_absolute_error: 0.8640 - val_loss
    : 17.0925 - val_mean_absolute_error: 2.
    4747
954 Epoch 417/1000
955   - 0s - loss: 1.4604 -
    mean_absolute_error: 0.8226 - val_loss
    : 16.1083 - val_mean_absolute_error: 2.
    4355
956 Epoch 418/1000
957   - 0s - loss: 1.5086 -
    mean_absolute_error: 0.8583 - val_loss
    : 15.2075 - val_mean_absolute_error: 2.
    8353
958 Epoch 419/1000
959   - 0s - loss: 1.6594 -
    mean_absolute_error: 0.8523 - val_loss
    : 14.7672 - val_mean_absolute_error: 2.
    4105
960 Epoch 420/1000
961   - 0s - loss: 1.5441 -
    mean_absolute_error: 0.8795 - val_loss
```

```
961 : 17.0386 - val_mean_absolute_error: 2.  
5419
```

```
962
```

```
963 Epoch 00420: val_mean_absolute_error  
did not improve from 2.27144
```

```
964 Epoch 421/1000
```

```
965 - 0s - loss: 1.6169 -  
mean_absolute_error: 0.9126 - val_loss  
: 15.2125 - val_mean_absolute_error: 2.  
3352
```

```
966 Epoch 422/1000
```

```
967 - 0s - loss: 1.4912 -  
mean_absolute_error: 0.8169 - val_loss  
: 17.8975 - val_mean_absolute_error: 2.  
5569
```

```
968 Epoch 423/1000
```

```
969 - 0s - loss: 1.4809 -  
mean_absolute_error: 0.8633 - val_loss  
: 14.6443 - val_mean_absolute_error: 2.  
3562
```

```
970 Epoch 424/1000
```

```
971 - 0s - loss: 1.4644 -  
mean_absolute_error: 0.8596 - val_loss  
: 15.0086 - val_mean_absolute_error: 2.
```

```
971 3641
972 Epoch 425/1000
973   - 0s - loss: 1.4687 -
    mean_absolute_error: 0.8473 - val_loss
    : 15.6129 - val_mean_absolute_error: 2.
    4222
974 Epoch 426/1000
975   - 0s - loss: 1.4116 -
    mean_absolute_error: 0.8391 - val_loss
    : 17.2641 - val_mean_absolute_error: 2.
    6848
976 Epoch 427/1000
977   - 0s - loss: 1.5447 -
    mean_absolute_error: 0.8691 - val_loss
    : 16.6420 - val_mean_absolute_error: 2.
    5707
978 Epoch 428/1000
979   - 0s - loss: 1.4498 -
    mean_absolute_error: 0.8801 - val_loss
    : 15.8532 - val_mean_absolute_error: 2.
    5848
980 Epoch 429/1000
981   - 0s - loss: 1.5446 -
    mean_absolute_error: 0.8538 - val_loss
```

```
981 : 18.8760 - val_mean_absolute_error: 2
    .7343
982 Epoch 430/1000
983 - 0s - loss: 1.6697 -
    mean_absolute_error: 0.8733 - val_loss
    : 15.2405 - val_mean_absolute_error: 2
    .3250
984
985 Epoch 00430: val_mean_absolute_error
    did not improve from 2.27144
986 Epoch 431/1000
987 - 0s - loss: 1.3044 -
    mean_absolute_error: 0.7723 - val_loss
    : 15.1391 - val_mean_absolute_error: 2
    .3493
988 Epoch 432/1000
989 - 0s - loss: 1.3818 -
    mean_absolute_error: 0.8251 - val_loss
    : 15.8354 - val_mean_absolute_error: 2
    .4740
990 Epoch 433/1000
991 - 0s - loss: 1.6315 -
    mean_absolute_error: 0.8753 - val_loss
    : 15.0172 - val_mean_absolute_error: 2
```

```
991 .5300
992 Epoch 434/1000
993   - 0s - loss: 1.4314 -
      mean_absolute_error: 0.8294 - val_loss
      : 15.8275 - val_mean_absolute_error: 2
      .5561
994 Epoch 435/1000
995   - 0s - loss: 1.4581 -
      mean_absolute_error: 0.8466 - val_loss
      : 19.9660 - val_mean_absolute_error: 2
      .7807
996 Epoch 436/1000
997   - 0s - loss: 1.3891 -
      mean_absolute_error: 0.8256 - val_loss
      : 15.1839 - val_mean_absolute_error: 2
      .3931
998 Epoch 437/1000
999   - 0s - loss: 1.4526 -
      mean_absolute_error: 0.8553 - val_loss
      : 18.6208 - val_mean_absolute_error: 2
      .8468
1000 Epoch 438/1000
1001   - 0s - loss: 1.6221 -
      mean_absolute_error: 0.9080 - val_loss
```

```
1001 : 15.2141 - val_mean_absolute_error: 2
      .3682
1002 Epoch 439/1000
1003   - 0s - loss: 1.3062 -
      mean_absolute_error: 0.7833 - val_loss
      : 17.3299 - val_mean_absolute_error: 2
      .6129
1004 Epoch 440/1000
1005   - 0s - loss: 1.3235 -
      mean_absolute_error: 0.8317 - val_loss
      : 15.9880 - val_mean_absolute_error: 2
      .4058
1006
1007 Epoch 00440: val_mean_absolute_error
      did not improve from 2.27144
1008 Epoch 441/1000
1009   - 0s - loss: 1.3669 -
      mean_absolute_error: 0.8212 - val_loss
      : 14.3328 - val_mean_absolute_error: 2
      .4701
1010 Epoch 442/1000
1011   - 0s - loss: 1.3935 -
      mean_absolute_error: 0.8267 - val_loss
      : 14.6002 - val_mean_absolute_error: 2
```

```
1011 .4057
1012 Epoch 443/1000
1013 - 0s - loss: 1.4204 -
      mean_absolute_error: 0.8214 - val_loss
      : 14.9559 - val_mean_absolute_error: 2
      .3654
1014 Epoch 444/1000
1015 - 0s - loss: 1.4647 -
      mean_absolute_error: 0.8662 - val_loss
      : 15.3976 - val_mean_absolute_error: 2
      .4822
1016 Epoch 445/1000
1017 - 0s - loss: 1.4222 -
      mean_absolute_error: 0.8272 - val_loss
      : 15.7560 - val_mean_absolute_error: 2
      .4258
1018 Epoch 446/1000
1019 - 0s - loss: 1.4528 -
      mean_absolute_error: 0.8374 - val_loss
      : 15.6806 - val_mean_absolute_error: 2
      .6177
1020 Epoch 447/1000
1021 - 0s - loss: 1.4962 -
      mean_absolute_error: 0.8999 - val_loss
```

```
1021 : 15.6793 - val_mean_absolute_error: 2
      .8603
1022 Epoch 448/1000
1023   - 0s - loss: 1.4847 -
      mean_absolute_error: 0.8419 - val_loss
      : 14.4295 - val_mean_absolute_error: 2
      .5691
1024 Epoch 449/1000
1025   - 0s - loss: 1.3216 -
      mean_absolute_error: 0.7920 - val_loss
      : 14.3204 - val_mean_absolute_error: 2
      .3853
1026 Epoch 450/1000
1027   - 0s - loss: 1.5425 -
      mean_absolute_error: 0.8525 - val_loss
      : 14.8439 - val_mean_absolute_error: 2
      .4094
1028
1029 Epoch 00450: val_mean_absolute_error
      did not improve from 2.27144
1030 Epoch 451/1000
1031   - 0s - loss: 1.3961 -
      mean_absolute_error: 0.8513 - val_loss
      : 15.2733 - val_mean_absolute_error: 2
```



```
1031 .3529
1032 Epoch 452/1000
1033 - 0s - loss: 1.2873 -
mean_absolute_error: 0.8009 - val_loss
: 15.3636 - val_mean_absolute_error: 2
.4302
1034 Epoch 453/1000
1035 - 0s - loss: 1.4651 -
mean_absolute_error: 0.8252 - val_loss
: 19.1872 - val_mean_absolute_error: 2
.7028
1036 Epoch 454/1000
1037 - 0s - loss: 1.3986 -
mean_absolute_error: 0.8356 - val_loss
: 14.6009 - val_mean_absolute_error: 2
.3821
1038 Epoch 455/1000
1039 - 0s - loss: 1.2751 -
mean_absolute_error: 0.8080 - val_loss
: 18.8501 - val_mean_absolute_error: 2
.8521
1040 Epoch 456/1000
1041 - 0s - loss: 1.5120 -
mean_absolute_error: 0.8379 - val_loss
```

```
1041 : 15.3744 - val_mean_absolute_error: 2
      .4212
1042 Epoch 457/1000
1043 - 0s - loss: 1.3105 -
      mean_absolute_error: 0.7972 - val_loss
      : 20.0620 - val_mean_absolute_error: 2
      .8218
1044 Epoch 458/1000
1045 - 0s - loss: 1.4630 -
      mean_absolute_error: 0.8031 - val_loss
      : 15.7770 - val_mean_absolute_error: 2
      .3996
1046 Epoch 459/1000
1047 - 0s - loss: 1.3979 -
      mean_absolute_error: 0.8249 - val_loss
      : 17.4707 - val_mean_absolute_error: 2
      .5948
1048 Epoch 460/1000
1049 - 0s - loss: 1.2955 -
      mean_absolute_error: 0.7773 - val_loss
      : 14.7166 - val_mean_absolute_error: 2
      .6065
1050
1051 Epoch 00460: val_mean_absolute_error
```

```
1051 did not improve from 2.27144
1052 Epoch 461/1000
1053   - 0s - loss: 1.5079 -
      mean_absolute_error: 0.8546 - val_loss
      : 14.5971 - val_mean_absolute_error: 2
      .5882
1054 Epoch 462/1000
1055   - 0s - loss: 1.2808 -
      mean_absolute_error: 0.8089 - val_loss
      : 15.2834 - val_mean_absolute_error: 2
      .6384
1056 Epoch 463/1000
1057   - 0s - loss: 1.4995 -
      mean_absolute_error: 0.8677 - val_loss
      : 15.3751 - val_mean_absolute_error: 2
      .4891
1058 Epoch 464/1000
1059   - 0s - loss: 1.3150 -
      mean_absolute_error: 0.8065 - val_loss
      : 15.6377 - val_mean_absolute_error: 2
      .3880
1060 Epoch 465/1000
1061   - 0s - loss: 1.3882 -
      mean_absolute_error: 0.8157 - val_loss
```

```
1061 : 15.1846 - val_mean_absolute_error: 2
      .6059
1062 Epoch 466/1000
1063   - 0s - loss: 1.2884 -
      mean_absolute_error: 0.7912 - val_loss
      : 15.3182 - val_mean_absolute_error: 2
      .4192
1064 Epoch 467/1000
1065   - 0s - loss: 1.2263 -
      mean_absolute_error: 0.7824 - val_loss
      : 16.9179 - val_mean_absolute_error: 2
      .6228
1066 Epoch 468/1000
1067   - 0s - loss: 1.3314 -
      mean_absolute_error: 0.8077 - val_loss
      : 14.8826 - val_mean_absolute_error: 2
      .5286
1068 Epoch 469/1000
1069   - 0s - loss: 1.3488 -
      mean_absolute_error: 0.8193 - val_loss
      : 16.3800 - val_mean_absolute_error: 2
      .6663
1070 Epoch 470/1000
1071   - 0s - loss: 1.5476 -
```

1071 mean\_absolute\_error: 0.8933 - val\_loss  
: 17.0024 - val\_mean\_absolute\_error: 2  
.4963

1072

1073 Epoch 00470: val\_mean\_absolute\_error  
did not improve from 2.27144

1074 Epoch 471/1000

1075 - 0s - loss: 1.2216 -  
mean\_absolute\_error: 0.7555 - val\_loss  
: 14.9169 - val\_mean\_absolute\_error: 2  
.4210

1076 Epoch 472/1000

1077 - 0s - loss: 1.4347 -  
mean\_absolute\_error: 0.8198 - val\_loss  
: 14.7470 - val\_mean\_absolute\_error: 2  
.5996

1078 Epoch 473/1000

1079 - 0s - loss: 1.3208 -  
mean\_absolute\_error: 0.8213 - val\_loss  
: 16.2234 - val\_mean\_absolute\_error: 2  
.3906

1080 Epoch 474/1000

1081 - 0s - loss: 1.2121 -  
mean\_absolute\_error: 0.7523 - val\_loss

```
1081 : 16.3521 - val_mean_absolute_error: 2
      .4826
1082 Epoch 475/1000
1083   - 0s - loss: 1.4606 -
      mean_absolute_error: 0.8605 - val_loss
      : 15.7241 - val_mean_absolute_error: 2
      .5084
1084 Epoch 476/1000
1085   - 0s - loss: 1.2904 -
      mean_absolute_error: 0.7935 - val_loss
      : 18.1270 - val_mean_absolute_error: 2
      .6640
1086 Epoch 477/1000
1087   - 0s - loss: 1.2923 -
      mean_absolute_error: 0.8078 - val_loss
      : 14.7980 - val_mean_absolute_error: 2
      .4139
1088 Epoch 478/1000
1089   - 0s - loss: 1.3018 -
      mean_absolute_error: 0.7911 - val_loss
      : 14.7748 - val_mean_absolute_error: 2
      .4608
1090 Epoch 479/1000
1091   - 0s - loss: 1.3902 -
```

```
1091 mean_absolute_error: 0.8064 - val_loss
    : 15.1741 - val_mean_absolute_error: 2
    .3935
1092 Epoch 480/1000
1093   - 0s - loss: 1.2538 -
    mean_absolute_error: 0.8035 - val_loss
    : 17.8014 - val_mean_absolute_error: 2
    .4768
1094
1095 Epoch 00480: val_mean_absolute_error
    did not improve from 2.27144
1096 Epoch 481/1000
1097   - 0s - loss: 1.3405 -
    mean_absolute_error: 0.8052 - val_loss
    : 15.9345 - val_mean_absolute_error: 2
    .3997
1098 Epoch 482/1000
1099   - 0s - loss: 1.4113 -
    mean_absolute_error: 0.8256 - val_loss
    : 17.2834 - val_mean_absolute_error: 2
    .5154
1100 Epoch 483/1000
1101   - 0s - loss: 1.2252 -
    mean_absolute_error: 0.7798 - val_loss
```

```
1101 : 15.3407 - val_mean_absolute_error: 2
      .4102
1102 Epoch 484/1000
1103   - 0s - loss: 1.3166 -
      mean_absolute_error: 0.8216 - val_loss
      : 14.3019 - val_mean_absolute_error: 2
      .3097
1104 Epoch 485/1000
1105   - 0s - loss: 1.1871 -
      mean_absolute_error: 0.7702 - val_loss
      : 15.1237 - val_mean_absolute_error: 2
      .4963
1106 Epoch 486/1000
1107   - 0s - loss: 1.1865 -
      mean_absolute_error: 0.7687 - val_loss
      : 16.9390 - val_mean_absolute_error: 2
      .5814
1108 Epoch 487/1000
1109   - 0s - loss: 1.3128 -
      mean_absolute_error: 0.7788 - val_loss
      : 17.5866 - val_mean_absolute_error: 2
      .7433
1110 Epoch 488/1000
1111   - 0s - loss: 1.2545 -
```



```
1111 mean_absolute_error: 0.8029 - val_loss
    : 15.3829 - val_mean_absolute_error: 2
    .4257
1112 Epoch 489/1000
1113   - 0s - loss: 1.4075 -
    mean_absolute_error: 0.8124 - val_loss
    : 14.5391 - val_mean_absolute_error: 2
    .3596
1114 Epoch 490/1000
1115   - 0s - loss: 1.1715 -
    mean_absolute_error: 0.7612 - val_loss
    : 15.8992 - val_mean_absolute_error: 2
    .7858
1116
1117 Epoch 00490: val_mean_absolute_error
    did not improve from 2.27144
1118 Epoch 491/1000
1119   - 0s - loss: 1.3641 -
    mean_absolute_error: 0.8018 - val_loss
    : 15.1897 - val_mean_absolute_error: 2
    .6948
1120 Epoch 492/1000
1121   - 0s - loss: 1.2366 -
    mean_absolute_error: 0.7900 - val_loss
```

```
1121 : 15.6026 - val_mean_absolute_error: 2
      .5307
1122 Epoch 493/1000
1123 - 0s - loss: 1.2639 -
      mean_absolute_error: 0.8180 - val_loss
      : 15.6703 - val_mean_absolute_error: 2
      .3861
1124 Epoch 494/1000
1125 - 0s - loss: 1.1283 -
      mean_absolute_error: 0.7407 - val_loss
      : 16.3794 - val_mean_absolute_error: 2
      .6316
1126 Epoch 495/1000
1127 - 0s - loss: 1.3660 -
      mean_absolute_error: 0.8304 - val_loss
      : 15.4620 - val_mean_absolute_error: 2
      .4484
1128 Epoch 496/1000
1129 - 0s - loss: 1.1821 -
      mean_absolute_error: 0.7372 - val_loss
      : 16.5759 - val_mean_absolute_error: 2
      .4488
1130 Epoch 497/1000
1131 - 0s - loss: 1.2729 -
```

```
1131 mean_absolute_error: 0.7730 - val_loss
    : 16.3998 - val_mean_absolute_error: 2
    .6983
1132 Epoch 498/1000
1133   - 0s - loss: 1.2166 -
    mean_absolute_error: 0.7594 - val_loss
    : 15.6169 - val_mean_absolute_error: 2
    .4835
1134 Epoch 499/1000
1135   - 0s - loss: 1.2756 -
    mean_absolute_error: 0.8033 - val_loss
    : 14.6319 - val_mean_absolute_error: 2
    .4218
1136 Epoch 500/1000
1137   - 0s - loss: 1.1749 -
    mean_absolute_error: 0.7670 - val_loss
    : 14.8904 - val_mean_absolute_error: 2
    .4538
1138
1139 Epoch 00500: val_mean_absolute_error
    did not improve from 2.27144
1140 Epoch 501/1000
1141   - 0s - loss: 1.1487 -
    mean_absolute_error: 0.7480 - val_loss
```

```
1141 : 16.6566 - val_mean_absolute_error: 2
      .9768
1142 Epoch 502/1000
1143   - 0s - loss: 1.2880 -
      mean_absolute_error: 0.8142 - val_loss
      : 16.0898 - val_mean_absolute_error: 2
      .5141
1144 Epoch 503/1000
1145   - 0s - loss: 1.2656 -
      mean_absolute_error: 0.7602 - val_loss
      : 15.3520 - val_mean_absolute_error: 2
      .3657
1146 Epoch 504/1000
1147   - 0s - loss: 1.0644 -
      mean_absolute_error: 0.7268 - val_loss
      : 19.3094 - val_mean_absolute_error: 2
      .9653
1148 Epoch 505/1000
1149   - 0s - loss: 1.3898 -
      mean_absolute_error: 0.8284 - val_loss
      : 17.4024 - val_mean_absolute_error: 2
      .6903
1150 Epoch 506/1000
1151   - 0s - loss: 1.2114 -
```

1151 mean\_absolute\_error: 0.7498 - val\_loss  
: 15.5154 - val\_mean\_absolute\_error: 2  
.6234

1152 Epoch 507/1000

1153 - 0s - loss: 1.1887 -  
mean\_absolute\_error: 0.7807 - val\_loss  
: 18.5024 - val\_mean\_absolute\_error: 2  
.6155

1154 Epoch 508/1000

1155 - 0s - loss: 1.2928 -  
mean\_absolute\_error: 0.7954 - val\_loss  
: 15.0368 - val\_mean\_absolute\_error: 2  
.5116

1156 Epoch 509/1000

1157 - 0s - loss: 1.1460 -  
mean\_absolute\_error: 0.7561 - val\_loss  
: 18.2837 - val\_mean\_absolute\_error: 2  
.6992

1158 Epoch 510/1000

1159 - 0s - loss: 1.2676 -  
mean\_absolute\_error: 0.8098 - val\_loss  
: 16.7251 - val\_mean\_absolute\_error: 2  
.6921

1160

```
1161 Epoch 00510: val_mean_absolute_error
did not improve from 2.27144
1162 Epoch 511/1000
1163   - 0s - loss: 1.2281 -
mean_absolute_error: 0.7592 - val_loss
: 17.0036 - val_mean_absolute_error: 2
.5160
1164 Epoch 512/1000
1165   - 0s - loss: 1.1562 -
mean_absolute_error: 0.7344 - val_loss
: 15.9727 - val_mean_absolute_error: 2
.3987
1166 Epoch 513/1000
1167   - 0s - loss: 1.2073 -
mean_absolute_error: 0.7599 - val_loss
: 15.9019 - val_mean_absolute_error: 2
.5263
1168 Epoch 514/1000
1169   - 0s - loss: 1.2950 -
mean_absolute_error: 0.8000 - val_loss
: 15.0445 - val_mean_absolute_error: 2
.4886
1170 Epoch 515/1000
1171   - 0s - loss: 1.1694 -
```

```
1171 mean_absolute_error: 0.7363 - val_loss
    : 15.3402 - val_mean_absolute_error: 2
    .5100
1172 Epoch 516/1000
1173   - 0s - loss: 1.1633 -
    mean_absolute_error: 0.7577 - val_loss
    : 17.8315 - val_mean_absolute_error: 2
    .5041
1174 Epoch 517/1000
1175   - 0s - loss: 1.1697 -
    mean_absolute_error: 0.7646 - val_loss
    : 16.1533 - val_mean_absolute_error: 2
    .4476
1176 Epoch 518/1000
1177   - 0s - loss: 1.1830 -
    mean_absolute_error: 0.7541 - val_loss
    : 15.0255 - val_mean_absolute_error: 2
    .5156
1178 Epoch 519/1000
1179   - 0s - loss: 1.1983 -
    mean_absolute_error: 0.7815 - val_loss
    : 15.9906 - val_mean_absolute_error: 2
    .4432
1180 Epoch 520/1000
```

```
1181 - 0s - loss: 1.2718 -  
mean_absolute_error: 0.8043 - val_loss  
: 14.7915 - val_mean_absolute_error: 2  
.4652
```

```
1182
```

```
1183 Epoch 00520: val_mean_absolute_error  
did not improve from 2.27144
```

```
1184 Epoch 521/1000
```

```
1185 - 0s - loss: 1.2108 -  
mean_absolute_error: 0.7876 - val_loss  
: 15.4983 - val_mean_absolute_error: 2  
.4320
```

```
1186 Epoch 522/1000
```

```
1187 - 0s - loss: 1.1044 -  
mean_absolute_error: 0.7519 - val_loss  
: 17.1006 - val_mean_absolute_error: 2  
.7343
```

```
1188 Epoch 523/1000
```

```
1189 - 0s - loss: 1.2177 -  
mean_absolute_error: 0.7475 - val_loss  
: 17.2509 - val_mean_absolute_error: 2  
.5044
```

```
1190 Epoch 524/1000
```

```
1191 - 0s - loss: 1.1234 -
```



```
1191 mean_absolute_error: 0.7708 - val_loss
    : 14.8884 - val_mean_absolute_error: 2
    .5010
1192 Epoch 525/1000
1193   - 0s - loss: 1.2749 -
    mean_absolute_error: 0.8040 - val_loss
    : 15.9160 - val_mean_absolute_error: 2
    .4046
1194 Epoch 526/1000
1195   - 0s - loss: 1.1239 -
    mean_absolute_error: 0.7571 - val_loss
    : 15.3028 - val_mean_absolute_error: 2
    .5386
1196 Epoch 527/1000
1197   - 0s - loss: 1.0921 -
    mean_absolute_error: 0.7485 - val_loss
    : 14.9988 - val_mean_absolute_error: 2
    .4356
1198 Epoch 528/1000
1199   - 0s - loss: 1.0597 -
    mean_absolute_error: 0.7385 - val_loss
    : 15.9019 - val_mean_absolute_error: 2
    .4332
1200 Epoch 529/1000
```

```
1201 - 0s - loss: 1.1339 -  
mean_absolute_error: 0.7779 - val_loss  
: 14.9379 - val_mean_absolute_error: 2  
.4440  
1202 Epoch 530/1000  
1203 - 0s - loss: 1.1218 -  
mean_absolute_error: 0.7539 - val_loss  
: 16.3887 - val_mean_absolute_error: 2  
.5312  
1204  
1205 Epoch 00530: val_mean_absolute_error  
did not improve from 2.27144  
1206 Epoch 531/1000  
1207 - 0s - loss: 1.2614 -  
mean_absolute_error: 0.8057 - val_loss  
: 15.5892 - val_mean_absolute_error: 2  
.7606  
1208 Epoch 532/1000  
1209 - 0s - loss: 1.2189 -  
mean_absolute_error: 0.7653 - val_loss  
: 16.6334 - val_mean_absolute_error: 2  
.6112  
1210 Epoch 533/1000  
1211 - 0s - loss: 1.0554 -
```

```
1211 mean_absolute_error: 0.7047 - val_loss
    : 15.6724 - val_mean_absolute_error: 2
    .6273
1212 Epoch 534/1000
1213   - 0s - loss: 1.2589 -
    mean_absolute_error: 0.7915 - val_loss
    : 14.0414 - val_mean_absolute_error: 2
    .3938
1214 Epoch 535/1000
1215   - 0s - loss: 1.0898 -
    mean_absolute_error: 0.7374 - val_loss
    : 15.8243 - val_mean_absolute_error: 2
    .5647
1216 Epoch 536/1000
1217   - 0s - loss: 1.1871 -
    mean_absolute_error: 0.8156 - val_loss
    : 15.7048 - val_mean_absolute_error: 2
    .4593
1218 Epoch 537/1000
1219   - 0s - loss: 1.0703 -
    mean_absolute_error: 0.7245 - val_loss
    : 15.1707 - val_mean_absolute_error: 2
    .5365
1220 Epoch 538/1000
```

```
1221 - 0s - loss: 1.1292 -  
      mean_absolute_error: 0.7625 - val_loss  
      : 16.6963 - val_mean_absolute_error: 2  
      .5301  
1222 Epoch 539/1000  
1223 - 0s - loss: 1.1918 -  
      mean_absolute_error: 0.7784 - val_loss  
      : 15.3670 - val_mean_absolute_error: 2  
      .4169  
1224 Epoch 540/1000  
1225 - 0s - loss: 1.0425 -  
      mean_absolute_error: 0.7137 - val_loss  
      : 16.2931 - val_mean_absolute_error: 2  
      .5223  
1226  
1227 Epoch 00540: val_mean_absolute_error  
      did not improve from 2.27144  
1228 Epoch 541/1000  
1229 - 0s - loss: 1.1381 -  
      mean_absolute_error: 0.7178 - val_loss  
      : 15.6596 - val_mean_absolute_error: 2  
      .5139  
1230 Epoch 542/1000  
1231 - 0s - loss: 1.1784 -
```

```
1231 mean_absolute_error: 0.7558 - val_loss
    : 16.1194 - val_mean_absolute_error: 2
    .7375
1232 Epoch 543/1000
1233   - 0s - loss: 1.1091 -
    mean_absolute_error: 0.7510 - val_loss
    : 15.3199 - val_mean_absolute_error: 2
    .5189
1234 Epoch 544/1000
1235   - 0s - loss: 1.1573 -
    mean_absolute_error: 0.7894 - val_loss
    : 16.7865 - val_mean_absolute_error: 2
    .7187
1236 Epoch 545/1000
1237   - 0s - loss: 1.1455 -
    mean_absolute_error: 0.7296 - val_loss
    : 17.8621 - val_mean_absolute_error: 2
    .5807
1238 Epoch 546/1000
1239   - 0s - loss: 1.0424 -
    mean_absolute_error: 0.7269 - val_loss
    : 16.0720 - val_mean_absolute_error: 2
    .6708
1240 Epoch 547/1000
```

```
1241 - 0s - loss: 1.1234 -  
      mean_absolute_error: 0.7701 - val_loss  
      : 15.1684 - val_mean_absolute_error: 2  
      .4716  
1242 Epoch 548/1000  
1243 - 0s - loss: 1.2164 -  
      mean_absolute_error: 0.7678 - val_loss  
      : 16.7780 - val_mean_absolute_error: 2  
      .5511  
1244 Epoch 549/1000  
1245 - 0s - loss: 0.9798 -  
      mean_absolute_error: 0.6896 - val_loss  
      : 14.9074 - val_mean_absolute_error: 2  
      .4387  
1246 Epoch 550/1000  
1247 - 0s - loss: 1.1400 -  
      mean_absolute_error: 0.7146 - val_loss  
      : 16.2802 - val_mean_absolute_error: 2  
      .5250  
1248  
1249 Epoch 00550: val_mean_absolute_error  
      did not improve from 2.27144  
1250 Epoch 551/1000  
1251 - 0s - loss: 1.1057 -
```

```
1251 mean_absolute_error: 0.7505 - val_loss
    : 16.9267 - val_mean_absolute_error: 2
    .7439
1252 Epoch 552/1000
1253   - 0s - loss: 0.9975 -
    mean_absolute_error: 0.7018 - val_loss
    : 15.6486 - val_mean_absolute_error: 2
    .4645
1254 Epoch 553/1000
1255   - 0s - loss: 1.1113 -
    mean_absolute_error: 0.7301 - val_loss
    : 17.3271 - val_mean_absolute_error: 2
    .7054
1256 Epoch 554/1000
1257   - 0s - loss: 1.1141 -
    mean_absolute_error: 0.7679 - val_loss
    : 16.1780 - val_mean_absolute_error: 2
    .4992
1258 Epoch 555/1000
1259   - 0s - loss: 1.0264 -
    mean_absolute_error: 0.6965 - val_loss
    : 15.1519 - val_mean_absolute_error: 2
    .4183
1260 Epoch 556/1000
```

```
1261 - 0s - loss: 1.1266 -  
mean_absolute_error: 0.7464 - val_loss  
: 19.0380 - val_mean_absolute_error: 2  
.7500  
1262 Epoch 557/1000  
1263 - 0s - loss: 1.0362 -  
mean_absolute_error: 0.7006 - val_loss  
: 14.6093 - val_mean_absolute_error: 2  
.6071  
1264 Epoch 558/1000  
1265 - 0s - loss: 1.1830 -  
mean_absolute_error: 0.7850 - val_loss  
: 16.2723 - val_mean_absolute_error: 2  
.4304  
1266 Epoch 559/1000  
1267 - 0s - loss: 0.9651 -  
mean_absolute_error: 0.6724 - val_loss  
: 18.1972 - val_mean_absolute_error: 2  
.6403  
1268 Epoch 560/1000  
1269 - 0s - loss: 1.0348 -  
mean_absolute_error: 0.6941 - val_loss  
: 17.6269 - val_mean_absolute_error: 2  
.6630
```



1270

1271 Epoch 00560: val\_mean\_absolute\_error  
did not improve from 2.27144

1272 Epoch 561/1000

1273 - 0s - loss: 1.2047 -  
mean\_absolute\_error: 0.7561 - val\_loss  
: 16.9649 - val\_mean\_absolute\_error: 2  
.5499

1274 Epoch 562/1000

1275 - 0s - loss: 1.0453 -  
mean\_absolute\_error: 0.7245 - val\_loss  
: 17.0963 - val\_mean\_absolute\_error: 2  
.4646

1276 Epoch 563/1000

1277 - 0s - loss: 1.0859 -  
mean\_absolute\_error: 0.6903 - val\_loss  
: 15.6119 - val\_mean\_absolute\_error: 2  
.4881

1278 Epoch 564/1000

1279 - 0s - loss: 1.0070 -  
mean\_absolute\_error: 0.6836 - val\_loss  
: 16.1026 - val\_mean\_absolute\_error: 2  
.4718

1280 Epoch 565/1000

```
1281 - 0s - loss: 0.9683 -  
mean_absolute_error: 0.6965 - val_loss  
: 15.8200 - val_mean_absolute_error: 2  
.4561  
1282 Epoch 566/1000  
1283 - 0s - loss: 1.2246 -  
mean_absolute_error: 0.7796 - val_loss  
: 15.7111 - val_mean_absolute_error: 2  
.6740  
1284 Epoch 567/1000  
1285 - 0s - loss: 0.9919 -  
mean_absolute_error: 0.6878 - val_loss  
: 16.4845 - val_mean_absolute_error: 2  
.6521  
1286 Epoch 568/1000  
1287 - 0s - loss: 1.0955 -  
mean_absolute_error: 0.7432 - val_loss  
: 15.5066 - val_mean_absolute_error: 2  
.5411  
1288 Epoch 569/1000  
1289 - 0s - loss: 1.0332 -  
mean_absolute_error: 0.7260 - val_loss  
: 15.2196 - val_mean_absolute_error: 2  
.6053
```

```
1290 Epoch 570/1000
1291   - 0s - loss: 1.0670 -
      mean_absolute_error: 0.7286 - val_loss
      : 16.2271 - val_mean_absolute_error: 2
      .5952
1292
1293 Epoch 00570: val_mean_absolute_error
      did not improve from 2.27144
1294 Epoch 571/1000
1295   - 0s - loss: 0.9495 -
      mean_absolute_error: 0.6917 - val_loss
      : 16.6640 - val_mean_absolute_error: 2
      .5196
1296 Epoch 572/1000
1297   - 0s - loss: 0.9861 -
      mean_absolute_error: 0.6949 - val_loss
      : 16.1516 - val_mean_absolute_error: 2
      .4616
1298 Epoch 573/1000
1299   - 0s - loss: 1.2953 -
      mean_absolute_error: 0.7990 - val_loss
      : 15.5041 - val_mean_absolute_error: 2
      .5223
1300 Epoch 574/1000
```

```
1301 - 0s - loss: 0.9788 -  
mean_absolute_error: 0.6753 - val_loss  
: 16.9932 - val_mean_absolute_error: 2  
.5300  
1302 Epoch 575/1000  
1303 - 0s - loss: 1.0090 -  
mean_absolute_error: 0.7249 - val_loss  
: 15.1640 - val_mean_absolute_error: 2  
.5428  
1304 Epoch 576/1000  
1305 - 0s - loss: 1.0347 -  
mean_absolute_error: 0.7267 - val_loss  
: 15.5803 - val_mean_absolute_error: 2  
.4762  
1306 Epoch 577/1000  
1307 - 0s - loss: 1.0363 -  
mean_absolute_error: 0.7595 - val_loss  
: 15.9580 - val_mean_absolute_error: 2  
.4132  
1308 Epoch 578/1000  
1309 - 0s - loss: 0.9806 -  
mean_absolute_error: 0.6760 - val_loss  
: 16.4535 - val_mean_absolute_error: 2  
.5605
```

```
1310 Epoch 579/1000
1311   - 0s - loss: 0.9729 -
      mean_absolute_error: 0.6936 - val_loss
      : 16.1299 - val_mean_absolute_error: 2
      .4676
1312 Epoch 580/1000
1313   - 0s - loss: 1.0966 -
      mean_absolute_error: 0.7503 - val_loss
      : 15.9359 - val_mean_absolute_error: 2
      .4691
1314
1315 Epoch 00580: val_mean_absolute_error
      did not improve from 2.27144
1316 Epoch 581/1000
1317   - 0s - loss: 1.0213 -
      mean_absolute_error: 0.6973 - val_loss
      : 18.0745 - val_mean_absolute_error: 2
      .7101
1318 Epoch 582/1000
1319   - 0s - loss: 1.1049 -
      mean_absolute_error: 0.7615 - val_loss
      : 14.9483 - val_mean_absolute_error: 2
      .5573
1320 Epoch 583/1000
```

```
1321 - 0s - loss: 0.9383 -  
      mean_absolute_error: 0.6648 - val_loss  
      : 15.1002 - val_mean_absolute_error: 2  
      .3735  
1322 Epoch 584/1000  
1323 - 0s - loss: 0.9157 -  
      mean_absolute_error: 0.6852 - val_loss  
      : 16.4911 - val_mean_absolute_error: 2  
      .5357  
1324 Epoch 585/1000  
1325 - 0s - loss: 1.1339 -  
      mean_absolute_error: 0.7444 - val_loss  
      : 15.9413 - val_mean_absolute_error: 2  
      .5377  
1326 Epoch 586/1000  
1327 - 0s - loss: 0.8998 -  
      mean_absolute_error: 0.6597 - val_loss  
      : 14.9399 - val_mean_absolute_error: 2  
      .5652  
1328 Epoch 587/1000  
1329 - 0s - loss: 1.0428 -  
      mean_absolute_error: 0.6981 - val_loss  
      : 16.9034 - val_mean_absolute_error: 2  
      .5155
```

```
1330 Epoch 588/1000
1331   - 0s - loss: 1.0714 -
      mean_absolute_error: 0.7528 - val_loss
      : 14.4276 - val_mean_absolute_error: 2
      .5366
1332 Epoch 589/1000
1333   - 0s - loss: 1.0186 -
      mean_absolute_error: 0.6933 - val_loss
      : 16.4896 - val_mean_absolute_error: 2
      .5362
1334 Epoch 590/1000
1335   - 0s - loss: 0.9791 -
      mean_absolute_error: 0.6730 - val_loss
      : 14.8191 - val_mean_absolute_error: 2
      .4525
1336
1337 Epoch 00590: val_mean_absolute_error
      did not improve from 2.27144
1338 Epoch 591/1000
1339   - 0s - loss: 0.9361 -
      mean_absolute_error: 0.6959 - val_loss
      : 15.8291 - val_mean_absolute_error: 2
      .7879
1340 Epoch 592/1000
```

```
1341 - 0s - loss: 0.9939 -  
mean_absolute_error: 0.6710 - val_loss  
: 21.1370 - val_mean_absolute_error: 3  
.0847  
1342 Epoch 593/1000  
1343 - 0s - loss: 1.0172 -  
mean_absolute_error: 0.7072 - val_loss  
: 16.1649 - val_mean_absolute_error: 2  
.5862  
1344 Epoch 594/1000  
1345 - 0s - loss: 0.9567 -  
mean_absolute_error: 0.6829 - val_loss  
: 16.0203 - val_mean_absolute_error: 2  
.5078  
1346 Epoch 595/1000  
1347 - 0s - loss: 1.0707 -  
mean_absolute_error: 0.7441 - val_loss  
: 16.1389 - val_mean_absolute_error: 2  
.4559  
1348 Epoch 596/1000  
1349 - 0s - loss: 1.0089 -  
mean_absolute_error: 0.6873 - val_loss  
: 20.9247 - val_mean_absolute_error: 3  
.0186
```



```
1350 Epoch 597/1000
1351   - 0s - loss: 0.9725 -
      mean_absolute_error: 0.6634 - val_loss
      : 16.6247 - val_mean_absolute_error: 2
      .5211
1352 Epoch 598/1000
1353   - 0s - loss: 0.9848 -
      mean_absolute_error: 0.7063 - val_loss
      : 15.0001 - val_mean_absolute_error: 2
      .4847
1354 Epoch 599/1000
1355   - 0s - loss: 0.9306 -
      mean_absolute_error: 0.6875 - val_loss
      : 15.8182 - val_mean_absolute_error: 2
      .5991
1356 Epoch 600/1000
1357   - 0s - loss: 0.9460 -
      mean_absolute_error: 0.6843 - val_loss
      : 16.5506 - val_mean_absolute_error: 2
      .4585
1358
1359 Epoch 00600: val_mean_absolute_error
      did not improve from 2.27144
1360 Epoch 601/1000
```

```
1361 - 0s - loss: 0.9200 -  
      mean_absolute_error: 0.6839 - val_loss  
      : 22.2030 - val_mean_absolute_error: 2  
      .9944  
1362 Epoch 602/1000  
1363 - 0s - loss: 1.1081 -  
      mean_absolute_error: 0.7141 - val_loss  
      : 16.9667 - val_mean_absolute_error: 2  
      .5265  
1364 Epoch 603/1000  
1365 - 0s - loss: 0.9795 -  
      mean_absolute_error: 0.7036 - val_loss  
      : 15.2898 - val_mean_absolute_error: 2  
      .4535  
1366 Epoch 604/1000  
1367 - 0s - loss: 0.9751 -  
      mean_absolute_error: 0.6894 - val_loss  
      : 16.1827 - val_mean_absolute_error: 2  
      .5553  
1368 Epoch 605/1000  
1369 - 0s - loss: 0.8893 -  
      mean_absolute_error: 0.6687 - val_loss  
      : 16.8937 - val_mean_absolute_error: 2  
      .5484
```

```
1370 Epoch 606/1000
1371   - 0s - loss: 1.0285 -
      mean_absolute_error: 0.7259 - val_loss
      : 17.6677 - val_mean_absolute_error: 2
      .5764
1372 Epoch 607/1000
1373   - 0s - loss: 0.9491 -
      mean_absolute_error: 0.6873 - val_loss
      : 18.5702 - val_mean_absolute_error: 2
      .7254
1374 Epoch 608/1000
1375   - 0s - loss: 0.9807 -
      mean_absolute_error: 0.7115 - val_loss
      : 16.5174 - val_mean_absolute_error: 2
      .5974
1376 Epoch 609/1000
1377   - 0s - loss: 0.8912 -
      mean_absolute_error: 0.6571 - val_loss
      : 16.7611 - val_mean_absolute_error: 2
      .5153
1378 Epoch 610/1000
1379   - 0s - loss: 0.8826 -
      mean_absolute_error: 0.6391 - val_loss
      : 16.9552 - val_mean_absolute_error: 2
```

1379 .5008

1380

1381 Epoch 00610: val\_mean\_absolute\_error  
did not improve from 2.27144

1382 Epoch 611/1000

1383 - 0s - loss: 0.9786 -  
mean\_absolute\_error: 0.6955 - val\_loss  
: 15.3866 - val\_mean\_absolute\_error: 2  
.4482

1384 Epoch 612/1000

1385 - 0s - loss: 0.9813 -  
mean\_absolute\_error: 0.6777 - val\_loss  
: 16.2188 - val\_mean\_absolute\_error: 2  
.4415

1386 Epoch 613/1000

1387 - 0s - loss: 0.9961 -  
mean\_absolute\_error: 0.6887 - val\_loss  
: 15.5867 - val\_mean\_absolute\_error: 2  
.5711

1388 Epoch 614/1000

1389 - 0s - loss: 0.9313 -  
mean\_absolute\_error: 0.6958 - val\_loss  
: 18.4313 - val\_mean\_absolute\_error: 2  
.7326

```
1390 Epoch 615/1000
1391   - 0s - loss: 0.9700 -
      mean_absolute_error: 0.7037 - val_loss
      : 16.4145 - val_mean_absolute_error: 2
      .4773
1392 Epoch 616/1000
1393   - 0s - loss: 0.9681 -
      mean_absolute_error: 0.7047 - val_loss
      : 16.3440 - val_mean_absolute_error: 2
      .5579
1394 Epoch 617/1000
1395   - 0s - loss: 0.8606 -
      mean_absolute_error: 0.6597 - val_loss
      : 16.1268 - val_mean_absolute_error: 2
      .4763
1396 Epoch 618/1000
1397   - 0s - loss: 1.0404 -
      mean_absolute_error: 0.6997 - val_loss
      : 19.2191 - val_mean_absolute_error: 2
      .6369
1398 Epoch 619/1000
1399   - 0s - loss: 0.8666 -
      mean_absolute_error: 0.6683 - val_loss
      : 16.0782 - val_mean_absolute_error: 2
```

```
1399 .7046
1400 Epoch 620/1000
1401   - 0s - loss: 1.0137 -
      mean_absolute_error: 0.7221 - val_loss
      : 15.7593 - val_mean_absolute_error: 2
      .4761
1402
1403 Epoch 00620: val_mean_absolute_error
      did not improve from 2.27144
1404 Epoch 621/1000
1405   - 0s - loss: 0.8670 -
      mean_absolute_error: 0.6641 - val_loss
      : 18.2718 - val_mean_absolute_error: 2
      .7499
1406 Epoch 622/1000
1407   - 0s - loss: 0.9079 -
      mean_absolute_error: 0.6594 - val_loss
      : 17.5362 - val_mean_absolute_error: 2
      .5788
1408 Epoch 623/1000
1409   - 0s - loss: 1.0001 -
      mean_absolute_error: 0.6979 - val_loss
      : 16.2867 - val_mean_absolute_error: 2
      .5412
```

```
1410 Epoch 624/1000
1411   - 0s - loss: 1.0017 -
      mean_absolute_error: 0.7188 - val_loss
      : 17.1415 - val_mean_absolute_error: 2
      .5078
1412 Epoch 625/1000
1413   - 0s - loss: 0.8538 -
      mean_absolute_error: 0.6270 - val_loss
      : 17.0127 - val_mean_absolute_error: 2
      .5035
1414 Epoch 626/1000
1415   - 0s - loss: 0.8994 -
      mean_absolute_error: 0.6787 - val_loss
      : 16.4467 - val_mean_absolute_error: 2
      .4609
1416 Epoch 627/1000
1417   - 0s - loss: 0.8786 -
      mean_absolute_error: 0.7002 - val_loss
      : 19.6858 - val_mean_absolute_error: 2
      .7688
1418 Epoch 628/1000
1419   - 0s - loss: 0.8972 -
      mean_absolute_error: 0.6784 - val_loss
      : 16.5174 - val_mean_absolute_error: 2
```

```
1419 .5524
1420 Epoch 629/1000
1421 - 0s - loss: 1.0134 -
      mean_absolute_error: 0.7088 - val_loss
      : 16.1320 - val_mean_absolute_error: 2
      .5470
1422 Epoch 630/1000
1423 - 0s - loss: 0.9450 -
      mean_absolute_error: 0.6835 - val_loss
      : 17.5445 - val_mean_absolute_error: 2
      .5373
1424
1425 Epoch 00630: val_mean_absolute_error
      did not improve from 2.27144
1426 Epoch 631/1000
1427 - 0s - loss: 0.9843 -
      mean_absolute_error: 0.7099 - val_loss
      : 16.1477 - val_mean_absolute_error: 2
      .4738
1428 Epoch 632/1000
1429 - 0s - loss: 0.8973 -
      mean_absolute_error: 0.6782 - val_loss
      : 17.0315 - val_mean_absolute_error: 2
      .5509
```



```
1430 Epoch 633/1000
1431   - 0s - loss: 0.9846 -
      mean_absolute_error: 0.7115 - val_loss
      : 17.3238 - val_mean_absolute_error: 2
      .5465
1432 Epoch 634/1000
1433   - 0s - loss: 0.8397 -
      mean_absolute_error: 0.6420 - val_loss
      : 16.7816 - val_mean_absolute_error: 2
      .5585
1434 Epoch 635/1000
1435   - 0s - loss: 0.9138 -
      mean_absolute_error: 0.6888 - val_loss
      : 17.8202 - val_mean_absolute_error: 2
      .7978
1436 Epoch 636/1000
1437   - 0s - loss: 0.8729 -
      mean_absolute_error: 0.6453 - val_loss
      : 20.3524 - val_mean_absolute_error: 2
      .8369
1438 Epoch 637/1000
1439   - 0s - loss: 0.8833 -
      mean_absolute_error: 0.6585 - val_loss
      : 17.0838 - val_mean_absolute_error: 2
```

```
1439 .5643
1440 Epoch 638/1000
1441   - 0s - loss: 0.9085 -
      mean_absolute_error: 0.6709 - val_loss
      : 18.6386 - val_mean_absolute_error: 2
      .7042
1442 Epoch 639/1000
1443   - 0s - loss: 0.8645 -
      mean_absolute_error: 0.6501 - val_loss
      : 16.5265 - val_mean_absolute_error: 2
      .5328
1444 Epoch 640/1000
1445   - 0s - loss: 0.6945 -
      mean_absolute_error: 0.5967 - val_loss
      : 18.5486 - val_mean_absolute_error: 2
      .7611
1446
1447 Epoch 00640: val_mean_absolute_error
      did not improve from 2.27144
1448 Epoch 641/1000
1449   - 0s - loss: 1.0113 -
      mean_absolute_error: 0.7118 - val_loss
      : 17.2795 - val_mean_absolute_error: 2
      .5028
```

```
1450 Epoch 642/1000
1451   - 0s - loss: 0.8455 -
      mean_absolute_error: 0.6348 - val_loss
      : 17.5676 - val_mean_absolute_error: 2
      .7451
1452 Epoch 643/1000
1453   - 0s - loss: 0.9341 -
      mean_absolute_error: 0.6647 - val_loss
      : 18.1389 - val_mean_absolute_error: 2
      .6645
1454 Epoch 644/1000
1455   - 0s - loss: 0.9403 -
      mean_absolute_error: 0.6711 - val_loss
      : 15.5930 - val_mean_absolute_error: 2
      .5469
1456 Epoch 645/1000
1457   - 0s - loss: 0.8397 -
      mean_absolute_error: 0.6249 - val_loss
      : 16.2592 - val_mean_absolute_error: 2
      .5733
1458 Epoch 646/1000
1459   - 0s - loss: 0.8526 -
      mean_absolute_error: 0.6652 - val_loss
      : 16.0770 - val_mean_absolute_error: 2
```

```
1459 .5876
1460 Epoch 647/1000
1461 - 0s - loss: 0.9286 -
      mean_absolute_error: 0.6780 - val_loss
      : 16.2150 - val_mean_absolute_error: 2
      .5359
1462 Epoch 648/1000
1463 - 0s - loss: 0.9113 -
      mean_absolute_error: 0.6828 - val_loss
      : 15.7953 - val_mean_absolute_error: 2
      .5173
1464 Epoch 649/1000
1465 - 0s - loss: 0.8162 -
      mean_absolute_error: 0.6372 - val_loss
      : 16.6788 - val_mean_absolute_error: 2
      .6208
1466 Epoch 650/1000
1467 - 0s - loss: 0.8813 -
      mean_absolute_error: 0.6559 - val_loss
      : 16.2586 - val_mean_absolute_error: 2
      .4828
1468
1469 Epoch 00650: val_mean_absolute_error
      did not improve from 2.27144
```

```
1470 Epoch 651/1000
1471   - 0s - loss: 0.8309 -
      mean_absolute_error: 0.6530 - val_loss
      : 16.9466 - val_mean_absolute_error: 2
      .8567
1472 Epoch 652/1000
1473   - 0s - loss: 1.0311 -
      mean_absolute_error: 0.6985 - val_loss
      : 16.3148 - val_mean_absolute_error: 2
      .6615
1474 Epoch 653/1000
1475   - 0s - loss: 0.8826 -
      mean_absolute_error: 0.6546 - val_loss
      : 15.3691 - val_mean_absolute_error: 2
      .4835
1476 Epoch 654/1000
1477   - 0s - loss: 0.8864 -
      mean_absolute_error: 0.6597 - val_loss
      : 16.8009 - val_mean_absolute_error: 2
      .4970
1478 Epoch 655/1000
1479   - 0s - loss: 0.9201 -
      mean_absolute_error: 0.6903 - val_loss
      : 18.4767 - val_mean_absolute_error: 2
```

```
1479 .6099
1480 Epoch 656/1000
1481 - 0s - loss: 0.9074 -
      mean_absolute_error: 0.6663 - val_loss
      : 16.1474 - val_mean_absolute_error: 2
      .5174
1482 Epoch 657/1000
1483 - 0s - loss: 0.8767 -
      mean_absolute_error: 0.6691 - val_loss
      : 15.6229 - val_mean_absolute_error: 2
      .4484
1484 Epoch 658/1000
1485 - 0s - loss: 0.7781 -
      mean_absolute_error: 0.6287 - val_loss
      : 17.6916 - val_mean_absolute_error: 2
      .6181
1486 Epoch 659/1000
1487 - 0s - loss: 0.8664 -
      mean_absolute_error: 0.6369 - val_loss
      : 17.1867 - val_mean_absolute_error: 2
      .5638
1488 Epoch 660/1000
1489 - 0s - loss: 0.9169 -
      mean_absolute_error: 0.6840 - val_loss
```

1489 : 16.4790 - val\_mean\_absolute\_error: 2  
.6204

1490

1491 Epoch 00660: val\_mean\_absolute\_error  
did not improve from 2.27144

1492 Epoch 661/1000

1493 - 0s - loss: 0.8838 -  
mean\_absolute\_error: 0.6512 - val\_loss  
: 16.5279 - val\_mean\_absolute\_error: 2  
.7093

1494 Epoch 662/1000

1495 - 0s - loss: 0.8817 -  
mean\_absolute\_error: 0.6752 - val\_loss  
: 18.9624 - val\_mean\_absolute\_error: 2  
.6964

1496 Epoch 663/1000

1497 - 0s - loss: 0.8638 -  
mean\_absolute\_error: 0.6453 - val\_loss  
: 17.0433 - val\_mean\_absolute\_error: 2  
.6610

1498 Epoch 664/1000

1499 - 0s - loss: 0.9534 -  
mean\_absolute\_error: 0.6969 - val\_loss  
: 16.7735 - val\_mean\_absolute\_error: 2

```
1499 .5925
1500 Epoch 665/1000
1501   - 0s - loss: 0.8652 -
      mean_absolute_error: 0.6589 - val_loss
      : 17.2316 - val_mean_absolute_error: 2
      .6173
1502 Epoch 666/1000
1503   - 0s - loss: 0.9629 -
      mean_absolute_error: 0.6500 - val_loss
      : 17.1109 - val_mean_absolute_error: 2
      .5812
1504 Epoch 667/1000
1505   - 0s - loss: 0.8793 -
      mean_absolute_error: 0.6648 - val_loss
      : 16.3868 - val_mean_absolute_error: 2
      .4700
1506 Epoch 668/1000
1507   - 0s - loss: 0.9221 -
      mean_absolute_error: 0.6643 - val_loss
      : 16.4932 - val_mean_absolute_error: 2
      .5366
1508 Epoch 669/1000
1509   - 0s - loss: 0.8590 -
      mean_absolute_error: 0.6172 - val_loss
```



```
1509 : 18.1640 - val_mean_absolute_error: 2
      .6386
1510 Epoch 670/1000
1511   - 0s - loss: 0.9133 -
      mean_absolute_error: 0.6795 - val_loss
      : 17.4686 - val_mean_absolute_error: 2
      .5579
1512
1513 Epoch 00670: val_mean_absolute_error
      did not improve from 2.27144
1514 Epoch 671/1000
1515   - 0s - loss: 0.8755 -
      mean_absolute_error: 0.6333 - val_loss
      : 17.9309 - val_mean_absolute_error: 2
      .5620
1516 Epoch 672/1000
1517   - 0s - loss: 0.8016 -
      mean_absolute_error: 0.6320 - val_loss
      : 17.7888 - val_mean_absolute_error: 2
      .6876
1518 Epoch 673/1000
1519   - 0s - loss: 0.7232 -
      mean_absolute_error: 0.6294 - val_loss
      : 17.4269 - val_mean_absolute_error: 2
```

```
1519 .6322
1520 Epoch 674/1000
1521 - 0s - loss: 0.8872 -
      mean_absolute_error: 0.6496 - val_loss
      : 17.9242 - val_mean_absolute_error: 2
      .6734
1522 Epoch 675/1000
1523 - 0s - loss: 0.8593 -
      mean_absolute_error: 0.6545 - val_loss
      : 17.4430 - val_mean_absolute_error: 2
      .5227
1524 Epoch 676/1000
1525 - 0s - loss: 0.8928 -
      mean_absolute_error: 0.6658 - val_loss
      : 17.2480 - val_mean_absolute_error: 2
      .6157
1526 Epoch 677/1000
1527 - 0s - loss: 0.7884 -
      mean_absolute_error: 0.6394 - val_loss
      : 17.0054 - val_mean_absolute_error: 2
      .5349
1528 Epoch 678/1000
1529 - 0s - loss: 0.8048 -
      mean_absolute_error: 0.6380 - val_loss
```

```
1529 : 17.8078 - val_mean_absolute_error: 2
      .6144
1530 Epoch 679/1000
1531   - 0s - loss: 0.7901 -
      mean_absolute_error: 0.6098 - val_loss
      : 16.7390 - val_mean_absolute_error: 2
      .5501
1532 Epoch 680/1000
1533   - 0s - loss: 0.7663 -
      mean_absolute_error: 0.6384 - val_loss
      : 16.4030 - val_mean_absolute_error: 2
      .4464
1534
1535 Epoch 00680: val_mean_absolute_error
      did not improve from 2.27144
1536 Epoch 681/1000
1537   - 0s - loss: 0.8978 -
      mean_absolute_error: 0.6850 - val_loss
      : 17.1570 - val_mean_absolute_error: 2
      .6099
1538 Epoch 682/1000
1539   - 0s - loss: 0.7182 -
      mean_absolute_error: 0.6004 - val_loss
      : 16.6836 - val_mean_absolute_error: 2
```

```
1539 .6081
1540 Epoch 683/1000
1541 - 0s - loss: 0.7297 -
      mean_absolute_error: 0.6085 - val_loss
      : 16.8546 - val_mean_absolute_error: 2
      .4913
1542 Epoch 684/1000
1543 - 0s - loss: 0.8805 -
      mean_absolute_error: 0.6590 - val_loss
      : 17.0574 - val_mean_absolute_error: 2
      .5783
1544 Epoch 685/1000
1545 - 0s - loss: 0.8028 -
      mean_absolute_error: 0.6043 - val_loss
      : 18.6762 - val_mean_absolute_error: 2
      .6472
1546 Epoch 686/1000
1547 - 0s - loss: 0.8018 -
      mean_absolute_error: 0.5984 - val_loss
      : 18.7497 - val_mean_absolute_error: 3
      .0414
1548 Epoch 687/1000
1549 - 0s - loss: 0.9078 -
      mean_absolute_error: 0.6769 - val_loss
```

```
1549 : 16.5108 - val_mean_absolute_error: 2
      .6617
1550 Epoch 688/1000
1551   - 0s - loss: 0.8667 -
      mean_absolute_error: 0.6535 - val_loss
      : 17.9134 - val_mean_absolute_error: 2
      .7029
1552 Epoch 689/1000
1553   - 0s - loss: 0.7626 -
      mean_absolute_error: 0.6465 - val_loss
      : 16.7298 - val_mean_absolute_error: 2
      .5831
1554 Epoch 690/1000
1555   - 0s - loss: 0.7509 -
      mean_absolute_error: 0.6286 - val_loss
      : 18.9315 - val_mean_absolute_error: 2
      .6777
1556
1557 Epoch 00690: val_mean_absolute_error
      did not improve from 2.27144
1558 Epoch 691/1000
1559   - 0s - loss: 0.7595 -
      mean_absolute_error: 0.6224 - val_loss
      : 17.7943 - val_mean_absolute_error: 2
```

```
1559 .6692
1560 Epoch 692/1000
1561 - 0s - loss: 0.8737 -
      mean_absolute_error: 0.6852 - val_loss
      : 17.4679 - val_mean_absolute_error: 2
      .5255
1562 Epoch 693/1000
1563 - 0s - loss: 0.8477 -
      mean_absolute_error: 0.6421 - val_loss
      : 17.5193 - val_mean_absolute_error: 2
      .6866
1564 Epoch 694/1000
1565 - 0s - loss: 0.7712 -
      mean_absolute_error: 0.6378 - val_loss
      : 17.1759 - val_mean_absolute_error: 2
      .5974
1566 Epoch 695/1000
1567 - 0s - loss: 0.7573 -
      mean_absolute_error: 0.6074 - val_loss
      : 16.6686 - val_mean_absolute_error: 2
      .6082
1568 Epoch 696/1000
1569 - 0s - loss: 0.7811 -
      mean_absolute_error: 0.6414 - val_loss
```

```
1569 : 17.4350 - val_mean_absolute_error: 2
      .9341
1570 Epoch 697/1000
1571   - 0s - loss: 0.9812 -
      mean_absolute_error: 0.7030 - val_loss
      : 17.4035 - val_mean_absolute_error: 2
      .6249
1572 Epoch 698/1000
1573   - 0s - loss: 0.6189 -
      mean_absolute_error: 0.5606 - val_loss
      : 17.1821 - val_mean_absolute_error: 2
      .8058
1574 Epoch 699/1000
1575   - 0s - loss: 0.6712 -
      mean_absolute_error: 0.5812 - val_loss
      : 19.0774 - val_mean_absolute_error: 2
      .6885
1576 Epoch 700/1000
1577   - 0s - loss: 0.9085 -
      mean_absolute_error: 0.6580 - val_loss
      : 16.3998 - val_mean_absolute_error: 2
      .5516
1578
1579 Epoch 00700: val_mean_absolute_error
```

```
1579 did not improve from 2.27144
1580 Epoch 701/1000
1581   - 0s - loss: 0.7532 -
      mean_absolute_error: 0.6121 - val_loss
      : 16.7801 - val_mean_absolute_error: 2
      .6146
1582 Epoch 702/1000
1583   - 0s - loss: 0.7975 -
      mean_absolute_error: 0.6332 - val_loss
      : 16.7768 - val_mean_absolute_error: 2
      .6081
1584 Epoch 703/1000
1585   - 0s - loss: 0.7893 -
      mean_absolute_error: 0.6337 - val_loss
      : 16.4229 - val_mean_absolute_error: 2
      .5773
1586 Epoch 704/1000
1587   - 0s - loss: 0.7769 -
      mean_absolute_error: 0.6266 - val_loss
      : 17.3125 - val_mean_absolute_error: 2
      .6020
1588 Epoch 705/1000
1589   - 0s - loss: 0.6858 -
      mean_absolute_error: 0.6162 - val_loss
```



```
1589 : 18.6678 - val_mean_absolute_error: 2
      .6956
1590 Epoch 706/1000
1591   - 0s - loss: 0.8224 -
      mean_absolute_error: 0.6391 - val_loss
      : 16.8587 - val_mean_absolute_error: 2
      .6200
1592 Epoch 707/1000
1593   - 0s - loss: 0.7393 -
      mean_absolute_error: 0.6120 - val_loss
      : 15.8576 - val_mean_absolute_error: 2
      .5421
1594 Epoch 708/1000
1595   - 0s - loss: 0.7757 -
      mean_absolute_error: 0.6229 - val_loss
      : 18.2122 - val_mean_absolute_error: 2
      .7240
1596 Epoch 709/1000
1597   - 0s - loss: 0.7117 -
      mean_absolute_error: 0.5731 - val_loss
      : 15.5636 - val_mean_absolute_error: 2
      .5446
1598 Epoch 710/1000
1599   - 0s - loss: 0.7261 -
```

```
1599 mean_absolute_error: 0.6101 - val_loss
    : 16.8446 - val_mean_absolute_error: 2
    .5144
```

```
1600
```

```
1601 Epoch 00710: val_mean_absolute_error
    did not improve from 2.27144
```

```
1602 Epoch 711/1000
```

```
1603   - 0s - loss: 1.0531 -
    mean_absolute_error: 0.7005 - val_loss
    : 17.5844 - val_mean_absolute_error: 2
    .6294
```

```
1604 Epoch 712/1000
```

```
1605   - 0s - loss: 0.7688 -
    mean_absolute_error: 0.6302 - val_loss
    : 17.1261 - val_mean_absolute_error: 2
    .4566
```

```
1606 Epoch 713/1000
```

```
1607   - 0s - loss: 0.7392 -
    mean_absolute_error: 0.6086 - val_loss
    : 16.9228 - val_mean_absolute_error: 2
    .6352
```

```
1608 Epoch 714/1000
```

```
1609   - 0s - loss: 0.8181 -
    mean_absolute_error: 0.6310 - val_loss
```

```
1609 : 17.2299 - val_mean_absolute_error: 2
      .6107
1610 Epoch 715/1000
1611   - 0s - loss: 0.7108 -
      mean_absolute_error: 0.5989 - val_loss
      : 17.7318 - val_mean_absolute_error: 2
      .5366
1612 Epoch 716/1000
1613   - 0s - loss: 0.7416 -
      mean_absolute_error: 0.6168 - val_loss
      : 19.6693 - val_mean_absolute_error: 2
      .8280
1614 Epoch 717/1000
1615   - 0s - loss: 0.9304 -
      mean_absolute_error: 0.6757 - val_loss
      : 16.5108 - val_mean_absolute_error: 2
      .5569
1616 Epoch 718/1000
1617   - 0s - loss: 0.8389 -
      mean_absolute_error: 0.6329 - val_loss
      : 18.3674 - val_mean_absolute_error: 2
      .6212
1618 Epoch 719/1000
1619   - 0s - loss: 0.6647 -
```

```
1619 mean_absolute_error: 0.5676 - val_loss
    : 18.6235 - val_mean_absolute_error: 2
    .6613
1620 Epoch 720/1000
1621   - 0s - loss: 0.6951 -
    mean_absolute_error: 0.5676 - val_loss
    : 18.9381 - val_mean_absolute_error: 2
    .8467
1622
1623 Epoch 00720: val_mean_absolute_error
    did not improve from 2.27144
1624 Epoch 721/1000
1625   - 0s - loss: 0.8122 -
    mean_absolute_error: 0.6296 - val_loss
    : 18.3186 - val_mean_absolute_error: 2
    .6028
1626 Epoch 722/1000
1627   - 0s - loss: 0.7494 -
    mean_absolute_error: 0.5996 - val_loss
    : 16.8541 - val_mean_absolute_error: 2
    .5186
1628 Epoch 723/1000
1629   - 0s - loss: 0.6972 -
    mean_absolute_error: 0.5989 - val_loss
```

```
1629 : 16.9694 - val_mean_absolute_error: 2
      .5130
1630 Epoch 724/1000
1631   - 0s - loss: 0.7974 -
      mean_absolute_error: 0.6354 - val_loss
      : 18.2419 - val_mean_absolute_error: 2
      .7405
1632 Epoch 725/1000
1633   - 0s - loss: 0.7472 -
      mean_absolute_error: 0.6117 - val_loss
      : 16.3438 - val_mean_absolute_error: 2
      .6620
1634 Epoch 726/1000
1635   - 0s - loss: 0.8562 -
      mean_absolute_error: 0.6758 - val_loss
      : 17.1545 - val_mean_absolute_error: 2
      .6293
1636 Epoch 727/1000
1637   - 0s - loss: 0.7223 -
      mean_absolute_error: 0.5743 - val_loss
      : 19.4523 - val_mean_absolute_error: 2
      .7605
1638 Epoch 728/1000
1639   - 0s - loss: 0.7094 -
```

```
1639 mean_absolute_error: 0.6187 - val_loss
    : 17.1750 - val_mean_absolute_error: 2
    .6337
1640 Epoch 729/1000
1641   - 0s - loss: 0.7873 -
    mean_absolute_error: 0.6422 - val_loss
    : 17.6018 - val_mean_absolute_error: 2
    .6759
1642 Epoch 730/1000
1643   - 0s - loss: 0.7277 -
    mean_absolute_error: 0.5919 - val_loss
    : 18.0690 - val_mean_absolute_error: 2
    .6473
1644
1645 Epoch 00730: val_mean_absolute_error
    did not improve from 2.27144
1646 Epoch 731/1000
1647   - 0s - loss: 0.6474 -
    mean_absolute_error: 0.5873 - val_loss
    : 17.0064 - val_mean_absolute_error: 2
    .5759
1648 Epoch 732/1000
1649   - 0s - loss: 0.8355 -
    mean_absolute_error: 0.6489 - val_loss
```

```
1649 : 18.6150 - val_mean_absolute_error: 2
      .7340
1650 Epoch 733/1000
1651   - 0s - loss: 0.8194 -
      mean_absolute_error: 0.6417 - val_loss
      : 16.9385 - val_mean_absolute_error: 2
      .6268
1652 Epoch 734/1000
1653   - 0s - loss: 0.6965 -
      mean_absolute_error: 0.5972 - val_loss
      : 17.8163 - val_mean_absolute_error: 2
      .7852
1654 Epoch 735/1000
1655   - 0s - loss: 0.8001 -
      mean_absolute_error: 0.6227 - val_loss
      : 17.9528 - val_mean_absolute_error: 2
      .5908
1656 Epoch 736/1000
1657   - 0s - loss: 0.7784 -
      mean_absolute_error: 0.6378 - val_loss
      : 16.2633 - val_mean_absolute_error: 2
      .5309
1658 Epoch 737/1000
1659   - 0s - loss: 0.7827 -
```

```
1659 mean_absolute_error: 0.6370 - val_loss
    : 16.2917 - val_mean_absolute_error: 2
    .5499
1660 Epoch 738/1000
1661   - 0s - loss: 0.8188 -
    mean_absolute_error: 0.6588 - val_loss
    : 16.1290 - val_mean_absolute_error: 2
    .5913
1662 Epoch 739/1000
1663   - 0s - loss: 0.7995 -
    mean_absolute_error: 0.6237 - val_loss
    : 17.3990 - val_mean_absolute_error: 2
    .7331
1664 Epoch 740/1000
1665   - 0s - loss: 0.7897 -
    mean_absolute_error: 0.6501 - val_loss
    : 20.3916 - val_mean_absolute_error: 2
    .8002
1666
1667 Epoch 00740: val_mean_absolute_error
    did not improve from 2.27144
1668 Epoch 741/1000
1669   - 0s - loss: 0.7439 -
    mean_absolute_error: 0.6115 - val_loss
```



```
1669 : 17.3155 - val_mean_absolute_error: 2
      .5669
1670 Epoch 742/1000
1671   - 0s - loss: 0.6939 -
      mean_absolute_error: 0.5928 - val_loss
      : 17.1319 - val_mean_absolute_error: 2
      .6007
1672 Epoch 743/1000
1673   - 0s - loss: 0.7083 -
      mean_absolute_error: 0.5999 - val_loss
      : 17.4257 - val_mean_absolute_error: 2
      .6299
1674 Epoch 744/1000
1675   - 0s - loss: 0.8156 -
      mean_absolute_error: 0.6476 - val_loss
      : 16.9408 - val_mean_absolute_error: 2
      .6471
1676 Epoch 745/1000
1677   - 0s - loss: 0.8064 -
      mean_absolute_error: 0.6406 - val_loss
      : 18.0975 - val_mean_absolute_error: 2
      .7226
1678 Epoch 746/1000
1679   - 0s - loss: 0.7272 -
```

```
1679 mean_absolute_error: 0.5971 - val_loss
    : 16.7850 - val_mean_absolute_error: 2
    .6362
1680 Epoch 747/1000
1681   - 0s - loss: 0.7764 -
    mean_absolute_error: 0.6301 - val_loss
    : 16.7757 - val_mean_absolute_error: 2
    .6750
1682 Epoch 748/1000
1683   - 0s - loss: 0.7491 -
    mean_absolute_error: 0.6118 - val_loss
    : 16.2903 - val_mean_absolute_error: 2
    .6573
1684 Epoch 749/1000
1685   - 0s - loss: 0.7299 -
    mean_absolute_error: 0.6189 - val_loss
    : 16.8824 - val_mean_absolute_error: 2
    .5635
1686 Epoch 750/1000
1687   - 0s - loss: 0.7169 -
    mean_absolute_error: 0.6193 - val_loss
    : 17.8555 - val_mean_absolute_error: 2
    .6250
1688
```

```
1689 Epoch 00750: val_mean_absolute_error
    did not improve from 2.27144
1690 Epoch 751/1000
1691   - 0s - loss: 0.9575 -
    mean_absolute_error: 0.6758 - val_loss
    : 17.4426 - val_mean_absolute_error: 2
    .6064
1692 Epoch 752/1000
1693   - 0s - loss: 0.7031 -
    mean_absolute_error: 0.5749 - val_loss
    : 18.4329 - val_mean_absolute_error: 2
    .6442
1694 Epoch 753/1000
1695   - 0s - loss: 0.7239 -
    mean_absolute_error: 0.5601 - val_loss
    : 18.5972 - val_mean_absolute_error: 2
    .7028
1696 Epoch 754/1000
1697   - 0s - loss: 0.7589 -
    mean_absolute_error: 0.6723 - val_loss
    : 17.6675 - val_mean_absolute_error: 2
    .5796
1698 Epoch 755/1000
1699   - 0s - loss: 0.8160 -
```

```
1699 mean_absolute_error: 0.6155 - val_loss
    : 18.1118 - val_mean_absolute_error: 2
    .7181
1700 Epoch 756/1000
1701   - 0s - loss: 0.6158 -
    mean_absolute_error: 0.5615 - val_loss
    : 17.8072 - val_mean_absolute_error: 2
    .6187
1702 Epoch 757/1000
1703   - 0s - loss: 0.7295 -
    mean_absolute_error: 0.6274 - val_loss
    : 17.8192 - val_mean_absolute_error: 2
    .6217
1704 Epoch 758/1000
1705   - 0s - loss: 0.6903 -
    mean_absolute_error: 0.5877 - val_loss
    : 20.1838 - val_mean_absolute_error: 2
    .8880
1706 Epoch 759/1000
1707   - 0s - loss: 0.7083 -
    mean_absolute_error: 0.6087 - val_loss
    : 17.0582 - val_mean_absolute_error: 2
    .6112
1708 Epoch 760/1000
```

```
1709 - 0s - loss: 0.7451 -  
mean_absolute_error: 0.6115 - val_loss  
: 16.4079 - val_mean_absolute_error: 2  
.7523
```

```
1710
```

```
1711 Epoch 00760: val_mean_absolute_error  
did not improve from 2.27144
```

```
1712 Epoch 761/1000
```

```
1713 - 0s - loss: 0.7417 -  
mean_absolute_error: 0.5896 - val_loss  
: 16.5733 - val_mean_absolute_error: 2  
.6236
```

```
1714 Epoch 762/1000
```

```
1715 - 0s - loss: 0.7086 -  
mean_absolute_error: 0.5901 - val_loss  
: 17.8493 - val_mean_absolute_error: 2  
.6265
```

```
1716 Epoch 763/1000
```

```
1717 - 0s - loss: 0.9292 -  
mean_absolute_error: 0.7079 - val_loss  
: 15.5022 - val_mean_absolute_error: 2  
.5667
```

```
1718 Epoch 764/1000
```

```
1719 - 0s - loss: 0.7277 -
```

```
1719 mean_absolute_error: 0.5985 - val_loss
    : 18.6326 - val_mean_absolute_error: 2
    .6912
1720 Epoch 765/1000
1721   - 0s - loss: 0.7144 -
    mean_absolute_error: 0.6071 - val_loss
    : 16.8879 - val_mean_absolute_error: 2
    .5764
1722 Epoch 766/1000
1723   - 0s - loss: 0.6613 -
    mean_absolute_error: 0.5591 - val_loss
    : 16.6653 - val_mean_absolute_error: 2
    .6258
1724 Epoch 767/1000
1725   - 0s - loss: 0.6948 -
    mean_absolute_error: 0.6149 - val_loss
    : 16.7064 - val_mean_absolute_error: 2
    .5653
1726 Epoch 768/1000
1727   - 0s - loss: 0.7462 -
    mean_absolute_error: 0.6122 - val_loss
    : 16.7036 - val_mean_absolute_error: 2
    .6150
1728 Epoch 769/1000
```

```
1729 - 0s - loss: 0.7490 -  
      mean_absolute_error: 0.5967 - val_loss  
      : 17.2012 - val_mean_absolute_error: 2  
      .6451  
1730 Epoch 770/1000  
1731 - 0s - loss: 0.6771 -  
      mean_absolute_error: 0.5697 - val_loss  
      : 16.9905 - val_mean_absolute_error: 2  
      .7395  
1732  
1733 Epoch 00770: val_mean_absolute_error  
      did not improve from 2.27144  
1734 Epoch 771/1000  
1735 - 0s - loss: 0.8158 -  
      mean_absolute_error: 0.6420 - val_loss  
      : 17.5893 - val_mean_absolute_error: 2  
      .5477  
1736 Epoch 772/1000  
1737 - 0s - loss: 0.7131 -  
      mean_absolute_error: 0.5839 - val_loss  
      : 22.9193 - val_mean_absolute_error: 3  
      .0257  
1738 Epoch 773/1000  
1739 - 0s - loss: 0.7829 -
```

```
1739 mean_absolute_error: 0.6002 - val_loss
    : 16.6284 - val_mean_absolute_error: 2
    .5746
1740 Epoch 774/1000
1741   - 0s - loss: 0.5890 -
    mean_absolute_error: 0.5472 - val_loss
    : 19.5369 - val_mean_absolute_error: 2
    .9356
1742 Epoch 775/1000
1743   - 0s - loss: 0.8018 -
    mean_absolute_error: 0.6333 - val_loss
    : 18.9765 - val_mean_absolute_error: 2
    .7125
1744 Epoch 776/1000
1745   - 0s - loss: 0.6057 -
    mean_absolute_error: 0.5396 - val_loss
    : 17.4108 - val_mean_absolute_error: 2
    .6144
1746 Epoch 777/1000
1747   - 0s - loss: 0.8453 -
    mean_absolute_error: 0.6665 - val_loss
    : 16.8912 - val_mean_absolute_error: 2
    .6152
1748 Epoch 778/1000
```



```
1749 - 0s - loss: 0.8163 -  
      mean_absolute_error: 0.6181 - val_loss  
      : 19.0723 - val_mean_absolute_error: 2  
      .6615  
1750 Epoch 779/1000  
1751 - 0s - loss: 0.6996 -  
      mean_absolute_error: 0.5819 - val_loss  
      : 16.4822 - val_mean_absolute_error: 2  
      .6572  
1752 Epoch 780/1000  
1753 - 0s - loss: 0.7836 -  
      mean_absolute_error: 0.6148 - val_loss  
      : 17.0120 - val_mean_absolute_error: 2  
      .5811  
1754  
1755 Epoch 00780: val_mean_absolute_error  
      did not improve from 2.27144  
1756 Epoch 781/1000  
1757 - 0s - loss: 0.7281 -  
      mean_absolute_error: 0.6011 - val_loss  
      : 17.8492 - val_mean_absolute_error: 2  
      .7189  
1758 Epoch 782/1000  
1759 - 0s - loss: 0.7470 -
```

```
1759 mean_absolute_error: 0.5841 - val_loss
    : 16.9607 - val_mean_absolute_error: 2
    .6373
1760 Epoch 783/1000
1761   - 0s - loss: 0.5916 -
    mean_absolute_error: 0.5330 - val_loss
    : 17.3220 - val_mean_absolute_error: 2
    .5929
1762 Epoch 784/1000
1763   - 0s - loss: 0.8891 -
    mean_absolute_error: 0.6590 - val_loss
    : 16.0670 - val_mean_absolute_error: 2
    .5495
1764 Epoch 785/1000
1765   - 0s - loss: 0.6215 -
    mean_absolute_error: 0.5635 - val_loss
    : 17.9722 - val_mean_absolute_error: 2
    .5425
1766 Epoch 786/1000
1767   - 0s - loss: 0.6921 -
    mean_absolute_error: 0.5817 - val_loss
    : 16.8388 - val_mean_absolute_error: 2
    .6124
1768 Epoch 787/1000
```

```
1769 - 0s - loss: 0.6485 -  
mean_absolute_error: 0.5708 - val_loss  
: 17.7364 - val_mean_absolute_error: 2  
.7392  
1770 Epoch 788/1000  
1771 - 0s - loss: 0.7143 -  
mean_absolute_error: 0.5831 - val_loss  
: 17.4663 - val_mean_absolute_error: 2  
.7673  
1772 Epoch 789/1000  
1773 - 0s - loss: 0.8299 -  
mean_absolute_error: 0.6396 - val_loss  
: 18.4973 - val_mean_absolute_error: 2  
.6561  
1774 Epoch 790/1000  
1775 - 0s - loss: 0.7249 -  
mean_absolute_error: 0.6064 - val_loss  
: 16.7915 - val_mean_absolute_error: 2  
.6462  
1776  
1777 Epoch 00790: val_mean_absolute_error  
did not improve from 2.27144  
1778 Epoch 791/1000  
1779 - 0s - loss: 0.6576 -
```

```
1779 mean_absolute_error: 0.5904 - val_loss
    : 17.7748 - val_mean_absolute_error: 2
    .7466
1780 Epoch 792/1000
1781   - 0s - loss: 0.6689 -
    mean_absolute_error: 0.5801 - val_loss
    : 19.3295 - val_mean_absolute_error: 2
    .7262
1782 Epoch 793/1000
1783   - 0s - loss: 0.7359 -
    mean_absolute_error: 0.5868 - val_loss
    : 16.4519 - val_mean_absolute_error: 2
    .5368
1784 Epoch 794/1000
1785   - 0s - loss: 0.6732 -
    mean_absolute_error: 0.5616 - val_loss
    : 19.5531 - val_mean_absolute_error: 2
    .6701
1786 Epoch 795/1000
1787   - 0s - loss: 0.8393 -
    mean_absolute_error: 0.6218 - val_loss
    : 17.3643 - val_mean_absolute_error: 2
    .6095
1788 Epoch 796/1000
```

```
1789 - 0s - loss: 0.7284 -  
      mean_absolute_error: 0.5893 - val_loss  
      : 17.6125 - val_mean_absolute_error: 2  
      .6595  
1790 Epoch 797/1000  
1791 - 0s - loss: 0.7927 -  
      mean_absolute_error: 0.6453 - val_loss  
      : 18.6986 - val_mean_absolute_error: 2  
      .9988  
1792 Epoch 798/1000  
1793 - 0s - loss: 0.5843 -  
      mean_absolute_error: 0.5386 - val_loss  
      : 16.5387 - val_mean_absolute_error: 2  
      .5945  
1794 Epoch 799/1000  
1795 - 0s - loss: 0.6341 -  
      mean_absolute_error: 0.5875 - val_loss  
      : 18.1591 - val_mean_absolute_error: 2  
      .7643  
1796 Epoch 800/1000  
1797 - 0s - loss: 0.7819 -  
      mean_absolute_error: 0.6394 - val_loss  
      : 17.7010 - val_mean_absolute_error: 2  
      .6393
```

1798

1799 Epoch 00800: val\_mean\_absolute\_error  
did not improve from 2.27144

1800 Epoch 801/1000

1801 - 0s - loss: 0.6194 -  
mean\_absolute\_error: 0.5749 - val\_loss  
: 17.9042 - val\_mean\_absolute\_error: 2  
.7058

1802 Epoch 802/1000

1803 - 0s - loss: 0.8296 -  
mean\_absolute\_error: 0.6580 - val\_loss  
: 18.7405 - val\_mean\_absolute\_error: 2  
.7878

1804 Epoch 803/1000

1805 - 0s - loss: 0.6314 -  
mean\_absolute\_error: 0.5529 - val\_loss  
: 16.5630 - val\_mean\_absolute\_error: 2  
.6174

1806 Epoch 804/1000

1807 - 0s - loss: 0.6611 -  
mean\_absolute\_error: 0.5902 - val\_loss  
: 17.6396 - val\_mean\_absolute\_error: 2  
.7154

1808 Epoch 805/1000

```
1809 - 0s - loss: 0.6343 -  
      mean_absolute_error: 0.5590 - val_loss  
      : 19.1421 - val_mean_absolute_error: 2  
      .7330  
1810 Epoch 806/1000  
1811 - 0s - loss: 0.8301 -  
      mean_absolute_error: 0.6609 - val_loss  
      : 19.4503 - val_mean_absolute_error: 2  
      .8190  
1812 Epoch 807/1000  
1813 - 0s - loss: 0.6737 -  
      mean_absolute_error: 0.5847 - val_loss  
      : 18.6335 - val_mean_absolute_error: 2  
      .8752  
1814 Epoch 808/1000  
1815 - 0s - loss: 0.7908 -  
      mean_absolute_error: 0.6274 - val_loss  
      : 18.1931 - val_mean_absolute_error: 2  
      .6245  
1816 Epoch 809/1000  
1817 - 0s - loss: 0.5928 -  
      mean_absolute_error: 0.5514 - val_loss  
      : 18.3472 - val_mean_absolute_error: 2  
      .6672
```

```
1818 Epoch 810/1000
1819   - 0s - loss: 0.7153 -
      mean_absolute_error: 0.6086 - val_loss
      : 17.3597 - val_mean_absolute_error: 2
      .6257
1820
1821 Epoch 00810: val_mean_absolute_error
      did not improve from 2.27144
1822 Epoch 811/1000
1823   - 0s - loss: 0.6134 -
      mean_absolute_error: 0.5324 - val_loss
      : 19.1126 - val_mean_absolute_error: 3
      .1097
1824 Epoch 812/1000
1825   - 0s - loss: 0.7696 -
      mean_absolute_error: 0.6162 - val_loss
      : 17.3066 - val_mean_absolute_error: 2
      .6376
1826 Epoch 813/1000
1827   - 0s - loss: 0.6999 -
      mean_absolute_error: 0.5760 - val_loss
      : 18.5314 - val_mean_absolute_error: 2
      .7402
1828 Epoch 814/1000
```



```
1829 - 0s - loss: 0.6734 -  
      mean_absolute_error: 0.5780 - val_loss  
      : 16.6117 - val_mean_absolute_error: 2  
      .7389  
1830 Epoch 815/1000  
1831 - 0s - loss: 0.6774 -  
      mean_absolute_error: 0.5984 - val_loss  
      : 16.9005 - val_mean_absolute_error: 2  
      .6227  
1832 Epoch 816/1000  
1833 - 0s - loss: 0.7179 -  
      mean_absolute_error: 0.6189 - val_loss  
      : 19.1896 - val_mean_absolute_error: 2  
      .7007  
1834 Epoch 817/1000  
1835 - 0s - loss: 0.7492 -  
      mean_absolute_error: 0.5728 - val_loss  
      : 18.9908 - val_mean_absolute_error: 2  
      .7317  
1836 Epoch 818/1000  
1837 - 0s - loss: 0.6717 -  
      mean_absolute_error: 0.5704 - val_loss  
      : 18.0647 - val_mean_absolute_error: 2  
      .6580
```

```
1838 Epoch 819/1000
1839   - 0s - loss: 0.6418 -
      mean_absolute_error: 0.5855 - val_loss
      : 17.7715 - val_mean_absolute_error: 2
      .8300
1840 Epoch 820/1000
1841   - 0s - loss: 0.5842 -
      mean_absolute_error: 0.5473 - val_loss
      : 17.1410 - val_mean_absolute_error: 2
      .5727
1842
1843 Epoch 00820: val_mean_absolute_error
      did not improve from 2.27144
1844 Epoch 821/1000
1845   - 0s - loss: 0.7181 -
      mean_absolute_error: 0.5920 - val_loss
      : 16.4478 - val_mean_absolute_error: 2
      .7056
1846 Epoch 822/1000
1847   - 0s - loss: 0.6301 -
      mean_absolute_error: 0.5383 - val_loss
      : 17.8634 - val_mean_absolute_error: 2
      .6949
1848 Epoch 823/1000
```

```
1849 - 0s - loss: 0.6524 -  
      mean_absolute_error: 0.5518 - val_loss  
      : 19.0994 - val_mean_absolute_error: 2  
      .8872  
1850 Epoch 824/1000  
1851 - 0s - loss: 0.6953 -  
      mean_absolute_error: 0.5910 - val_loss  
      : 17.0444 - val_mean_absolute_error: 2  
      .6896  
1852 Epoch 825/1000  
1853 - 0s - loss: 0.6781 -  
      mean_absolute_error: 0.5905 - val_loss  
      : 17.1570 - val_mean_absolute_error: 2  
      .7558  
1854 Epoch 826/1000  
1855 - 0s - loss: 0.6938 -  
      mean_absolute_error: 0.5905 - val_loss  
      : 17.8930 - val_mean_absolute_error: 2  
      .6294  
1856 Epoch 827/1000  
1857 - 0s - loss: 0.6347 -  
      mean_absolute_error: 0.5728 - val_loss  
      : 18.0950 - val_mean_absolute_error: 2  
      .8157
```

```
1858 Epoch 828/1000
1859   - 0s - loss: 0.7147 -
      mean_absolute_error: 0.5758 - val_loss
      : 17.1194 - val_mean_absolute_error: 2
      .5943
1860 Epoch 829/1000
1861   - 0s - loss: 0.6732 -
      mean_absolute_error: 0.5646 - val_loss
      : 18.2269 - val_mean_absolute_error: 2
      .9392
1862 Epoch 830/1000
1863   - 0s - loss: 0.7426 -
      mean_absolute_error: 0.6038 - val_loss
      : 17.0478 - val_mean_absolute_error: 2
      .7079
1864
1865 Epoch 00830: val_mean_absolute_error
      did not improve from 2.27144
1866 Epoch 831/1000
1867   - 0s - loss: 0.6475 -
      mean_absolute_error: 0.5678 - val_loss
      : 17.7047 - val_mean_absolute_error: 2
      .6541
1868 Epoch 832/1000
```

```
1869 - 0s - loss: 0.5896 -  
mean_absolute_error: 0.5266 - val_loss  
: 17.3404 - val_mean_absolute_error: 2  
.5745  
1870 Epoch 833/1000  
1871 - 0s - loss: 0.6847 -  
mean_absolute_error: 0.5871 - val_loss  
: 19.2234 - val_mean_absolute_error: 2  
.7757  
1872 Epoch 834/1000  
1873 - 0s - loss: 0.7168 -  
mean_absolute_error: 0.5976 - val_loss  
: 19.4590 - val_mean_absolute_error: 2  
.7088  
1874 Epoch 835/1000  
1875 - 0s - loss: 0.6823 -  
mean_absolute_error: 0.5796 - val_loss  
: 16.4076 - val_mean_absolute_error: 2  
.6801  
1876 Epoch 836/1000  
1877 - 0s - loss: 0.7256 -  
mean_absolute_error: 0.5924 - val_loss  
: 18.5859 - val_mean_absolute_error: 2  
.6406
```

```
1878 Epoch 837/1000
1879   - 0s - loss: 0.6830 -
      mean_absolute_error: 0.5577 - val_loss
      : 17.2043 - val_mean_absolute_error: 2
      .6231
1880 Epoch 838/1000
1881   - 0s - loss: 0.6484 -
      mean_absolute_error: 0.5753 - val_loss
      : 16.2275 - val_mean_absolute_error: 2
      .6670
1882 Epoch 839/1000
1883   - 0s - loss: 0.5479 -
      mean_absolute_error: 0.5191 - val_loss
      : 18.0914 - val_mean_absolute_error: 2
      .6540
1884 Epoch 840/1000
1885   - 0s - loss: 0.7040 -
      mean_absolute_error: 0.5632 - val_loss
      : 17.4735 - val_mean_absolute_error: 2
      .7147
1886
1887 Epoch 00840: val_mean_absolute_error
      did not improve from 2.27144
1888 Epoch 841/1000
```

```
1889 - 0s - loss: 0.6006 -  
      mean_absolute_error: 0.5554 - val_loss  
      : 19.8462 - val_mean_absolute_error: 2  
      .8161  
1890 Epoch 842/1000  
1891 - 0s - loss: 0.5980 -  
      mean_absolute_error: 0.5617 - val_loss  
      : 19.7856 - val_mean_absolute_error: 2  
      .7752  
1892 Epoch 843/1000  
1893 - 0s - loss: 0.6339 -  
      mean_absolute_error: 0.5745 - val_loss  
      : 18.4695 - val_mean_absolute_error: 2  
      .6632  
1894 Epoch 844/1000  
1895 - 0s - loss: 0.7464 -  
      mean_absolute_error: 0.6195 - val_loss  
      : 17.7207 - val_mean_absolute_error: 2  
      .6405  
1896 Epoch 845/1000  
1897 - 0s - loss: 0.6098 -  
      mean_absolute_error: 0.5516 - val_loss  
      : 16.9370 - val_mean_absolute_error: 2  
      .6063
```

```
1898 Epoch 846/1000
1899   - 0s - loss: 0.6294 -
      mean_absolute_error: 0.5552 - val_loss
      : 18.0155 - val_mean_absolute_error: 2
      .6868
1900 Epoch 847/1000
1901   - 0s - loss: 0.6195 -
      mean_absolute_error: 0.5384 - val_loss
      : 17.0865 - val_mean_absolute_error: 2
      .6157
1902 Epoch 848/1000
1903   - 0s - loss: 0.6655 -
      mean_absolute_error: 0.5954 - val_loss
      : 18.3635 - val_mean_absolute_error: 2
      .6986
1904 Epoch 849/1000
1905   - 0s - loss: 0.6424 -
      mean_absolute_error: 0.5732 - val_loss
      : 18.6556 - val_mean_absolute_error: 2
      .6757
1906 Epoch 850/1000
1907   - 0s - loss: 0.8190 -
      mean_absolute_error: 0.6464 - val_loss
      : 17.8038 - val_mean_absolute_error: 2
```



1907 .6612

1908

1909 Epoch 00850: val\_mean\_absolute\_error  
did not improve from 2.27144

1910 Epoch 851/1000

1911 - 0s - loss: 0.6547 -  
mean\_absolute\_error: 0.5496 - val\_loss  
: 17.4259 - val\_mean\_absolute\_error: 2  
.6437

1912 Epoch 852/1000

1913 - 0s - loss: 0.6354 -  
mean\_absolute\_error: 0.5811 - val\_loss  
: 18.4067 - val\_mean\_absolute\_error: 2  
.7221

1914 Epoch 853/1000

1915 - 0s - loss: 0.6361 -  
mean\_absolute\_error: 0.5811 - val\_loss  
: 19.4700 - val\_mean\_absolute\_error: 2  
.7792

1916 Epoch 854/1000

1917 - 0s - loss: 0.6153 -  
mean\_absolute\_error: 0.5107 - val\_loss  
: 19.7147 - val\_mean\_absolute\_error: 2  
.8641

```
1918 Epoch 855/1000
1919   - 0s - loss: 0.5619 -
      mean_absolute_error: 0.5357 - val_loss
      : 18.5224 - val_mean_absolute_error: 2
      .6078
1920 Epoch 856/1000
1921   - 0s - loss: 0.7898 -
      mean_absolute_error: 0.6327 - val_loss
      : 17.2666 - val_mean_absolute_error: 2
      .6480
1922 Epoch 857/1000
1923   - 0s - loss: 0.5381 -
      mean_absolute_error: 0.5114 - val_loss
      : 18.7767 - val_mean_absolute_error: 2
      .6851
1924 Epoch 858/1000
1925   - 0s - loss: 0.6822 -
      mean_absolute_error: 0.5729 - val_loss
      : 17.3667 - val_mean_absolute_error: 2
      .5767
1926 Epoch 859/1000
1927   - 0s - loss: 0.6715 -
      mean_absolute_error: 0.5898 - val_loss
      : 17.8354 - val_mean_absolute_error: 2
```

```
1927 .8615
1928 Epoch 860/1000
1929 - 0s - loss: 0.7357 -
      mean_absolute_error: 0.6025 - val_loss
      : 17.5219 - val_mean_absolute_error: 2
      .6448
1930
1931 Epoch 00860: val_mean_absolute_error
      did not improve from 2.27144
1932 Epoch 861/1000
1933 - 0s - loss: 0.5748 -
      mean_absolute_error: 0.5314 - val_loss
      : 21.8805 - val_mean_absolute_error: 2
      .8593
1934 Epoch 862/1000
1935 - 0s - loss: 0.5946 -
      mean_absolute_error: 0.5556 - val_loss
      : 19.2000 - val_mean_absolute_error: 2
      .8783
1936 Epoch 863/1000
1937 - 0s - loss: 0.7418 -
      mean_absolute_error: 0.5948 - val_loss
      : 18.4738 - val_mean_absolute_error: 2
      .6065
```

```
1938 Epoch 864/1000
1939   - 0s - loss: 0.5575 -
      mean_absolute_error: 0.5099 - val_loss
      : 16.9985 - val_mean_absolute_error: 2
      .7814
1940 Epoch 865/1000
1941   - 0s - loss: 0.6794 -
      mean_absolute_error: 0.5632 - val_loss
      : 20.7610 - val_mean_absolute_error: 2
      .8798
1942 Epoch 866/1000
1943   - 0s - loss: 0.7201 -
      mean_absolute_error: 0.5818 - val_loss
      : 17.2579 - val_mean_absolute_error: 2
      .5587
1944 Epoch 867/1000
1945   - 0s - loss: 0.6262 -
      mean_absolute_error: 0.5808 - val_loss
      : 17.8172 - val_mean_absolute_error: 2
      .8179
1946 Epoch 868/1000
1947   - 0s - loss: 0.6734 -
      mean_absolute_error: 0.5673 - val_loss
      : 17.1254 - val_mean_absolute_error: 2
```

```
1947 .8089
1948 Epoch 869/1000
1949 - 0s - loss: 0.7607 -
      mean_absolute_error: 0.6091 - val_loss
      : 18.9604 - val_mean_absolute_error: 2
      .6839
1950 Epoch 870/1000
1951 - 0s - loss: 0.4991 -
      mean_absolute_error: 0.4941 - val_loss
      : 17.5212 - val_mean_absolute_error: 2
      .5717
1952
1953 Epoch 00870: val_mean_absolute_error
      did not improve from 2.27144
1954 Epoch 871/1000
1955 - 0s - loss: 0.6467 -
      mean_absolute_error: 0.5600 - val_loss
      : 20.1208 - val_mean_absolute_error: 2
      .7050
1956 Epoch 872/1000
1957 - 0s - loss: 0.6893 -
      mean_absolute_error: 0.6043 - val_loss
      : 17.9895 - val_mean_absolute_error: 2
      .6948
```

```
1958 Epoch 873/1000
1959   - 0s - loss: 0.6897 -
      mean_absolute_error: 0.5725 - val_loss
      : 17.7583 - val_mean_absolute_error: 2
      .6577
1960 Epoch 874/1000
1961   - 0s - loss: 0.6009 -
      mean_absolute_error: 0.5279 - val_loss
      : 16.7583 - val_mean_absolute_error: 2
      .6141
1962 Epoch 875/1000
1963   - 0s - loss: 0.6278 -
      mean_absolute_error: 0.5756 - val_loss
      : 16.8533 - val_mean_absolute_error: 2
      .6183
1964 Epoch 876/1000
1965   - 0s - loss: 0.5065 -
      mean_absolute_error: 0.5100 - val_loss
      : 17.3798 - val_mean_absolute_error: 2
      .5911
1966 Epoch 877/1000
1967   - 0s - loss: 0.5947 -
      mean_absolute_error: 0.5503 - val_loss
      : 17.5187 - val_mean_absolute_error: 2
```

```
1967 .6553
1968 Epoch 878/1000
1969 - 0s - loss: 0.7511 -
      mean_absolute_error: 0.6224 - val_loss
      : 17.2073 - val_mean_absolute_error: 2
      .6800
1970 Epoch 879/1000
1971 - 0s - loss: 0.6540 -
      mean_absolute_error: 0.5803 - val_loss
      : 18.3124 - val_mean_absolute_error: 2
      .6880
1972 Epoch 880/1000
1973 - 0s - loss: 0.6519 -
      mean_absolute_error: 0.5339 - val_loss
      : 20.0048 - val_mean_absolute_error: 2
      .8135
1974
1975 Epoch 00880: val_mean_absolute_error
      did not improve from 2.27144
1976 Epoch 881/1000
1977 - 0s - loss: 0.6056 -
      mean_absolute_error: 0.5708 - val_loss
      : 18.7690 - val_mean_absolute_error: 2
      .7084
```

```
1978 Epoch 882/1000
1979   - 0s - loss: 0.6721 -
      mean_absolute_error: 0.5892 - val_loss
      : 18.2669 - val_mean_absolute_error: 2
      .6606
1980 Epoch 883/1000
1981   - 0s - loss: 0.7241 -
      mean_absolute_error: 0.6034 - val_loss
      : 16.9276 - val_mean_absolute_error: 2
      .6299
1982 Epoch 884/1000
1983   - 0s - loss: 0.5931 -
      mean_absolute_error: 0.5362 - val_loss
      : 17.7364 - val_mean_absolute_error: 2
      .6554
1984 Epoch 885/1000
1985   - 0s - loss: 0.6209 -
      mean_absolute_error: 0.5496 - val_loss
      : 17.5554 - val_mean_absolute_error: 2
      .7415
1986 Epoch 886/1000
1987   - 0s - loss: 0.7041 -
      mean_absolute_error: 0.5717 - val_loss
      : 18.3488 - val_mean_absolute_error: 2
```



```
1987 .7362
1988 Epoch 887/1000
1989 - 0s - loss: 0.6524 -
      mean_absolute_error: 0.5670 - val_loss
      : 18.0760 - val_mean_absolute_error: 2
      .6569
1990 Epoch 888/1000
1991 - 0s - loss: 0.5962 -
      mean_absolute_error: 0.5491 - val_loss
      : 17.3052 - val_mean_absolute_error: 2
      .8321
1992 Epoch 889/1000
1993 - 0s - loss: 0.5346 -
      mean_absolute_error: 0.4941 - val_loss
      : 17.7903 - val_mean_absolute_error: 2
      .7542
1994 Epoch 890/1000
1995 - 0s - loss: 0.7451 -
      mean_absolute_error: 0.6162 - val_loss
      : 17.3095 - val_mean_absolute_error: 2
      .8587
1996
1997 Epoch 00890: val_mean_absolute_error
      did not improve from 2.27144
```

```
1998 Epoch 891/1000
1999   - 0s - loss: 0.6549 -
      mean_absolute_error: 0.5740 - val_loss
      : 18.0611 - val_mean_absolute_error: 2
      .6101
2000 Epoch 892/1000
2001   - 0s - loss: 0.6260 -
      mean_absolute_error: 0.5532 - val_loss
      : 19.0569 - val_mean_absolute_error: 2
      .7191
2002 Epoch 893/1000
2003   - 0s - loss: 0.5716 -
      mean_absolute_error: 0.5357 - val_loss
      : 17.3976 - val_mean_absolute_error: 2
      .6948
2004 Epoch 894/1000
2005   - 0s - loss: 0.6132 -
      mean_absolute_error: 0.5522 - val_loss
      : 19.6335 - val_mean_absolute_error: 3
      .0389
2006 Epoch 895/1000
2007   - 0s - loss: 0.6265 -
      mean_absolute_error: 0.5544 - val_loss
      : 19.9278 - val_mean_absolute_error: 2
```

```
2007 .8073
2008 Epoch 896/1000
2009 - 0s - loss: 0.6165 -
      mean_absolute_error: 0.5607 - val_loss
      : 17.2520 - val_mean_absolute_error: 2
      .6000
2010 Epoch 897/1000
2011 - 0s - loss: 0.6935 -
      mean_absolute_error: 0.6233 - val_loss
      : 19.3630 - val_mean_absolute_error: 2
      .8523
2012 Epoch 898/1000
2013 - 0s - loss: 0.5446 -
      mean_absolute_error: 0.5247 - val_loss
      : 16.8139 - val_mean_absolute_error: 2
      .6716
2014 Epoch 899/1000
2015 - 0s - loss: 0.6147 -
      mean_absolute_error: 0.5498 - val_loss
      : 16.7154 - val_mean_absolute_error: 2
      .6383
2016 Epoch 900/1000
2017 - 0s - loss: 0.6379 -
      mean_absolute_error: 0.5729 - val_loss
```

2017 : 18.3525 - val\_mean\_absolute\_error: 2  
.7249

2018

2019 Epoch 00900: val\_mean\_absolute\_error  
did not improve from 2.27144

2020 Epoch 901/1000

2021 - 0s - loss: 0.7431 -  
mean\_absolute\_error: 0.6130 - val\_loss  
: 17.9141 - val\_mean\_absolute\_error: 2  
.6769

2022 Epoch 902/1000

2023 - 0s - loss: 0.5400 -  
mean\_absolute\_error: 0.5089 - val\_loss  
: 19.5817 - val\_mean\_absolute\_error: 2  
.9284

2024 Epoch 903/1000

2025 - 0s - loss: 0.6774 -  
mean\_absolute\_error: 0.5930 - val\_loss  
: 17.9294 - val\_mean\_absolute\_error: 2  
.6526

2026 Epoch 904/1000

2027 - 0s - loss: 0.6175 -  
mean\_absolute\_error: 0.5533 - val\_loss  
: 17.1573 - val\_mean\_absolute\_error: 2

```
2027 .6231
2028 Epoch 905/1000
2029 - 0s - loss: 0.6403 -
mean_absolute_error: 0.5558 - val_loss
: 17.3939 - val_mean_absolute_error: 2
.5975
2030 Epoch 906/1000
2031 - 0s - loss: 0.6321 -
mean_absolute_error: 0.5583 - val_loss
: 17.3864 - val_mean_absolute_error: 2
.7273
2032 Epoch 907/1000
2033 - 0s - loss: 0.5271 -
mean_absolute_error: 0.5293 - val_loss
: 17.0845 - val_mean_absolute_error: 2
.7553
2034 Epoch 908/1000
2035 - 0s - loss: 0.6307 -
mean_absolute_error: 0.5887 - val_loss
: 17.6463 - val_mean_absolute_error: 2
.7239
2036 Epoch 909/1000
2037 - 0s - loss: 0.5413 -
mean_absolute_error: 0.5082 - val_loss
```

```
2037 : 20.8937 - val_mean_absolute_error: 2
      .9032
2038 Epoch 910/1000
2039   - 0s - loss: 0.6100 -
      mean_absolute_error: 0.5170 - val_loss
      : 17.6127 - val_mean_absolute_error: 2
      .6298
2040
2041 Epoch 00910: val_mean_absolute_error
      did not improve from 2.27144
2042 Epoch 911/1000
2043   - 0s - loss: 0.6672 -
      mean_absolute_error: 0.5756 - val_loss
      : 17.5524 - val_mean_absolute_error: 2
      .6041
2044 Epoch 912/1000
2045   - 0s - loss: 0.5814 -
      mean_absolute_error: 0.5297 - val_loss
      : 18.9615 - val_mean_absolute_error: 2
      .7134
2046 Epoch 913/1000
2047   - 0s - loss: 0.5032 -
      mean_absolute_error: 0.5030 - val_loss
      : 17.9011 - val_mean_absolute_error: 2
```

```
2047 .8349
2048 Epoch 914/1000
2049 - 0s - loss: 0.6695 -
mean_absolute_error: 0.5830 - val_loss
: 16.9394 - val_mean_absolute_error: 2
.6878
2050 Epoch 915/1000
2051 - 0s - loss: 0.5218 -
mean_absolute_error: 0.5166 - val_loss
: 17.7153 - val_mean_absolute_error: 2
.7728
2052 Epoch 916/1000
2053 - 0s - loss: 0.6045 -
mean_absolute_error: 0.5715 - val_loss
: 19.6687 - val_mean_absolute_error: 3
.0238
2054 Epoch 917/1000
2055 - 0s - loss: 0.7216 -
mean_absolute_error: 0.6103 - val_loss
: 16.6996 - val_mean_absolute_error: 2
.6261
2056 Epoch 918/1000
2057 - 0s - loss: 0.6146 -
mean_absolute_error: 0.5644 - val_loss
```

```
2057 : 19.5262 - val_mean_absolute_error: 2
      .7472
2058 Epoch 919/1000
2059   - 0s - loss: 0.5114 -
      mean_absolute_error: 0.5129 - val_loss
      : 18.4855 - val_mean_absolute_error: 2
      .6505
2060 Epoch 920/1000
2061   - 0s - loss: 0.6119 -
      mean_absolute_error: 0.5642 - val_loss
      : 19.1170 - val_mean_absolute_error: 2
      .7704
2062
2063 Epoch 00920: val_mean_absolute_error
      did not improve from 2.27144
2064 Epoch 921/1000
2065   - 0s - loss: 0.5659 -
      mean_absolute_error: 0.5179 - val_loss
      : 21.2922 - val_mean_absolute_error: 3
      .1737
2066 Epoch 922/1000
2067   - 0s - loss: 0.6796 -
      mean_absolute_error: 0.5828 - val_loss
      : 17.9689 - val_mean_absolute_error: 2
```



```
2067 .6350
2068 Epoch 923/1000
2069 - 0s - loss: 0.6663 -
mean_absolute_error: 0.5572 - val_loss
: 17.8886 - val_mean_absolute_error: 2
.6865
2070 Epoch 924/1000
2071 - 0s - loss: 0.5139 -
mean_absolute_error: 0.5010 - val_loss
: 18.1917 - val_mean_absolute_error: 2
.6860
2072 Epoch 925/1000
2073 - 0s - loss: 0.6755 -
mean_absolute_error: 0.5746 - val_loss
: 17.5988 - val_mean_absolute_error: 2
.6756
2074 Epoch 926/1000
2075 - 0s - loss: 0.5930 -
mean_absolute_error: 0.5444 - val_loss
: 21.4883 - val_mean_absolute_error: 3
.0035
2076 Epoch 927/1000
2077 - 0s - loss: 0.6177 -
mean_absolute_error: 0.5206 - val_loss
```

```
2077 : 17.2307 - val_mean_absolute_error: 2
      .7055
2078 Epoch 928/1000
2079   - 0s - loss: 0.5093 -
      mean_absolute_error: 0.5111 - val_loss
      : 17.5364 - val_mean_absolute_error: 2
      .6317
2080 Epoch 929/1000
2081   - 0s - loss: 0.7637 -
      mean_absolute_error: 0.6035 - val_loss
      : 18.9612 - val_mean_absolute_error: 2
      .7995
2082 Epoch 930/1000
2083   - 0s - loss: 0.5742 -
      mean_absolute_error: 0.5354 - val_loss
      : 19.5757 - val_mean_absolute_error: 2
      .6916
2084
2085 Epoch 00930: val_mean_absolute_error
      did not improve from 2.27144
2086 Epoch 931/1000
2087   - 0s - loss: 0.5848 -
      mean_absolute_error: 0.5176 - val_loss
      : 17.6405 - val_mean_absolute_error: 2
```

```
2087 .7177
2088 Epoch 932/1000
2089 - 0s - loss: 0.6046 -
      mean_absolute_error: 0.5536 - val_loss
      : 17.5632 - val_mean_absolute_error: 2
      .7807
2090 Epoch 933/1000
2091 - 0s - loss: 0.5398 -
      mean_absolute_error: 0.5372 - val_loss
      : 18.3254 - val_mean_absolute_error: 2
      .9989
2092 Epoch 934/1000
2093 - 0s - loss: 0.6545 -
      mean_absolute_error: 0.5174 - val_loss
      : 18.6268 - val_mean_absolute_error: 2
      .7750
2094 Epoch 935/1000
2095 - 0s - loss: 0.7344 -
      mean_absolute_error: 0.6200 - val_loss
      : 19.9260 - val_mean_absolute_error: 2
      .8483
2096 Epoch 936/1000
2097 - 0s - loss: 0.5303 -
      mean_absolute_error: 0.5114 - val_loss
```

```
2097 : 19.1362 - val_mean_absolute_error: 2
      .6676
2098 Epoch 937/1000
2099   - 0s - loss: 0.5498 -
      mean_absolute_error: 0.5318 - val_loss
      : 18.0569 - val_mean_absolute_error: 2
      .7170
2100 Epoch 938/1000
2101   - 0s - loss: 0.5827 -
      mean_absolute_error: 0.5395 - val_loss
      : 19.4828 - val_mean_absolute_error: 2
      .6399
2102 Epoch 939/1000
2103   - 0s - loss: 0.5845 -
      mean_absolute_error: 0.5473 - val_loss
      : 19.2457 - val_mean_absolute_error: 2
      .6471
2104 Epoch 940/1000
2105   - 0s - loss: 0.6077 -
      mean_absolute_error: 0.5164 - val_loss
      : 18.8124 - val_mean_absolute_error: 2
      .9310
2106
2107 Epoch 00940: val_mean_absolute_error
```

```
2107 did not improve from 2.27144
2108 Epoch 941/1000
2109   - 0s - loss: 0.6676 -
      mean_absolute_error: 0.5768 - val_loss
      : 19.5373 - val_mean_absolute_error: 2
      .7341
2110 Epoch 942/1000
2111   - 0s - loss: 0.6251 -
      mean_absolute_error: 0.5645 - val_loss
      : 17.4923 - val_mean_absolute_error: 2
      .6643
2112 Epoch 943/1000
2113   - 0s - loss: 0.5175 -
      mean_absolute_error: 0.4965 - val_loss
      : 18.2691 - val_mean_absolute_error: 2
      .7208
2114 Epoch 944/1000
2115   - 0s - loss: 0.6411 -
      mean_absolute_error: 0.5924 - val_loss
      : 17.8400 - val_mean_absolute_error: 2
      .6714
2116 Epoch 945/1000
2117   - 0s - loss: 0.5386 -
      mean_absolute_error: 0.5416 - val_loss
```

```
2117 : 18.2377 - val_mean_absolute_error: 2
      .9831
2118 Epoch 946/1000
2119 - 0s - loss: 0.5594 -
      mean_absolute_error: 0.5183 - val_loss
      : 19.3815 - val_mean_absolute_error: 2
      .7785
2120 Epoch 947/1000
2121 - 0s - loss: 0.6067 -
      mean_absolute_error: 0.5555 - val_loss
      : 18.3595 - val_mean_absolute_error: 2
      .8527
2122 Epoch 948/1000
2123 - 0s - loss: 0.6178 -
      mean_absolute_error: 0.5567 - val_loss
      : 18.1980 - val_mean_absolute_error: 2
      .6717
2124 Epoch 949/1000
2125 - 0s - loss: 0.5563 -
      mean_absolute_error: 0.5390 - val_loss
      : 18.9644 - val_mean_absolute_error: 2
      .6744
2126 Epoch 950/1000
2127 - 0s - loss: 0.5416 -
```

```
2127 mean_absolute_error: 0.5285 - val_loss
    : 18.0610 - val_mean_absolute_error: 2
    .8627
```

```
2128
```

```
2129 Epoch 00950: val_mean_absolute_error
    did not improve from 2.27144
```

```
2130 Epoch 951/1000
```

```
2131   - 0s - loss: 0.5884 -
    mean_absolute_error: 0.5505 - val_loss
    : 17.7511 - val_mean_absolute_error: 2
    .5514
```

```
2132 Epoch 952/1000
```

```
2133   - 0s - loss: 0.6104 -
    mean_absolute_error: 0.5570 - val_loss
    : 18.6678 - val_mean_absolute_error: 2
    .6924
```

```
2134 Epoch 953/1000
```

```
2135   - 0s - loss: 0.5572 -
    mean_absolute_error: 0.5352 - val_loss
    : 17.1275 - val_mean_absolute_error: 2
    .7310
```

```
2136 Epoch 954/1000
```

```
2137   - 0s - loss: 0.6415 -
    mean_absolute_error: 0.5594 - val_loss
```

```
2137 : 18.9989 - val_mean_absolute_error: 2
      .7052
2138 Epoch 955/1000
2139   - 0s - loss: 0.5186 -
      mean_absolute_error: 0.5081 - val_loss
      : 18.1432 - val_mean_absolute_error: 2
      .6771
2140 Epoch 956/1000
2141   - 0s - loss: 0.5266 -
      mean_absolute_error: 0.4978 - val_loss
      : 17.3879 - val_mean_absolute_error: 2
      .6410
2142 Epoch 957/1000
2143   - 0s - loss: 0.6530 -
      mean_absolute_error: 0.5847 - val_loss
      : 20.8739 - val_mean_absolute_error: 2
      .8472
2144 Epoch 958/1000
2145   - 0s - loss: 0.6421 -
      mean_absolute_error: 0.5661 - val_loss
      : 19.6536 - val_mean_absolute_error: 2
      .8224
2146 Epoch 959/1000
2147   - 0s - loss: 0.4867 -
```



```
2147 mean_absolute_error: 0.4896 - val_loss
    : 22.6426 - val_mean_absolute_error: 2
    .9403
```

```
2148 Epoch 960/1000
```

```
2149 - 0s - loss: 0.5414 -
    mean_absolute_error: 0.5505 - val_loss
    : 19.2132 - val_mean_absolute_error: 2
    .7998
```

```
2150
```

```
2151 Epoch 00960: val_mean_absolute_error
    did not improve from 2.27144
```

```
2152 Epoch 961/1000
```

```
2153 - 0s - loss: 0.6280 -
    mean_absolute_error: 0.5647 - val_loss
    : 17.8468 - val_mean_absolute_error: 2
    .6331
```

```
2154 Epoch 962/1000
```

```
2155 - 0s - loss: 0.4839 -
    mean_absolute_error: 0.5160 - val_loss
    : 17.4312 - val_mean_absolute_error: 2
    .5795
```

```
2156 Epoch 963/1000
```

```
2157 - 0s - loss: 0.6457 -
    mean_absolute_error: 0.5511 - val_loss
```

```
2157 : 19.1443 - val_mean_absolute_error: 2
      .8033
2158 Epoch 964/1000
2159   - 0s - loss: 0.4678 -
      mean_absolute_error: 0.4735 - val_loss
      : 18.0277 - val_mean_absolute_error: 2
      .7319
2160 Epoch 965/1000
2161   - 0s - loss: 0.5842 -
      mean_absolute_error: 0.5440 - val_loss
      : 18.4108 - val_mean_absolute_error: 2
      .6990
2162 Epoch 966/1000
2163   - 0s - loss: 0.5930 -
      mean_absolute_error: 0.5309 - val_loss
      : 17.5461 - val_mean_absolute_error: 2
      .8363
2164 Epoch 967/1000
2165   - 0s - loss: 0.5761 -
      mean_absolute_error: 0.5223 - val_loss
      : 18.3667 - val_mean_absolute_error: 2
      .6670
2166 Epoch 968/1000
2167   - 0s - loss: 0.6602 -
```

```
2167 mean_absolute_error: 0.5787 - val_loss
    : 17.9358 - val_mean_absolute_error: 2
    .6601
```

```
2168 Epoch 969/1000
```

```
2169 - 0s - loss: 0.5398 -
    mean_absolute_error: 0.5188 - val_loss
    : 17.5777 - val_mean_absolute_error: 2
    .7985
```

```
2170 Epoch 970/1000
```

```
2171 - 0s - loss: 0.5203 -
    mean_absolute_error: 0.4899 - val_loss
    : 18.9837 - val_mean_absolute_error: 2
    .8914
```

```
2172
```

```
2173 Epoch 00970: val_mean_absolute_error
    did not improve from 2.27144
```

```
2174 Epoch 971/1000
```

```
2175 - 0s - loss: 0.5362 -
    mean_absolute_error: 0.5260 - val_loss
    : 16.8958 - val_mean_absolute_error: 2
    .6428
```

```
2176 Epoch 972/1000
```

```
2177 - 0s - loss: 0.4978 -
    mean_absolute_error: 0.5136 - val_loss
```

```
2177 : 18.1967 - val_mean_absolute_error: 2
      .6624
2178 Epoch 973/1000
2179 - 0s - loss: 0.4823 -
      mean_absolute_error: 0.5004 - val_loss
      : 17.9457 - val_mean_absolute_error: 2
      .6693
2180 Epoch 974/1000
2181 - 0s - loss: 0.5751 -
      mean_absolute_error: 0.5209 - val_loss
      : 18.3699 - val_mean_absolute_error: 2
      .7507
2182 Epoch 975/1000
2183 - 0s - loss: 0.4580 -
      mean_absolute_error: 0.4865 - val_loss
      : 17.7317 - val_mean_absolute_error: 2
      .7781
2184 Epoch 976/1000
2185 - 0s - loss: 0.5584 -
      mean_absolute_error: 0.5716 - val_loss
      : 18.1268 - val_mean_absolute_error: 3
      .0152
2186 Epoch 977/1000
2187 - 0s - loss: 0.6561 -
```

```
2187 mean_absolute_error: 0.5357 - val_loss
    : 18.6594 - val_mean_absolute_error: 2
    .7437
```

```
2188 Epoch 978/1000
```

```
2189 - 0s - loss: 0.6087 -
    mean_absolute_error: 0.5520 - val_loss
    : 18.2883 - val_mean_absolute_error: 2
    .6934
```

```
2190 Epoch 979/1000
```

```
2191 - 0s - loss: 0.4307 -
    mean_absolute_error: 0.4844 - val_loss
    : 18.3133 - val_mean_absolute_error: 2
    .6836
```

```
2192 Epoch 980/1000
```

```
2193 - 0s - loss: 0.5660 -
    mean_absolute_error: 0.5339 - val_loss
    : 17.5129 - val_mean_absolute_error: 2
    .6623
```

```
2194
```

```
2195 Epoch 00980: val_mean_absolute_error
    did not improve from 2.27144
```

```
2196 Epoch 981/1000
```

```
2197 - 0s - loss: 0.6838 -
    mean_absolute_error: 0.5895 - val_loss
```

```
2197 : 18.5380 - val_mean_absolute_error: 2
      .6879
2198 Epoch 982/1000
2199 - 0s - loss: 0.4811 -
      mean_absolute_error: 0.4808 - val_loss
      : 17.5549 - val_mean_absolute_error: 2
      .7627
2200 Epoch 983/1000
2201 - 0s - loss: 0.5397 -
      mean_absolute_error: 0.5331 - val_loss
      : 18.0486 - val_mean_absolute_error: 2
      .7403
2202 Epoch 984/1000
2203 - 0s - loss: 0.6348 -
      mean_absolute_error: 0.5398 - val_loss
      : 19.0898 - val_mean_absolute_error: 2
      .7450
2204 Epoch 985/1000
2205 - 0s - loss: 0.4998 -
      mean_absolute_error: 0.5050 - val_loss
      : 21.3770 - val_mean_absolute_error: 2
      .7925
2206 Epoch 986/1000
2207 - 0s - loss: 0.5443 -
```

2207 mean\_absolute\_error: 0.4865 - val\_loss  
: 17.3301 - val\_mean\_absolute\_error: 2  
.7030

2208 Epoch 987/1000

2209 - 0s - loss: 0.5134 -  
mean\_absolute\_error: 0.4953 - val\_loss  
: 16.7901 - val\_mean\_absolute\_error: 2  
.6123

2210 Epoch 988/1000

2211 - 0s - loss: 0.6285 -  
mean\_absolute\_error: 0.5741 - val\_loss  
: 22.6271 - val\_mean\_absolute\_error: 3  
.0780

2212 Epoch 989/1000

2213 - 0s - loss: 0.5872 -  
mean\_absolute\_error: 0.5287 - val\_loss  
: 17.3270 - val\_mean\_absolute\_error: 2  
.6090

2214 Epoch 990/1000

2215 - 0s - loss: 0.5551 -  
mean\_absolute\_error: 0.5215 - val\_loss  
: 17.3945 - val\_mean\_absolute\_error: 2  
.6652

2216

```
2217 Epoch 00990: val_mean_absolute_error
    did not improve from 2.27144
2218 Epoch 991/1000
2219   - 0s - loss: 0.4830 -
    mean_absolute_error: 0.4973 - val_loss
    : 18.7942 - val_mean_absolute_error: 2
    .7141
2220 Epoch 992/1000
2221   - 0s - loss: 0.6351 -
    mean_absolute_error: 0.5843 - val_loss
    : 17.5317 - val_mean_absolute_error: 2
    .6069
2222 Epoch 993/1000
2223   - 0s - loss: 0.4238 -
    mean_absolute_error: 0.4778 - val_loss
    : 18.6970 - val_mean_absolute_error: 2
    .7813
2224 Epoch 994/1000
2225   - 0s - loss: 0.5506 -
    mean_absolute_error: 0.5240 - val_loss
    : 17.9782 - val_mean_absolute_error: 2
    .6771
2226 Epoch 995/1000
2227   - 0s - loss: 0.6010 -
```



```
2227 mean_absolute_error: 0.5621 - val_loss
    : 18.1457 - val_mean_absolute_error: 2
    .6561
2228 Epoch 996/1000
2229   - 0s - loss: 0.4447 -
    mean_absolute_error: 0.4750 - val_loss
    : 18.3288 - val_mean_absolute_error: 2
    .7569
2230 Epoch 997/1000
2231   - 0s - loss: 0.5851 -
    mean_absolute_error: 0.5324 - val_loss
    : 19.5256 - val_mean_absolute_error: 2
    .7528
2232 Epoch 998/1000
2233   - 0s - loss: 0.5045 -
    mean_absolute_error: 0.4981 - val_loss
    : 18.1871 - val_mean_absolute_error: 2
    .7533
2234 Epoch 999/1000
2235   - 0s - loss: 0.5714 -
    mean_absolute_error: 0.5547 - val_loss
    : 16.9251 - val_mean_absolute_error: 2
    .7161
2236 Epoch 1000/1000
```

```

2237 - 0s - loss: 0.5975 -
mean_absolute_error: 0.5388 - val_loss
: 20.8621 - val_mean_absolute_error: 2
.8384

```

```

2238

```

```

2239 Epoch 01000: val_mean_absolute_error
did not improve from 2.27144

```

```

2240 history.history.keys = ['
val_mean_absolute_error', 'loss', '
mean_absolute_error', 'val_loss']

```

```

2241 history.history = {'
val_mean_absolute_error': [20.
338163634877144, 16.373665703667534,
11.555089950561523, 7.886212925852081
, 6.1965287526448565, 5.
2819504208034935, 4.657551965595763, 4
.219557891657323, 3.985839349252206, 3
.996849130701136, 3.5316897262761624,
3.476207238656503, 3.424370871649848,
3.177375652171947, 3.0311515242965132
, 2.947956202942648, 2.
8303362763958213, 3.1110143543761453,
2.8262429649447216, 2.8367834679874373
, 2.7280649020348067, 2.

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2241 7908691830105252, 2.757757893315068, 2.  
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, 2.593905955185125, 2.671905494030611  
, 2.594612851554965, 2.  
7257186983838495, 2.526709379973235, 2.  
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, 2.719108393162857, 2.617777365225333  
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, 2.751419279310438, 2.614118340574665

2241 , 2. 5838853106086637, 2. [REDACTED]  
521235407134633, 2. 5383811762303483, 2. [REDACTED]  
. 7079953558651018, 2. 6862431749885465 [REDACTED]  
, 2. 553648724968051, 2. [REDACTED]  
5163699020574124, 2. 583912696367429, 2. [REDACTED]  
. 4936193301353926, 2. 497931280253846, [REDACTED]  
2. 4556140428707924, 2. 461790320314007 [REDACTED]  
, 2. 451263569019459, 2. [REDACTED]  
4753795435399186, 2. 6205058392183282, [REDACTED]  
2. 573505024851104, 2. 6596961786717546 [REDACTED]  
, 2. 5373545281681014, 2. [REDACTED]  
462479556048358, 2. 4416796366373696, 2. [REDACTED]  
. 4512008148946878, 2. 4370988916467735 [REDACTED]  
, 2. 4862394450623313, 2. [REDACTED]  
525263656804591, 2. 494241667382511, 2. [REDACTED]  
4849095521149813, 2. 856876208458418, 2. [REDACTED]  
. 587770250108507, 2. 48478913012846, 2. [REDACTED]  
6794909253532504, 2. 4703071500048224, [REDACTED]  
2. 4181286140724465, 2. 596387133186246 [REDACTED]  
, 2. 476074053917402, 2. [REDACTED]  
4642900066611206, 2. 4596659342447915, [REDACTED]  
2. 544655434879256, 2. 5276529288586276 [REDACTED]  
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2244 results test_loss: 19.538152358111212
```

```
2245 results test_mean_absolute_error: 3.  
1216609431248084
```

```
2246 #####model predict
```

```
#####
```

```
2247
```

```
2248 Process finished with exit code 0
```

```
2249
```



```
1 ssh://root@103.254.67.181:10006/usr/bin/  
python -u /home/sunfengzhen/pycharm/  
keras_regress/boston01.py  
2 Using TensorFlow backend.  
3 #####load dataset  
#####  
4 the type of train data is float64  
5 the shape of train data is (404, 13)  
6 the shape of train target is (404,)  
7 the type of train target is float64  
8 train target[:10]: [15.2 42.3 50. 21.1  
17.7 18.5 11.3 15.6 15.6 14.4]  
9 the shape of test data is (102, 13)  
10 the shape of test target is (102,)  
11 #####data proecess  
#####  
12 the shape of mean is (13,)  
13 the shape of std is (13,)  
14 #####model train  
#####  
15 model.metrics_names = ['loss', '  
mean_absolute_error']  
16
```

```
17 Layer (type)                Output
    Shape                    Param #
18 =====
    =====
19 dense_1 (Dense)              (None, 64
    )                        896
20 =====
21 dense_2 (Dense)              (None, 64
    )                        4160
22 =====
23 dense_3 (Dense)              (None, 1
    )                        65
24 =====
25 Total params: 5,121
26 Trainable params: 5,121
27 Non-trainable params: 0
28 =====
29 Train on 323 samples, validate on 81
    samples
30 Epoch 1/1000
```

```
31 2019-05-29 10:31:42.922304: I tensorflow
   /core/platform/cpu_feature_guard.cc:141
   ] Your CPU supports instructions that
   this TensorFlow binary was not compiled
   to use: AVX2 FMA
32 2019-05-29 10:31:43.205193: I tensorflow
   /core/common_runtime/gpu/gpu_device.cc:
   1432] Found device 0 with properties:
33 name: GeForce GTX 1080 Ti major: 6 minor
   : 1 memoryClockRate(GHz): 1.582
34 pciBusID: 0000:82:00.0
35 totalMemory: 10.92GiB freeMemory: 10.
   76GiB
36 2019-05-29 10:31:43.205266: I tensorflow
   /core/common_runtime/gpu/gpu_device.cc:
   1511] Adding visible gpu devices: 0
37 2019-05-29 10:31:43.616667: I tensorflow
   /core/common_runtime/gpu/gpu_device.cc:
   982] Device interconnect StreamExecutor
   with strength 1 edge matrix:
38 2019-05-29 10:31:43.616740: I tensorflow
   /core/common_runtime/gpu/gpu_device.cc:
   988] 0
39 2019-05-29 10:31:43.616770: I tensorflow
```

```
39 /core/common_runtime/gpu/gpu_device.cc:
1001] 0: N
40 2019-05-29 10:31:43.617104: I tensorflow
/core/common_runtime/gpu/gpu_device.cc:
1115] Created TensorFlow device (/job:
localhost/replica:0/task:0/device:GPU:0
with 10409 MB memory) -> physical GPU (
device: 0, name: GeForce GTX 1080 Ti,
pci bus id: 0000:82:00.0, compute
capability: 6.1)
41 - 2s - loss: 508.8570 -
mean_absolute_error: 20.4707 - val_loss
: 502.1782 - val_mean_absolute_error: 20
.3382
42 Epoch 2/1000
43 - 0s - loss: 377.0670 -
mean_absolute_error: 16.9365 - val_loss
: 351.6663 - val_mean_absolute_error: 16
.3737
44 Epoch 3/1000
45 - 0s - loss: 233.1376 -
mean_absolute_error: 12.7086 - val_loss
: 201.0621 - val_mean_absolute_error: 11
.5551
```

```
46 Epoch 4/1000
47   - 0s - loss: 119.1073 -
    mean_absolute_error: 8.5366 - val_loss:
    106.8300 - val_mean_absolute_error: 7.
    8862
48 Epoch 5/1000
49   - 0s - loss: 66.6506 -
    mean_absolute_error: 6.1033 - val_loss:
    66.7304 - val_mean_absolute_error: 6.
    1965
50 Epoch 6/1000
51   - 0s - loss: 46.5216 -
    mean_absolute_error: 4.9055 - val_loss:
    50.3796 - val_mean_absolute_error: 5.
    2820
52 Epoch 7/1000
53   - 0s - loss: 35.6644 -
    mean_absolute_error: 4.1863 - val_loss:
    37.8124 - val_mean_absolute_error: 4.
    6576
54 Epoch 8/1000
55   - 0s - loss: 28.5578 -
    mean_absolute_error: 3.7078 - val_loss:
    29.4733 - val_mean_absolute_error: 4.
```

```
55 2196
56 Epoch 9/1000
57 - 0s - loss: 24.2213 -
  mean_absolute_error: 3.4109 - val_loss:
  26.2472 - val_mean_absolute_error: 3.
  9858
58 Epoch 10/1000
59 - 0s - loss: 22.1722 -
  mean_absolute_error: 3.2803 - val_loss:
  24.3110 - val_mean_absolute_error: 3.
  9968
60
61 Epoch 0010: val_mean_absolute_error
  improved from inf to 3.99685, saving
  model to ./model/model_Epoch0010-
  val_mean_absolute_error4.00.h5
62 Epoch 11/1000
63 - 0s - loss: 19.9153 -
  mean_absolute_error: 3.1422 - val_loss:
  23.0588 - val_mean_absolute_error: 3.
  5317
64 Epoch 12/1000
65 - 0s - loss: 18.6735 -
  mean_absolute_error: 2.9657 - val_loss:
```

```
65 19.3226 - val_mean_absolute_error: 3.
4762
66 Epoch 13/1000
67 - 0s - loss: 17.0796 -
mean_absolute_error: 2.8401 - val_loss:
18.5031 - val_mean_absolute_error: 3.
4244
68 Epoch 14/1000
69 - 0s - loss: 15.8806 -
mean_absolute_error: 2.7602 - val_loss:
16.5286 - val_mean_absolute_error: 3.
1774
70 Epoch 15/1000
71 - 0s - loss: 14.9331 -
mean_absolute_error: 2.6634 - val_loss:
15.3848 - val_mean_absolute_error: 3.
0312
72 Epoch 16/1000
73 - 0s - loss: 14.0725 -
mean_absolute_error: 2.5630 - val_loss:
14.8925 - val_mean_absolute_error: 2.
9480
74 Epoch 17/1000
75 - 0s - loss: 13.3513 -
```

```
75 mean_absolute_error: 2.4960 - val_loss:
   13.9896 - val_mean_absolute_error: 2.
   8303
76 Epoch 18/1000
77   - 0s - loss: 13.0629 -
   mean_absolute_error: 2.4981 - val_loss:
   15.3788 - val_mean_absolute_error: 3.
   1110
78 Epoch 19/1000
79   - 0s - loss: 12.6171 -
   mean_absolute_error: 2.4574 - val_loss:
   13.3599 - val_mean_absolute_error: 2.
   8262
80 Epoch 20/1000
81   - 0s - loss: 11.7888 -
   mean_absolute_error: 2.3847 - val_loss:
   13.6188 - val_mean_absolute_error: 2.
   8368
82
83 Epoch 0020: val_mean_absolute_error
   improved from 3.99685 to 2.83678, saving
   model to ./model/model_Epoch0020-
   val_mean_absolute_error2.84.h5
84 Epoch 21/1000
```



```
85 - 0s - loss: 11.7894 -  
mean_absolute_error: 2.3426 - val_loss  
: 12.8359 - val_mean_absolute_error: 2.  
7281  
86 Epoch 22/1000  
87 - 0s - loss: 11.2370 -  
mean_absolute_error: 2.2978 - val_loss  
: 12.7378 - val_mean_absolute_error: 2.  
7909  
88 Epoch 23/1000  
89 - 0s - loss: 10.9771 -  
mean_absolute_error: 2.2869 - val_loss  
: 12.3347 - val_mean_absolute_error: 2.  
7578  
90 Epoch 24/1000  
91 - 0s - loss: 10.7601 -  
mean_absolute_error: 2.2491 - val_loss  
: 12.3628 - val_mean_absolute_error: 2.  
6097  
92 Epoch 25/1000  
93 - 0s - loss: 10.2933 -  
mean_absolute_error: 2.2198 - val_loss  
: 13.8948 - val_mean_absolute_error: 2.  
7856
```

```
94 Epoch 26/1000
95   - 0s - loss: 10.3395 -
    mean_absolute_error: 2.1852 - val_loss
    : 12.5965 - val_mean_absolute_error: 2.
    6553
96 Epoch 27/1000
97   - 0s - loss: 10.0387 -
    mean_absolute_error: 2.1834 - val_loss
    : 12.6053 - val_mean_absolute_error: 2.
    7038
98 Epoch 28/1000
99   - 0s - loss: 9.9576 -
    mean_absolute_error: 2.1891 - val_loss
    : 12.0698 - val_mean_absolute_error: 2.
    6495
100 Epoch 29/1000
101   - 0s - loss: 9.5338 -
    mean_absolute_error: 2.1261 - val_loss
    : 12.7163 - val_mean_absolute_error: 2.
    8390
102 Epoch 30/1000
103   - 0s - loss: 9.3056 -
    mean_absolute_error: 2.1012 - val_loss
    : 11.6176 - val_mean_absolute_error: 2.
```

103 6176

104

105 Epoch 00030: val\_mean\_absolute\_error  
improved from 2.83678 to 2.61763,  
saving model to ./model/model\_Epoch0030  
-val\_mean\_absolute\_error2.62.h5

106 Epoch 31/1000

107 - 0s - loss: 9.5487 -  
mean\_absolute\_error: 2.1249 - val\_loss  
: 12.1098 - val\_mean\_absolute\_error: 2.  
6561

108 Epoch 32/1000

109 - 0s - loss: 8.9365 -  
mean\_absolute\_error: 2.0343 - val\_loss  
: 15.7893 - val\_mean\_absolute\_error: 2.  
8930

110 Epoch 33/1000

111 - 0s - loss: 9.1733 -  
mean\_absolute\_error: 2.1379 - val\_loss  
: 12.4831 - val\_mean\_absolute\_error: 2.  
5939

112 Epoch 34/1000

113 - 0s - loss: 8.7832 -  
mean\_absolute\_error: 2.0653 - val\_loss

```
113 : 12.4745 - val_mean_absolute_error: 2.
    6719
114 Epoch 35/1000
115 - 0s - loss: 8.9244 -
    mean_absolute_error: 2.0582 - val_loss
    : 12.4537 - val_mean_absolute_error: 2.
    5946
116 Epoch 36/1000
117 - 0s - loss: 8.5267 -
    mean_absolute_error: 2.0779 - val_loss
    : 12.7375 - val_mean_absolute_error: 2.
    7257
118 Epoch 37/1000
119 - 0s - loss: 8.6095 -
    mean_absolute_error: 2.0246 - val_loss
    : 12.5228 - val_mean_absolute_error: 2.
    5267
120 Epoch 38/1000
121 - 0s - loss: 8.6112 -
    mean_absolute_error: 2.0274 - val_loss
    : 12.5877 - val_mean_absolute_error: 2.
    5362
122 Epoch 39/1000
123 - 0s - loss: 8.4096 -
```

```
123 mean_absolute_error: 1.9910 - val_loss
    : 12.5051 - val_mean_absolute_error: 2.
    5184
124 Epoch 40/1000
125   - 0s - loss: 8.1227 -
    mean_absolute_error: 1.9826 - val_loss
    : 12.3537 - val_mean_absolute_error: 2.
    5608
126
127 Epoch 0040: val_mean_absolute_error
    improved from 2.61763 to 2.56082,
    saving model to ./model/model_Epoch0040
    -val_mean_absolute_error2.56.h5
128 Epoch 41/1000
129   - 0s - loss: 8.0297 -
    mean_absolute_error: 1.9396 - val_loss
    : 12.1463 - val_mean_absolute_error: 2.
    5982
130 Epoch 42/1000
131   - 0s - loss: 8.2348 -
    mean_absolute_error: 1.9562 - val_loss
    : 12.9758 - val_mean_absolute_error: 2.
    5625
132 Epoch 43/1000
```

```
133 - 0s - loss: 7.9648 -  
mean_absolute_error: 1.9833 - val_loss  
: 12.0786 - val_mean_absolute_error: 2.  
5746  
134 Epoch 44/1000  
135 - 0s - loss: 7.9476 -  
mean_absolute_error: 1.9209 - val_loss  
: 15.3071 - val_mean_absolute_error: 2.  
7191  
136 Epoch 45/1000  
137 - 0s - loss: 7.8115 -  
mean_absolute_error: 1.9458 - val_loss  
: 12.3172 - val_mean_absolute_error: 2.  
6178  
138 Epoch 46/1000  
139 - 0s - loss: 7.7519 -  
mean_absolute_error: 1.8970 - val_loss  
: 13.3924 - val_mean_absolute_error: 2.  
6245  
140 Epoch 47/1000  
141 - 0s - loss: 7.6907 -  
mean_absolute_error: 1.9203 - val_loss  
: 12.5278 - val_mean_absolute_error: 2.  
4699
```

```
142 Epoch 48/1000
143   - 0s - loss: 7.4754 -
      mean_absolute_error: 1.8890 - val_loss
      : 12.3038 - val_mean_absolute_error: 2.
      5601
144 Epoch 49/1000
145   - 0s - loss: 7.6362 -
      mean_absolute_error: 1.8887 - val_loss
      : 12.2312 - val_mean_absolute_error: 2.
      5350
146 Epoch 50/1000
147   - 0s - loss: 7.5599 -
      mean_absolute_error: 1.8726 - val_loss
      : 11.9923 - val_mean_absolute_error: 2.
      4585
148
149 Epoch 00050: val_mean_absolute_error
      improved from 2.56082 to 2.45854,
      saving model to ./model/model_Epoch0050
      -val_mean_absolute_error2.46.h5
150 Epoch 51/1000
151   - 0s - loss: 7.4957 -
      mean_absolute_error: 1.8982 - val_loss
      : 12.4439 - val_mean_absolute_error: 2.
```

```
151 6541
152 Epoch 52/1000
153   - 0s - loss: 7.3561 -
    mean_absolute_error: 1.8711 - val_loss
    : 12.2916 - val_mean_absolute_error: 2.
    5589
154 Epoch 53/1000
155   - 0s - loss: 7.1150 -
    mean_absolute_error: 1.8399 - val_loss
    : 12.0207 - val_mean_absolute_error: 2.
    5144
156 Epoch 54/1000
157   - 0s - loss: 7.1536 -
    mean_absolute_error: 1.8609 - val_loss
    : 14.2695 - val_mean_absolute_error: 2.
    7237
158 Epoch 55/1000
159   - 0s - loss: 7.3549 -
    mean_absolute_error: 1.8630 - val_loss
    : 13.1265 - val_mean_absolute_error: 2.
    4830
160 Epoch 56/1000
161   - 0s - loss: 7.0151 -
    mean_absolute_error: 1.8336 - val_loss
```



```
161 : 12.7181 - val_mean_absolute_error: 2.
5833
162 Epoch 57/1000
163 - 0s - loss: 7.1830 -
mean_absolute_error: 1.8377 - val_loss
: 12.6467 - val_mean_absolute_error: 2.
5032
164 Epoch 58/1000
165 - 0s - loss: 6.9233 -
mean_absolute_error: 1.8006 - val_loss
: 12.9391 - val_mean_absolute_error: 2.
5442
166 Epoch 59/1000
167 - 0s - loss: 6.9152 -
mean_absolute_error: 1.8035 - val_loss
: 14.1281 - val_mean_absolute_error: 2.
5920
168 Epoch 60/1000
169 - 0s - loss: 6.6614 -
mean_absolute_error: 1.7891 - val_loss
: 15.5446 - val_mean_absolute_error: 2.
6221
170
171 Epoch 00060: val_mean_absolute_error
```

```
171 did not improve from 2.45854
172 Epoch 61/1000
173   - 0s - loss: 7.0422 -
      mean_absolute_error: 1.8260 - val_loss
      : 12.3304 - val_mean_absolute_error: 2.
      4674
174 Epoch 62/1000
175   - 0s - loss: 6.8601 -
      mean_absolute_error: 1.8219 - val_loss
      : 12.8567 - val_mean_absolute_error: 2.
      5128
176 Epoch 63/1000
177   - 0s - loss: 6.5729 -
      mean_absolute_error: 1.7427 - val_loss
      : 16.2805 - val_mean_absolute_error: 2.
      7514
178 Epoch 64/1000
179   - 0s - loss: 6.6873 -
      mean_absolute_error: 1.8112 - val_loss
      : 13.7294 - val_mean_absolute_error: 2.
      6141
180 Epoch 65/1000
181   - 0s - loss: 6.4925 -
      mean_absolute_error: 1.7712 - val_loss
```

```
181 : 13.8488 - val_mean_absolute_error: 2.
5839
182 Epoch 66/1000
183 - 0s - loss: 6.3370 -
mean_absolute_error: 1.7626 - val_loss
: 12.4611 - val_mean_absolute_error: 2.
5212
184 Epoch 67/1000
185 - 0s - loss: 6.4373 -
mean_absolute_error: 1.7643 - val_loss
: 13.0092 - val_mean_absolute_error: 2.
5384
186 Epoch 68/1000
187 - 0s - loss: 6.4051 -
mean_absolute_error: 1.7779 - val_loss
: 13.3328 - val_mean_absolute_error: 2.
7080
188 Epoch 69/1000
189 - 0s - loss: 6.4513 -
mean_absolute_error: 1.7229 - val_loss
: 14.7567 - val_mean_absolute_error: 2.
6862
190 Epoch 70/1000
191 - 0s - loss: 6.2459 -
```

```
191 mean_absolute_error: 1.7464 - val_loss
    : 12.9123 - val_mean_absolute_error: 2.
    5536
```

```
192
```

```
193 Epoch 00070: val_mean_absolute_error
    did not improve from 2.45854
```

```
194 Epoch 71/1000
```

```
195   - 0s - loss: 6.1774 -
    mean_absolute_error: 1.6919 - val_loss
    : 13.9759 - val_mean_absolute_error: 2.
    5164
```

```
196 Epoch 72/1000
```

```
197   - 0s - loss: 6.3357 -
    mean_absolute_error: 1.7462 - val_loss
    : 13.3034 - val_mean_absolute_error: 2.
    5839
```

```
198 Epoch 73/1000
```

```
199   - 0s - loss: 6.1997 -
    mean_absolute_error: 1.7343 - val_loss
    : 12.4309 - val_mean_absolute_error: 2.
    4936
```

```
200 Epoch 74/1000
```

```
201   - 0s - loss: 6.0883 -
    mean_absolute_error: 1.6695 - val_loss
```

```
201 : 13.0401 - val_mean_absolute_error: 2.
4979
202 Epoch 75/1000
203 - 0s - loss: 6.2554 -
mean_absolute_error: 1.7133 - val_loss
: 13.3727 - val_mean_absolute_error: 2.
4556
204 Epoch 76/1000
205 - 0s - loss: 6.0023 -
mean_absolute_error: 1.6996 - val_loss
: 12.8556 - val_mean_absolute_error: 2.
4618
206 Epoch 77/1000
207 - 0s - loss: 5.9766 -
mean_absolute_error: 1.6278 - val_loss
: 13.0897 - val_mean_absolute_error: 2.
4513
208 Epoch 78/1000
209 - 0s - loss: 6.0793 -
mean_absolute_error: 1.6577 - val_loss
: 12.8823 - val_mean_absolute_error: 2.
4754
210 Epoch 79/1000
211 - 0s - loss: 5.7519 -
```

```
211 mean_absolute_error: 1.6324 - val_loss
    : 13.3224 - val_mean_absolute_error: 2.
    6205
```

```
212 Epoch 80/1000
```

```
213   - 0s - loss: 5.7596 -
    mean_absolute_error: 1.6362 - val_loss
    : 12.9500 - val_mean_absolute_error: 2.
    5735
```

```
214
```

```
215 Epoch 00080: val_mean_absolute_error
    did not improve from 2.45854
```

```
216 Epoch 81/1000
```

```
217   - 0s - loss: 5.7959 -
    mean_absolute_error: 1.6462 - val_loss
    : 13.0019 - val_mean_absolute_error: 2.
    6597
```

```
218 Epoch 82/1000
```

```
219   - 0s - loss: 5.7090 -
    mean_absolute_error: 1.6289 - val_loss
    : 12.8836 - val_mean_absolute_error: 2.
    5374
```

```
220 Epoch 83/1000
```

```
221   - 0s - loss: 5.6286 -
    mean_absolute_error: 1.6220 - val_loss
```

```
221 : 13.6477 - val_mean_absolute_error: 2.
    4625
222 Epoch 84/1000
223 - 0s - loss: 5.7457 -
    mean_absolute_error: 1.6571 - val_loss
    : 12.6499 - val_mean_absolute_error: 2.
    4417
224 Epoch 85/1000
225 - 0s - loss: 5.6964 -
    mean_absolute_error: 1.6348 - val_loss
    : 12.9228 - val_mean_absolute_error: 2.
    4512
226 Epoch 86/1000
227 - 0s - loss: 5.6430 -
    mean_absolute_error: 1.6679 - val_loss
    : 13.7091 - val_mean_absolute_error: 2.
    4371
228 Epoch 87/1000
229 - 0s - loss: 5.5740 -
    mean_absolute_error: 1.6226 - val_loss
    : 13.9593 - val_mean_absolute_error: 2.
    4862
230 Epoch 88/1000
231 - 0s - loss: 5.5570 -
```

```
231 mean_absolute_error: 1.6255 - val_loss
    : 13.3627 - val_mean_absolute_error: 2.
    5253
```

```
232 Epoch 89/1000
```

```
233   - 0s - loss: 5.5249 -
      mean_absolute_error: 1.6002 - val_loss
      : 13.3535 - val_mean_absolute_error: 2.
      4942
```

```
234 Epoch 90/1000
```

```
235   - 0s - loss: 5.4470 -
      mean_absolute_error: 1.5859 - val_loss
      : 13.5879 - val_mean_absolute_error: 2.
      4849
```

```
236
```

```
237 Epoch 00090: val_mean_absolute_error
    did not improve from 2.45854
```

```
238 Epoch 91/1000
```

```
239   - 0s - loss: 5.3638 -
      mean_absolute_error: 1.6028 - val_loss
      : 14.8538 - val_mean_absolute_error: 2.
      8569
```

```
240 Epoch 92/1000
```

```
241   - 0s - loss: 5.4877 -
      mean_absolute_error: 1.6167 - val_loss
```



```
241 : 12.7267 - val_mean_absolute_error: 2.5878
242 Epoch 93/1000
243 - 0s - loss: 5.2634 - mean_absolute_error: 1.5778 - val_loss: 14.3206 - val_mean_absolute_error: 2.4848
244 Epoch 94/1000
245 - 0s - loss: 5.2590 - mean_absolute_error: 1.5730 - val_loss: 13.5896 - val_mean_absolute_error: 2.6795
246 Epoch 95/1000
247 - 0s - loss: 5.1998 - mean_absolute_error: 1.5744 - val_loss: 13.1699 - val_mean_absolute_error: 2.4703
248 Epoch 96/1000
249 - 0s - loss: 4.9457 - mean_absolute_error: 1.5331 - val_loss: 13.9732 - val_mean_absolute_error: 2.4181
250 Epoch 97/1000
251 - 0s - loss: 5.2812 -
```

```
251 mean_absolute_error: 1.5826 - val_loss
    : 12.9996 - val_mean_absolute_error: 2.
    45964
```

```
252 Epoch 98/1000
```

```
253   - 0s - loss: 5.3232 -
      mean_absolute_error: 1.5817 - val_loss
      : 12.7469 - val_mean_absolute_error: 2.
      4761
```

```
254 Epoch 99/1000
```

```
255   - 0s - loss: 4.9620 -
      mean_absolute_error: 1.5284 - val_loss
      : 13.1238 - val_mean_absolute_error: 2.
      4643
```

```
256 Epoch 100/1000
```

```
257   - 0s - loss: 5.1833 -
      mean_absolute_error: 1.5380 - val_loss
      : 14.0637 - val_mean_absolute_error: 2.
      4597
```

```
258
```

```
259 Epoch 00100: val_mean_absolute_error
    did not improve from 2.45854
```

```
260 Epoch 101/1000
```

```
261   - 0s - loss: 5.0293 -
      mean_absolute_error: 1.5305 - val_loss
```

```
261 : 15.5031 - val_mean_absolute_error: 2.
5447
262 Epoch 102/1000
263 - 0s - loss: 4.9056 -
mean_absolute_error: 1.5570 - val_loss
: 15.6589 - val_mean_absolute_error: 2.
5277
264 Epoch 103/1000
265 - 0s - loss: 5.0046 -
mean_absolute_error: 1.5583 - val_loss
: 14.5436 - val_mean_absolute_error: 2.
4849
266 Epoch 104/1000
267 - 0s - loss: 5.0450 -
mean_absolute_error: 1.5547 - val_loss
: 13.1390 - val_mean_absolute_error: 2.
4331
268 Epoch 105/1000
269 - 0s - loss: 4.7754 -
mean_absolute_error: 1.5188 - val_loss
: 13.7144 - val_mean_absolute_error: 2.
4609
270 Epoch 106/1000
271 - 0s - loss: 5.0500 -
```

```
271 mean_absolute_error: 1.5471 - val_loss
    : 14.8180 - val_mean_absolute_error: 2.
5740
```

```
272 Epoch 107/1000
```

```
273   - 0s - loss: 4.8728 -
    mean_absolute_error: 1.4891 - val_loss
    : 13.8454 - val_mean_absolute_error: 2.
4251
```

```
274 Epoch 108/1000
```

```
275   - 0s - loss: 4.7332 -
    mean_absolute_error: 1.4691 - val_loss
    : 13.6337 - val_mean_absolute_error: 2.
6243
```

```
276 Epoch 109/1000
```

```
277   - 0s - loss: 4.6060 -
    mean_absolute_error: 1.4767 - val_loss
    : 13.6645 - val_mean_absolute_error: 2.
4436
```

```
278 Epoch 110/1000
```

```
279   - 0s - loss: 4.6188 -
    mean_absolute_error: 1.4979 - val_loss
    : 12.9895 - val_mean_absolute_error: 2.
4880
```

```
280
```

```
281 Epoch 00110: val_mean_absolute_error
    did not improve from 2.45854
282 Epoch 111/1000
283   - 0s - loss: 4.7260 -
    mean_absolute_error: 1.5002 - val_loss
    : 14.2647 - val_mean_absolute_error: 2.
    5062
284 Epoch 112/1000
285   - 0s - loss: 4.8011 -
    mean_absolute_error: 1.4700 - val_loss
    : 13.2491 - val_mean_absolute_error: 2.
    5159
286 Epoch 113/1000
287   - 0s - loss: 4.7271 -
    mean_absolute_error: 1.4957 - val_loss
    : 12.8246 - val_mean_absolute_error: 2.
    5318
288 Epoch 114/1000
289   - 0s - loss: 4.6512 -
    mean_absolute_error: 1.4513 - val_loss
    : 13.4932 - val_mean_absolute_error: 2.
    4297
290 Epoch 115/1000
291   - 0s - loss: 4.6407 -
```

```
291 mean_absolute_error: 1.4448 - val_loss
    : 13.5309 - val_mean_absolute_error: 2.
4035
292 Epoch 116/1000
293   - 0s - loss: 4.4667 -
    mean_absolute_error: 1.4160 - val_loss
    : 14.9832 - val_mean_absolute_error: 2.
5410
294 Epoch 117/1000
295   - 0s - loss: 4.4219 -
    mean_absolute_error: 1.4754 - val_loss
    : 13.7533 - val_mean_absolute_error: 2.
3929
296 Epoch 118/1000
297   - 0s - loss: 4.5402 -
    mean_absolute_error: 1.4637 - val_loss
    : 13.8223 - val_mean_absolute_error: 2.
4106
298 Epoch 119/1000
299   - 0s - loss: 4.5026 -
    mean_absolute_error: 1.4735 - val_loss
    : 13.3173 - val_mean_absolute_error: 2.
4555
300 Epoch 120/1000
```

```
301 - 0s - loss: 4.4632 -  
mean_absolute_error: 1.4456 - val_loss  
: 13.2312 - val_mean_absolute_error: 2.  
4173  
302  
303 Epoch 00120: val_mean_absolute_error  
improved from 2.45854 to 2.41731,  
saving model to ./model/model_Epoch0120  
-val_mean_absolute_error2.42.h5  
304 Epoch 121/1000  
305 - 0s - loss: 4.4761 -  
mean_absolute_error: 1.4250 - val_loss  
: 16.6304 - val_mean_absolute_error: 2.  
7050  
306 Epoch 122/1000  
307 - 0s - loss: 4.6561 -  
mean_absolute_error: 1.4688 - val_loss  
: 15.6400 - val_mean_absolute_error: 2.  
5128  
308 Epoch 123/1000  
309 - 0s - loss: 4.3071 -  
mean_absolute_error: 1.4362 - val_loss  
: 13.9746 - val_mean_absolute_error: 2.  
6208
```

```
310 Epoch 124/1000
311   - 0s - loss: 4.3706 -
      mean_absolute_error: 1.4417 - val_loss
      : 13.5181 - val_mean_absolute_error: 2.
      5104
312 Epoch 125/1000
313   - 0s - loss: 4.2669 -
      mean_absolute_error: 1.4170 - val_loss
      : 13.7394 - val_mean_absolute_error: 2.
      4933
314 Epoch 126/1000
315   - 0s - loss: 4.2876 -
      mean_absolute_error: 1.4605 - val_loss
      : 13.5563 - val_mean_absolute_error: 2.
      3906
316 Epoch 127/1000
317   - 0s - loss: 4.4309 -
      mean_absolute_error: 1.4361 - val_loss
      : 14.3062 - val_mean_absolute_error: 2.
      4536
318 Epoch 128/1000
319   - 0s - loss: 4.0691 -
      mean_absolute_error: 1.3975 - val_loss
      : 13.7712 - val_mean_absolute_error: 2.
```



```
319 4211
320 Epoch 129/1000
321   - 0s - loss: 4.1112 -
      mean_absolute_error: 1.4281 - val_loss
      : 13.4013 - val_mean_absolute_error: 2.
4146
322 Epoch 130/1000
323   - 0s - loss: 4.2188 -
      mean_absolute_error: 1.4310 - val_loss
      : 14.9179 - val_mean_absolute_error: 2.
5752
324
325 Epoch 00130: val_mean_absolute_error
      did not improve from 2.41731
326 Epoch 131/1000
327   - 0s - loss: 4.1455 -
      mean_absolute_error: 1.4184 - val_loss
      : 13.6284 - val_mean_absolute_error: 2.
4262
328 Epoch 132/1000
329   - 0s - loss: 4.1086 -
      mean_absolute_error: 1.3804 - val_loss
      : 14.6837 - val_mean_absolute_error: 2.
4741
```

```
330 Epoch 133/1000
331   - 0s - loss: 4.0551 -
      mean_absolute_error: 1.4008 - val_loss
      : 14.8289 - val_mean_absolute_error: 2.
      4647
332 Epoch 134/1000
333   - 0s - loss: 4.0402 -
      mean_absolute_error: 1.3600 - val_loss
      : 13.2224 - val_mean_absolute_error: 2.
      3943
334 Epoch 135/1000
335   - 0s - loss: 4.0246 -
      mean_absolute_error: 1.4158 - val_loss
      : 13.7612 - val_mean_absolute_error: 2.
      5837
336 Epoch 136/1000
337   - 0s - loss: 4.1324 -
      mean_absolute_error: 1.3809 - val_loss
      : 13.3615 - val_mean_absolute_error: 2.
      4132
338 Epoch 137/1000
339   - 0s - loss: 4.1333 -
      mean_absolute_error: 1.4200 - val_loss
      : 13.4753 - val_mean_absolute_error: 2.
```

```
339 3824
340 Epoch 138/1000
341   - 0s - loss: 4.1006 -
      mean_absolute_error: 1.4123 - val_loss
      : 13.2317 - val_mean_absolute_error: 2.
5027
342 Epoch 139/1000
343   - 0s - loss: 3.9231 -
      mean_absolute_error: 1.3650 - val_loss
      : 13.2198 - val_mean_absolute_error: 2.
4040
344 Epoch 140/1000
345   - 0s - loss: 3.9884 -
      mean_absolute_error: 1.3936 - val_loss
      : 13.6991 - val_mean_absolute_error: 2.
4446
346
347 Epoch 00140: val_mean_absolute_error
      did not improve from 2.41731
348 Epoch 141/1000
349   - 0s - loss: 3.8466 -
      mean_absolute_error: 1.3519 - val_loss
      : 13.4792 - val_mean_absolute_error: 2.
4831
```

```
350 Epoch 142/1000
351   - 0s - loss: 3.7813 -
      mean_absolute_error: 1.3743 - val_loss
      : 14.5342 - val_mean_absolute_error: 2.
      4961
352 Epoch 143/1000
353   - 0s - loss: 3.9038 -
      mean_absolute_error: 1.3956 - val_loss
      : 13.9396 - val_mean_absolute_error: 2.
      4406
354 Epoch 144/1000
355   - 0s - loss: 3.9363 -
      mean_absolute_error: 1.3592 - val_loss
      : 13.8653 - val_mean_absolute_error: 2.
      3873
356 Epoch 145/1000
357   - 0s - loss: 3.6789 -
      mean_absolute_error: 1.3423 - val_loss
      : 14.0408 - val_mean_absolute_error: 2.
      6104
358 Epoch 146/1000
359   - 0s - loss: 3.9000 -
      mean_absolute_error: 1.3731 - val_loss
      : 14.4238 - val_mean_absolute_error: 2.
```

```
359 4165
360 Epoch 147/1000
361   - 0s - loss: 4.1753 -
      mean_absolute_error: 1.4052 - val_loss
      : 13.6717 - val_mean_absolute_error: 2.
3827
362 Epoch 148/1000
363   - 0s - loss: 3.6750 -
      mean_absolute_error: 1.2982 - val_loss
      : 14.3248 - val_mean_absolute_error: 2.
5185
364 Epoch 149/1000
365   - 0s - loss: 3.8542 -
      mean_absolute_error: 1.3396 - val_loss
      : 15.4329 - val_mean_absolute_error: 2.
4428
366 Epoch 150/1000
367   - 0s - loss: 3.7479 -
      mean_absolute_error: 1.3033 - val_loss
      : 13.8370 - val_mean_absolute_error: 2.
4211
368
369 Epoch 00150: val_mean_absolute_error
      did not improve from 2.41731
```

```
370 Epoch 151/1000
371   - 0s - loss: 3.7807 -
    mean_absolute_error: 1.3284 - val_loss
    : 14.6462 - val_mean_absolute_error: 2.
3955
372 Epoch 152/1000
373   - 0s - loss: 3.7666 -
    mean_absolute_error: 1.3265 - val_loss
    : 13.4395 - val_mean_absolute_error: 2.
4403
374 Epoch 153/1000
375   - 0s - loss: 3.8173 -
    mean_absolute_error: 1.3477 - val_loss
    : 13.7166 - val_mean_absolute_error: 2.
3924
376 Epoch 154/1000
377   - 0s - loss: 3.5425 -
    mean_absolute_error: 1.2959 - val_loss
    : 14.4431 - val_mean_absolute_error: 2.
6686
378 Epoch 155/1000
379   - 0s - loss: 3.7825 -
    mean_absolute_error: 1.3310 - val_loss
    : 13.8088 - val_mean_absolute_error: 2.
```

```
379 4688
380 Epoch 156/1000
381   - 0s - loss: 3.6538 -
      mean_absolute_error: 1.3102 - val_loss
      : 13.7611 - val_mean_absolute_error: 2.
4475
382 Epoch 157/1000
383   - 0s - loss: 3.7245 -
      mean_absolute_error: 1.3132 - val_loss
      : 15.0567 - val_mean_absolute_error: 2.
4247
384 Epoch 158/1000
385   - 0s - loss: 3.6386 -
      mean_absolute_error: 1.3548 - val_loss
      : 15.4886 - val_mean_absolute_error: 2.
5458
386 Epoch 159/1000
387   - 0s - loss: 3.7774 -
      mean_absolute_error: 1.3810 - val_loss
      : 14.2584 - val_mean_absolute_error: 2.
3867
388 Epoch 160/1000
389   - 0s - loss: 3.6316 -
      mean_absolute_error: 1.3275 - val_loss
```

```
389 : 13.9726 - val_mean_absolute_error: 2.4078
```

```
390
```

```
391 Epoch 00160: val_mean_absolute_error
improved from 2.41731 to 2.40778,
saving model to ./model/model_Epoch0160-
val_mean_absolute_error2.41.h5
```

```
392 Epoch 161/1000
```

```
393 - 0s - loss: 3.6482 -
mean_absolute_error: 1.2964 - val_loss
: 15.4859 - val_mean_absolute_error: 2.4212
```

```
394 Epoch 162/1000
```

```
395 - 0s - loss: 3.5675 -
mean_absolute_error: 1.2957 - val_loss
: 15.5034 - val_mean_absolute_error: 2.3820
```

```
396 Epoch 163/1000
```

```
397 - 0s - loss: 3.6060 -
mean_absolute_error: 1.2962 - val_loss
: 15.0549 - val_mean_absolute_error: 2.4616
```

```
398 Epoch 164/1000
```

```
399 - 0s - loss: 3.4726 -
```



```
399 mean_absolute_error: 1.3086 - val_loss
    : 14.9061 - val_mean_absolute_error: 2.
3588
400 Epoch 165/1000
401   - 0s - loss: 3.6794 -
    mean_absolute_error: 1.3153 - val_loss
    : 13.7839 - val_mean_absolute_error: 2.
4864
402 Epoch 166/1000
403   - 0s - loss: 3.7371 -
    mean_absolute_error: 1.3539 - val_loss
    : 13.9673 - val_mean_absolute_error: 2.
3452
404 Epoch 167/1000
405   - 0s - loss: 3.3578 -
    mean_absolute_error: 1.2785 - val_loss
    : 14.4485 - val_mean_absolute_error: 2.
4760
406 Epoch 168/1000
407   - 0s - loss: 3.3720 -
    mean_absolute_error: 1.2868 - val_loss
    : 14.1168 - val_mean_absolute_error: 2.
4263
408 Epoch 169/1000
```

```
409 - 0s - loss: 3.3311 -  
mean_absolute_error: 1.2700 - val_loss  
: 14.1818 - val_mean_absolute_error: 2.  
4602  
410 Epoch 170/1000  
411 - 0s - loss: 3.7841 -  
mean_absolute_error: 1.3124 - val_loss  
: 16.5750 - val_mean_absolute_error: 2.  
5096  
412  
413 Epoch 00170: val_mean_absolute_error  
did not improve from 2.40778  
414 Epoch 171/1000  
415 - 0s - loss: 3.5035 -  
mean_absolute_error: 1.3032 - val_loss  
: 15.9505 - val_mean_absolute_error: 2.  
4628  
416 Epoch 172/1000  
417 - 0s - loss: 3.4771 -  
mean_absolute_error: 1.2604 - val_loss  
: 13.5665 - val_mean_absolute_error: 2.  
5391  
418 Epoch 173/1000  
419 - 0s - loss: 3.3360 -
```

```
419 mean_absolute_error: 1.2582 - val_loss
    : 15.5843 - val_mean_absolute_error: 2.
4070
420 Epoch 174/1000
421   - 0s - loss: 3.4872 -
    mean_absolute_error: 1.2901 - val_loss
    : 14.3084 - val_mean_absolute_error: 2.
3939
422 Epoch 175/1000
423   - 0s - loss: 3.4222 -
    mean_absolute_error: 1.2782 - val_loss
    : 13.7511 - val_mean_absolute_error: 2.
4232
424 Epoch 176/1000
425   - 0s - loss: 3.3319 -
    mean_absolute_error: 1.2399 - val_loss
    : 13.6530 - val_mean_absolute_error: 2.
4643
426 Epoch 177/1000
427   - 0s - loss: 3.3470 -
    mean_absolute_error: 1.2410 - val_loss
    : 14.0897 - val_mean_absolute_error: 2.
4139
428 Epoch 178/1000
```

```
429 - 0s - loss: 3.1792 -  
mean_absolute_error: 1.2286 - val_loss  
: 14.6261 - val_mean_absolute_error: 2.  
4106  
430 Epoch 179/1000  
431 - 0s - loss: 3.3377 -  
mean_absolute_error: 1.2557 - val_loss  
: 15.8980 - val_mean_absolute_error: 2.  
5232  
432 Epoch 180/1000  
433 - 0s - loss: 3.2160 -  
mean_absolute_error: 1.2167 - val_loss  
: 14.7078 - val_mean_absolute_error: 2.  
4482  
434  
435 Epoch 00180: val_mean_absolute_error  
did not improve from 2.40778  
436 Epoch 181/1000  
437 - 0s - loss: 3.4325 -  
mean_absolute_error: 1.2511 - val_loss  
: 15.5223 - val_mean_absolute_error: 2.  
6207  
438 Epoch 182/1000  
439 - 0s - loss: 3.3135 -
```

```
439 mean_absolute_error: 1.2275 - val_loss
    : 13.6721 - val_mean_absolute_error: 2.
4526
440 Epoch 183/1000
441   - 0s - loss: 3.2691 -
    mean_absolute_error: 1.1872 - val_loss
    : 14.4087 - val_mean_absolute_error: 2.
4031
442 Epoch 184/1000
443   - 0s - loss: 3.1561 -
    mean_absolute_error: 1.2373 - val_loss
    : 14.4410 - val_mean_absolute_error: 2.
3893
444 Epoch 185/1000
445   - 0s - loss: 3.1449 -
    mean_absolute_error: 1.2159 - val_loss
    : 14.0137 - val_mean_absolute_error: 2.
4724
446 Epoch 186/1000
447   - 0s - loss: 3.1663 -
    mean_absolute_error: 1.2324 - val_loss
    : 13.9958 - val_mean_absolute_error: 2.
4142
448 Epoch 187/1000
```

```
449 - 0s - loss: 3.2256 -  
mean_absolute_error: 1.2207 - val_loss  
: 14.0745 - val_mean_absolute_error: 2.  
3685
```

```
450 Epoch 188/1000
```

```
451 - 0s - loss: 3.1972 -  
mean_absolute_error: 1.2269 - val_loss  
: 15.0055 - val_mean_absolute_error: 2.  
6795
```

```
452 Epoch 189/1000
```

```
453 - 0s - loss: 3.2783 -  
mean_absolute_error: 1.2509 - val_loss  
: 14.3020 - val_mean_absolute_error: 2.  
4139
```

```
454 Epoch 190/1000
```

```
455 - 0s - loss: 3.0791 -  
mean_absolute_error: 1.1898 - val_loss  
: 15.0499 - val_mean_absolute_error: 2.  
3961
```

```
456
```

```
457 Epoch 00190: val_mean_absolute_error  
improved from 2.40778 to 2.39609,  
saving model to ./model/model_Epoch0190  
-val_mean_absolute_error2.40.h5
```

```
458 Epoch 191/1000
459   - 0s - loss: 3.0325 -
      mean_absolute_error: 1.2678 - val_loss
      : 15.3679 - val_mean_absolute_error: 2.
      8008
460 Epoch 192/1000
461   - 0s - loss: 3.4531 -
      mean_absolute_error: 1.3084 - val_loss
      : 14.7711 - val_mean_absolute_error: 2.
      5330
462 Epoch 193/1000
463   - 0s - loss: 3.1292 -
      mean_absolute_error: 1.2138 - val_loss
      : 14.5937 - val_mean_absolute_error: 2.
      4041
464 Epoch 194/1000
465   - 0s - loss: 3.0802 -
      mean_absolute_error: 1.1800 - val_loss
      : 14.6046 - val_mean_absolute_error: 2.
      4718
466 Epoch 195/1000
467   - 0s - loss: 2.9206 -
      mean_absolute_error: 1.1623 - val_loss
      : 14.9742 - val_mean_absolute_error: 2.
```

```
467 3340
468 Epoch 196/1000
469   - 0s - loss: 3.0579 -
      mean_absolute_error: 1.2232 - val_loss
      : 14.2280 - val_mean_absolute_error: 2.
3048
470 Epoch 197/1000
471   - 0s - loss: 3.2301 -
      mean_absolute_error: 1.2337 - val_loss
      : 13.9735 - val_mean_absolute_error: 2.
3674
472 Epoch 198/1000
473   - 0s - loss: 3.0111 -
      mean_absolute_error: 1.1821 - val_loss
      : 16.7211 - val_mean_absolute_error: 2.
4829
474 Epoch 199/1000
475   - 0s - loss: 3.1437 -
      mean_absolute_error: 1.2537 - val_loss
      : 14.5429 - val_mean_absolute_error: 2.
4753
476 Epoch 200/1000
477   - 0s - loss: 2.9201 -
      mean_absolute_error: 1.1577 - val_loss
```



```
477 : 14.4668 - val_mean_absolute_error: 2.  
5071
```

```
478
```

```
479 Epoch 00200: val_mean_absolute_error  
did not improve from 2.39609
```

```
480 Epoch 201/1000
```

```
481 - 0s - loss: 2.8936 -  
mean_absolute_error: 1.2036 - val_loss  
: 15.0156 - val_mean_absolute_error: 2.  
7976
```

```
482 Epoch 202/1000
```

```
483 - 0s - loss: 3.0635 -  
mean_absolute_error: 1.1905 - val_loss  
: 15.3475 - val_mean_absolute_error: 2.  
4586
```

```
484 Epoch 203/1000
```

```
485 - 0s - loss: 2.8836 -  
mean_absolute_error: 1.2086 - val_loss  
: 14.6499 - val_mean_absolute_error: 2.  
4464
```

```
486 Epoch 204/1000
```

```
487 - 0s - loss: 3.0110 -  
mean_absolute_error: 1.2234 - val_loss  
: 15.2639 - val_mean_absolute_error: 2.
```

```
487 5076
488 Epoch 205/1000
489   - 0s - loss: 3.0484 -
      mean_absolute_error: 1.1808 - val_loss
      : 15.3061 - val_mean_absolute_error: 2.
3934
490 Epoch 206/1000
491   - 0s - loss: 2.9857 -
      mean_absolute_error: 1.1822 - val_loss
      : 14.4578 - val_mean_absolute_error: 2.
4569
492 Epoch 207/1000
493   - 0s - loss: 2.9652 -
      mean_absolute_error: 1.1830 - val_loss
      : 15.5116 - val_mean_absolute_error: 2.
4508
494 Epoch 208/1000
495   - 0s - loss: 3.0027 -
      mean_absolute_error: 1.1728 - val_loss
      : 16.9804 - val_mean_absolute_error: 2.
5010
496 Epoch 209/1000
497   - 0s - loss: 2.8897 -
      mean_absolute_error: 1.1776 - val_loss
```

```
497 : 14.4572 - val_mean_absolute_error: 2.
3800
498 Epoch 210/1000
499   - 0s - loss: 2.9027 -
mean_absolute_error: 1.1639 - val_loss
: 14.3953 - val_mean_absolute_error: 2.
5886
500
501 Epoch 00210: val_mean_absolute_error
did not improve from 2.39609
502 Epoch 211/1000
503   - 0s - loss: 2.8137 -
mean_absolute_error: 1.1649 - val_loss
: 16.7752 - val_mean_absolute_error: 2.
4754
504 Epoch 212/1000
505   - 0s - loss: 2.8919 -
mean_absolute_error: 1.1783 - val_loss
: 14.8504 - val_mean_absolute_error: 2.
6328
506 Epoch 213/1000
507   - 0s - loss: 3.0066 -
mean_absolute_error: 1.1837 - val_loss
: 14.8868 - val_mean_absolute_error: 2.
```

```
507 5250
508 Epoch 214/1000
509   - 0s - loss: 2.7766 -
      mean_absolute_error: 1.1697 - val_loss
      : 15.0705 - val_mean_absolute_error: 2.
6104
510 Epoch 215/1000
511   - 0s - loss: 2.9782 -
      mean_absolute_error: 1.2100 - val_loss
      : 18.5210 - val_mean_absolute_error: 2.
5921
512 Epoch 216/1000
513   - 0s - loss: 3.0009 -
      mean_absolute_error: 1.1735 - val_loss
      : 16.9730 - val_mean_absolute_error: 2.
3997
514 Epoch 217/1000
515   - 0s - loss: 3.0105 -
      mean_absolute_error: 1.1824 - val_loss
      : 14.4091 - val_mean_absolute_error: 2.
3876
516 Epoch 218/1000
517   - 0s - loss: 2.7362 -
      mean_absolute_error: 1.1455 - val_loss
```

```
517 : 14.2837 - val_mean_absolute_error: 2.
3787
518 Epoch 219/1000
519 - 0s - loss: 2.7011 -
mean_absolute_error: 1.1411 - val_loss
: 17.6959 - val_mean_absolute_error: 2.
6283
520 Epoch 220/1000
521 - 0s - loss: 2.7318 -
mean_absolute_error: 1.1455 - val_loss
: 14.2764 - val_mean_absolute_error: 2.
3704
522
523 Epoch 00220: val_mean_absolute_error
improved from 2.39609 to 2.37044,
saving model to ./model/model_Epoch0220
-val_mean_absolute_error2.37.h5
524 Epoch 221/1000
525 - 0s - loss: 2.6138 -
mean_absolute_error: 1.1449 - val_loss
: 14.9864 - val_mean_absolute_error: 2.
3624
526 Epoch 222/1000
527 - 0s - loss: 2.6574 -
```

```
527 mean_absolute_error: 1.1180 - val_loss
    : 16.6343 - val_mean_absolute_error: 2.
3688
```

```
528 Epoch 223/1000
```

```
529   - 0s - loss: 2.8195 -
    mean_absolute_error: 1.1688 - val_loss
    : 15.1107 - val_mean_absolute_error: 2.
3773
```

```
530 Epoch 224/1000
```

```
531   - 0s - loss: 2.7440 -
    mean_absolute_error: 1.1254 - val_loss
    : 15.2954 - val_mean_absolute_error: 2.
3837
```

```
532 Epoch 225/1000
```

```
533   - 0s - loss: 2.7820 -
    mean_absolute_error: 1.1146 - val_loss
    : 15.2769 - val_mean_absolute_error: 2.
6157
```

```
534 Epoch 226/1000
```

```
535   - 0s - loss: 2.6032 -
    mean_absolute_error: 1.1488 - val_loss
    : 14.2633 - val_mean_absolute_error: 2.
3651
```

```
536 Epoch 227/1000
```

```
537 - 0s - loss: 2.7146 -  
mean_absolute_error: 1.1339 - val_loss  
: 17.8000 - val_mean_absolute_error: 2.  
4554  
538 Epoch 228/1000  
539 - 0s - loss: 2.7311 -  
mean_absolute_error: 1.1468 - val_loss  
: 15.5700 - val_mean_absolute_error: 2.  
3963  
540 Epoch 229/1000  
541 - 0s - loss: 2.5778 -  
mean_absolute_error: 1.1225 - val_loss  
: 15.2746 - val_mean_absolute_error: 2.  
3713  
542 Epoch 230/1000  
543 - 0s - loss: 2.7418 -  
mean_absolute_error: 1.1692 - val_loss  
: 15.0234 - val_mean_absolute_error: 2.  
3743  
544  
545 Epoch 00230: val_mean_absolute_error  
did not improve from 2.37044  
546 Epoch 231/1000  
547 - 0s - loss: 2.6191 -
```

```
547 mean_absolute_error: 1.1256 - val_loss
    : 15.2519 - val_mean_absolute_error: 2.
4820
```

```
548 Epoch 232/1000
```

```
549   - 0s - loss: 2.7957 -
    mean_absolute_error: 1.1661 - val_loss
    : 14.9350 - val_mean_absolute_error: 2.
3477
```

```
550 Epoch 233/1000
```

```
551   - 0s - loss: 2.5147 -
    mean_absolute_error: 1.1031 - val_loss
    : 15.3568 - val_mean_absolute_error: 2.
7102
```

```
552 Epoch 234/1000
```

```
553   - 0s - loss: 2.6380 -
    mean_absolute_error: 1.1422 - val_loss
    : 14.9703 - val_mean_absolute_error: 2.
3754
```

```
554 Epoch 235/1000
```

```
555   - 0s - loss: 2.6223 -
    mean_absolute_error: 1.1284 - val_loss
    : 15.6622 - val_mean_absolute_error: 2.
3686
```

```
556 Epoch 236/1000
```



```
557 - 0s - loss: 2.5740 -  
mean_absolute_error: 1.1127 - val_loss  
: 14.2099 - val_mean_absolute_error: 2.  
4605  
558 Epoch 237/1000  
559 - 0s - loss: 2.5873 -  
mean_absolute_error: 1.1246 - val_loss  
: 15.8376 - val_mean_absolute_error: 2.  
3912  
560 Epoch 238/1000  
561 - 0s - loss: 2.7348 -  
mean_absolute_error: 1.1609 - val_loss  
: 14.4543 - val_mean_absolute_error: 2.  
3517  
562 Epoch 239/1000  
563 - 0s - loss: 2.4589 -  
mean_absolute_error: 1.0827 - val_loss  
: 14.9896 - val_mean_absolute_error: 2.  
3719  
564 Epoch 240/1000  
565 - 0s - loss: 2.4529 -  
mean_absolute_error: 1.0630 - val_loss  
: 15.6208 - val_mean_absolute_error: 2.  
3508
```

566

567 Epoch 00240: val\_mean\_absolute\_error  
improved from 2.37044 to 2.35075,  
saving model to ./model/model\_Epoch0240-  
val\_mean\_absolute\_error2.35.h5

568 Epoch 241/1000

569 - 0s - loss: 2.6008 -  
mean\_absolute\_error: 1.1054 - val\_loss  
: 15.1442 - val\_mean\_absolute\_error: 2.  
5803

570 Epoch 242/1000

571 - 0s - loss: 2.5024 -  
mean\_absolute\_error: 1.0556 - val\_loss  
: 16.2678 - val\_mean\_absolute\_error: 2.  
4531

572 Epoch 243/1000

573 - 0s - loss: 2.5392 -  
mean\_absolute\_error: 1.1391 - val\_loss  
: 15.8161 - val\_mean\_absolute\_error: 2.  
3862

574 Epoch 244/1000

575 - 0s - loss: 2.5439 -  
mean\_absolute\_error: 1.1179 - val\_loss  
: 15.7646 - val\_mean\_absolute\_error: 2.

```
575 3813
576 Epoch 245/1000
577   - 0s - loss: 2.5994 -
    mean_absolute_error: 1.1413 - val_loss
    : 15.3936 - val_mean_absolute_error: 2.
4186
578 Epoch 246/1000
579   - 0s - loss: 2.4311 -
    mean_absolute_error: 1.0650 - val_loss
    : 14.8946 - val_mean_absolute_error: 2.
4055
580 Epoch 247/1000
581   - 0s - loss: 2.5681 -
    mean_absolute_error: 1.0986 - val_loss
    : 14.8327 - val_mean_absolute_error: 2.
4875
582 Epoch 248/1000
583   - 0s - loss: 2.4337 -
    mean_absolute_error: 1.0475 - val_loss
    : 15.8474 - val_mean_absolute_error: 2.
3294
584 Epoch 249/1000
585   - 0s - loss: 2.3942 -
    mean_absolute_error: 1.0954 - val_loss
```

```
585 : 15.0135 - val_mean_absolute_error: 2.
7257
586 Epoch 250/1000
587 - 0s - loss: 2.4322 -
mean_absolute_error: 1.1058 - val_loss
: 14.9843 - val_mean_absolute_error: 2.
3462
588
589 Epoch 00250: val_mean_absolute_error
improved from 2.35075 to 2.34617,
saving model to ./model/model_Epoch0250
-val_mean_absolute_error2.35.h5
590 Epoch 251/1000
591 - 0s - loss: 2.4432 -
mean_absolute_error: 1.0795 - val_loss
: 15.1566 - val_mean_absolute_error: 2.
3375
592 Epoch 252/1000
593 - 0s - loss: 2.4293 -
mean_absolute_error: 1.1008 - val_loss
: 15.0765 - val_mean_absolute_error: 2.
6591
594 Epoch 253/1000
595 - 0s - loss: 2.6142 -
```

```
595 mean_absolute_error: 1.1886 - val_loss
    : 14.4562 - val_mean_absolute_error: 2.
5125
596 Epoch 254/1000
597   - 0s - loss: 2.4505 -
    mean_absolute_error: 1.0981 - val_loss
    : 15.0649 - val_mean_absolute_error: 2.
3752
598 Epoch 255/1000
599   - 0s - loss: 2.5812 -
    mean_absolute_error: 1.1018 - val_loss
    : 15.1408 - val_mean_absolute_error: 2.
3436
600 Epoch 256/1000
601   - 0s - loss: 2.2909 -
    mean_absolute_error: 1.0618 - val_loss
    : 15.7782 - val_mean_absolute_error: 2.
4280
602 Epoch 257/1000
603   - 0s - loss: 2.5267 -
    mean_absolute_error: 1.1237 - val_loss
    : 15.7746 - val_mean_absolute_error: 2.
3268
604 Epoch 258/1000
```

```
605 - 0s - loss: 2.3111 -  
mean_absolute_error: 1.0357 - val_loss  
: 15.1759 - val_mean_absolute_error: 2.  
5407  
606 Epoch 259/1000  
607 - 0s - loss: 2.4841 -  
mean_absolute_error: 1.0939 - val_loss  
: 15.6691 - val_mean_absolute_error: 2.  
5940  
608 Epoch 260/1000  
609 - 0s - loss: 2.5196 -  
mean_absolute_error: 1.0986 - val_loss  
: 14.4459 - val_mean_absolute_error: 2.  
5220  
610  
611 Epoch 00260: val_mean_absolute_error  
did not improve from 2.34617  
612 Epoch 261/1000  
613 - 0s - loss: 2.3573 -  
mean_absolute_error: 1.0628 - val_loss  
: 15.0700 - val_mean_absolute_error: 2.  
7376  
614 Epoch 262/1000  
615 - 0s - loss: 2.3871 -
```

```
615 mean_absolute_error: 1.1054 - val_loss
    : 14.6402 - val_mean_absolute_error: 2.
3826
616 Epoch 263/1000
617   - 0s - loss: 2.3120 -
    mean_absolute_error: 1.0613 - val_loss
    : 15.3541 - val_mean_absolute_error: 2.
3853
618 Epoch 264/1000
619   - 0s - loss: 2.2637 -
    mean_absolute_error: 1.0607 - val_loss
    : 14.9011 - val_mean_absolute_error: 2.
3870
620 Epoch 265/1000
621   - 0s - loss: 2.2324 -
    mean_absolute_error: 1.0240 - val_loss
    : 14.7012 - val_mean_absolute_error: 2.
3817
622 Epoch 266/1000
623   - 0s - loss: 2.3545 -
    mean_absolute_error: 1.0780 - val_loss
    : 14.7826 - val_mean_absolute_error: 2.
4492
624 Epoch 267/1000
```

```
625 - 0s - loss: 2.4608 -  
mean_absolute_error: 1.0838 - val_loss  
: 14.9630 - val_mean_absolute_error: 2.  
5956
```

```
626 Epoch 268/1000
```

```
627 - 0s - loss: 2.2883 -  
mean_absolute_error: 1.0278 - val_loss  
: 14.7649 - val_mean_absolute_error: 2.  
5545
```

```
628 Epoch 269/1000
```

```
629 - 0s - loss: 2.1454 -  
mean_absolute_error: 1.0071 - val_loss  
: 14.0932 - val_mean_absolute_error: 2.  
5414
```

```
630 Epoch 270/1000
```

```
631 - 0s - loss: 2.4364 -  
mean_absolute_error: 1.0835 - val_loss  
: 14.7341 - val_mean_absolute_error: 2.  
2787
```

```
632
```

```
633 Epoch 00270: val_mean_absolute_error  
improved from 2.34617 to 2.27868,  
saving model to ./model/model_Epoch0270  
-val_mean_absolute_error2.28.h5
```



```
634 Epoch 271/1000
635   - 0s - loss: 2.3224 -
      mean_absolute_error: 1.0494 - val_loss
      : 14.4093 - val_mean_absolute_error: 2.
      3278
636 Epoch 272/1000
637   - 0s - loss: 2.1714 -
      mean_absolute_error: 1.0398 - val_loss
      : 14.8482 - val_mean_absolute_error: 2.
      6968
638 Epoch 273/1000
639   - 0s - loss: 2.4665 -
      mean_absolute_error: 1.0828 - val_loss
      : 14.4018 - val_mean_absolute_error: 2.
      4534
640 Epoch 274/1000
641   - 0s - loss: 2.1426 -
      mean_absolute_error: 0.9815 - val_loss
      : 15.1314 - val_mean_absolute_error: 2.
      5856
642 Epoch 275/1000
643   - 0s - loss: 2.3871 -
      mean_absolute_error: 1.0624 - val_loss
      : 15.1847 - val_mean_absolute_error: 2.
```

```
643 4384
644 Epoch 276/1000
645   - 0s - loss: 2.2599 -
      mean_absolute_error: 1.0364 - val_loss
      : 14.0145 - val_mean_absolute_error: 2.
5249
646 Epoch 277/1000
647   - 0s - loss: 2.2694 -
      mean_absolute_error: 1.0616 - val_loss
      : 14.8227 - val_mean_absolute_error: 2.
2997
648 Epoch 278/1000
649   - 0s - loss: 2.1846 -
      mean_absolute_error: 1.0295 - val_loss
      : 14.9187 - val_mean_absolute_error: 2.
3189
650 Epoch 279/1000
651   - 0s - loss: 2.2912 -
      mean_absolute_error: 1.0752 - val_loss
      : 14.7807 - val_mean_absolute_error: 2.
4501
652 Epoch 280/1000
653   - 0s - loss: 2.2902 -
      mean_absolute_error: 1.0519 - val_loss
```

```
653 : 15.8950 - val_mean_absolute_error: 2.  
3306
```

```
654
```

```
655 Epoch 00280: val_mean_absolute_error  
did not improve from 2.27868
```

```
656 Epoch 281/1000
```

```
657 - 0s - loss: 2.2105 -  
mean_absolute_error: 1.0388 - val_loss  
: 17.8994 - val_mean_absolute_error: 2.  
4921
```

```
658 Epoch 282/1000
```

```
659 - 0s - loss: 2.0899 -  
mean_absolute_error: 1.0078 - val_loss  
: 17.7121 - val_mean_absolute_error: 2.  
7148
```

```
660 Epoch 283/1000
```

```
661 - 0s - loss: 2.4057 -  
mean_absolute_error: 1.0730 - val_loss  
: 15.2407 - val_mean_absolute_error: 2.  
6461
```

```
662 Epoch 284/1000
```

```
663 - 0s - loss: 2.1966 -  
mean_absolute_error: 1.0299 - val_loss  
: 15.8173 - val_mean_absolute_error: 2.
```

```
663 3053
664 Epoch 285/1000
665   - 0s - loss: 2.2464 -
      mean_absolute_error: 1.0205 - val_loss
      : 15.0818 - val_mean_absolute_error: 2.
4386
666 Epoch 286/1000
667   - 0s - loss: 2.1356 -
      mean_absolute_error: 1.0381 - val_loss
      : 16.1439 - val_mean_absolute_error: 2.
4709
668 Epoch 287/1000
669   - 0s - loss: 2.2523 -
      mean_absolute_error: 1.0469 - val_loss
      : 17.3776 - val_mean_absolute_error: 2.
6685
670 Epoch 288/1000
671   - 0s - loss: 2.3984 -
      mean_absolute_error: 1.0609 - val_loss
      : 17.4644 - val_mean_absolute_error: 2.
4816
672 Epoch 289/1000
673   - 0s - loss: 2.2076 -
      mean_absolute_error: 1.0211 - val_loss
```

```
673 : 14.8777 - val_mean_absolute_error: 2.
4257
674 Epoch 290/1000
675 - 0s - loss: 2.1017 -
mean_absolute_error: 1.0165 - val_loss
: 15.0906 - val_mean_absolute_error: 2.
3026
676
677 Epoch 00290: val_mean_absolute_error
did not improve from 2.27868
678 Epoch 291/1000
679 - 0s - loss: 2.1869 -
mean_absolute_error: 1.0559 - val_loss
: 14.0647 - val_mean_absolute_error: 2.
4907
680 Epoch 292/1000
681 - 0s - loss: 2.0737 -
mean_absolute_error: 0.9896 - val_loss
: 15.5242 - val_mean_absolute_error: 2.
2783
682 Epoch 293/1000
683 - 0s - loss: 2.3725 -
mean_absolute_error: 1.0535 - val_loss
: 15.0866 - val_mean_absolute_error: 2.
```

```
683 2942
684 Epoch 294/1000
685   - 0s - loss: 2.0685 -
      mean_absolute_error: 0.9988 - val_loss
      : 14.8762 - val_mean_absolute_error: 2.
3743
686 Epoch 295/1000
687   - 0s - loss: 2.2338 -
      mean_absolute_error: 1.0566 - val_loss
      : 15.0452 - val_mean_absolute_error: 2.
7630
688 Epoch 296/1000
689   - 0s - loss: 2.4116 -
      mean_absolute_error: 1.0665 - val_loss
      : 15.9036 - val_mean_absolute_error: 2.
3368
690 Epoch 297/1000
691   - 0s - loss: 2.0992 -
      mean_absolute_error: 0.9957 - val_loss
      : 14.5506 - val_mean_absolute_error: 2.
3696
692 Epoch 298/1000
693   - 0s - loss: 2.0936 -
      mean_absolute_error: 1.0134 - val_loss
```

```
693 : 15.2790 - val_mean_absolute_error: 2.
    2898
694 Epoch 299/1000
695   - 0s - loss: 2.1483 -
    mean_absolute_error: 1.0230 - val_loss
    : 14.8111 - val_mean_absolute_error: 2.
    4009
696 Epoch 300/1000
697   - 0s - loss: 2.1265 -
    mean_absolute_error: 1.0240 - val_loss
    : 14.7192 - val_mean_absolute_error: 2.
    2983
698
699 Epoch 00300: val_mean_absolute_error
    did not improve from 2.27868
700 Epoch 301/1000
701   - 0s - loss: 2.2190 -
    mean_absolute_error: 1.0188 - val_loss
    : 14.4182 - val_mean_absolute_error: 2.
    3559
702 Epoch 302/1000
703   - 0s - loss: 2.1514 -
    mean_absolute_error: 0.9979 - val_loss
    : 14.3621 - val_mean_absolute_error: 2.
```

```
703 4411
704 Epoch 303/1000
705   - 0s - loss: 2.0215 -
      mean_absolute_error: 1.0100 - val_loss
      : 14.2522 - val_mean_absolute_error: 2.
      4251
706 Epoch 304/1000
707   - 0s - loss: 1.9900 -
      mean_absolute_error: 0.9877 - val_loss
      : 14.7882 - val_mean_absolute_error: 2.
      3899
708 Epoch 305/1000
709   - 0s - loss: 2.0423 -
      mean_absolute_error: 1.0051 - val_loss
      : 14.9730 - val_mean_absolute_error: 2.
      5850
710 Epoch 306/1000
711   - 0s - loss: 2.2166 -
      mean_absolute_error: 1.0324 - val_loss
      : 14.2201 - val_mean_absolute_error: 2.
      4896
712 Epoch 307/1000
713   - 0s - loss: 2.0770 -
      mean_absolute_error: 0.9913 - val_loss
```



```
713 : 14.1805 - val_mean_absolute_error: 2.
3132
714 Epoch 308/1000
715 - 0s - loss: 1.9095 -
mean_absolute_error: 0.9435 - val_loss
: 15.3982 - val_mean_absolute_error: 2.
5432
716 Epoch 309/1000
717 - 0s - loss: 2.1437 -
mean_absolute_error: 1.0149 - val_loss
: 15.0632 - val_mean_absolute_error: 2.
3842
718 Epoch 310/1000
719 - 0s - loss: 2.0585 -
mean_absolute_error: 0.9797 - val_loss
: 17.7830 - val_mean_absolute_error: 2.
5849
720
721 Epoch 00310: val_mean_absolute_error
did not improve from 2.27868
722 Epoch 311/1000
723 - 0s - loss: 2.1620 -
mean_absolute_error: 1.0164 - val_loss
: 18.3972 - val_mean_absolute_error: 2.
```

```
723 5894
724 Epoch 312/1000
725 - 0s - loss: 1.9822 -
mean_absolute_error: 1.0062 - val_loss
: 14.3500 - val_mean_absolute_error: 2.
4273
726 Epoch 313/1000
727 - 0s - loss: 1.9594 -
mean_absolute_error: 0.9621 - val_loss
: 14.4013 - val_mean_absolute_error: 2.
3844
728 Epoch 314/1000
729 - 0s - loss: 2.0182 -
mean_absolute_error: 0.9850 - val_loss
: 15.0993 - val_mean_absolute_error: 2.
3840
730 Epoch 315/1000
731 - 0s - loss: 1.9406 -
mean_absolute_error: 0.9659 - val_loss
: 14.7852 - val_mean_absolute_error: 2.
3325
732 Epoch 316/1000
733 - 0s - loss: 2.0906 -
mean_absolute_error: 1.0039 - val_loss
```

```
733 : 15.2359 - val_mean_absolute_error: 2.
3019
734 Epoch 317/1000
735 - 0s - loss: 1.9706 -
mean_absolute_error: 1.0049 - val_loss
: 17.0828 - val_mean_absolute_error: 2.
6797
736 Epoch 318/1000
737 - 0s - loss: 2.0393 -
mean_absolute_error: 0.9737 - val_loss
: 15.0948 - val_mean_absolute_error: 2.
6181
738 Epoch 319/1000
739 - 0s - loss: 1.9211 -
mean_absolute_error: 0.9437 - val_loss
: 15.2936 - val_mean_absolute_error: 2.
3663
740 Epoch 320/1000
741 - 0s - loss: 2.0960 -
mean_absolute_error: 1.0314 - val_loss
: 14.3546 - val_mean_absolute_error: 2.
2714
742
743 Epoch 00320: val_mean_absolute_error
```

743 improved from 2.27868 to 2.27145,  
saving model to ./model/model\_Epoch0320  
-val\_mean\_absolute\_error2.27.h5

744 Epoch 321/1000

745 - 0s - loss: 1.9044 -  
mean\_absolute\_error: 0.9583 - val\_loss  
: 16.3305 - val\_mean\_absolute\_error: 2.  
4341

746 Epoch 322/1000

747 - 0s - loss: 2.1304 -  
mean\_absolute\_error: 1.0233 - val\_loss  
: 14.6590 - val\_mean\_absolute\_error: 2.  
5445

748 Epoch 323/1000

749 - 0s - loss: 1.9075 -  
mean\_absolute\_error: 0.9564 - val\_loss  
: 15.1806 - val\_mean\_absolute\_error: 2.  
2832

750 Epoch 324/1000

751 - 0s - loss: 2.0301 -  
mean\_absolute\_error: 0.9918 - val\_loss  
: 13.9229 - val\_mean\_absolute\_error: 2.  
5236

752 Epoch 325/1000

```
753 - 0s - loss: 1.9731 -  
mean_absolute_error: 0.9991 - val_loss  
: 14.6705 - val_mean_absolute_error: 2.  
3190  
754 Epoch 326/1000  
755 - 0s - loss: 1.9225 -  
mean_absolute_error: 0.9350 - val_loss  
: 14.5299 - val_mean_absolute_error: 2.  
4179  
756 Epoch 327/1000  
757 - 0s - loss: 1.9881 -  
mean_absolute_error: 0.9949 - val_loss  
: 14.5081 - val_mean_absolute_error: 2.  
2974  
758 Epoch 328/1000  
759 - 0s - loss: 1.7965 -  
mean_absolute_error: 0.9291 - val_loss  
: 13.3162 - val_mean_absolute_error: 2.  
3665  
760 Epoch 329/1000  
761 - 0s - loss: 1.9571 -  
mean_absolute_error: 0.9876 - val_loss  
: 14.3532 - val_mean_absolute_error: 2.  
4270
```

```
762 Epoch 330/1000
763   - 0s - loss: 1.8319 -
      mean_absolute_error: 0.9335 - val_loss
      : 21.1054 - val_mean_absolute_error: 2.
      9773
```

```
764
765 Epoch 00330: val_mean_absolute_error
      did not improve from 2.27145
```

```
766 Epoch 331/1000
767   - 0s - loss: 2.1491 -
      mean_absolute_error: 1.0649 - val_loss
      : 14.2655 - val_mean_absolute_error: 2.
      4132
```

```
768 Epoch 332/1000
769   - 0s - loss: 1.8056 -
      mean_absolute_error: 0.9295 - val_loss
      : 15.8299 - val_mean_absolute_error: 2.
      3233
```

```
770 Epoch 333/1000
771   - 0s - loss: 1.8669 -
      mean_absolute_error: 0.9938 - val_loss
      : 14.6616 - val_mean_absolute_error: 2.
      3220
```

```
772 Epoch 334/1000
```

```
773 - 0s - loss: 1.9868 -  
mean_absolute_error: 1.0057 - val_loss  
: 15.2658 - val_mean_absolute_error: 2.  
4762  
774 Epoch 335/1000  
775 - 0s - loss: 2.0014 -  
mean_absolute_error: 0.9835 - val_loss  
: 14.0339 - val_mean_absolute_error: 2.  
5222  
776 Epoch 336/1000  
777 - 0s - loss: 1.8816 -  
mean_absolute_error: 0.9597 - val_loss  
: 14.8914 - val_mean_absolute_error: 2.  
2979  
778 Epoch 337/1000  
779 - 0s - loss: 1.8513 -  
mean_absolute_error: 0.9512 - val_loss  
: 13.9345 - val_mean_absolute_error: 2.  
5279  
780 Epoch 338/1000  
781 - 0s - loss: 1.8177 -  
mean_absolute_error: 0.9484 - val_loss  
: 14.7740 - val_mean_absolute_error: 2.  
3942
```

```
782 Epoch 339/1000
783   - 0s - loss: 1.8739 -
    mean_absolute_error: 0.9610 - val_loss
    : 14.3029 - val_mean_absolute_error: 2.
    4728
784 Epoch 340/1000
785   - 0s - loss: 1.9201 -
    mean_absolute_error: 0.9598 - val_loss
    : 15.3677 - val_mean_absolute_error: 2.
    3744
786
787 Epoch 00340: val_mean_absolute_error
    did not improve from 2.27145
788 Epoch 341/1000
789   - 0s - loss: 1.8761 -
    mean_absolute_error: 0.9605 - val_loss
    : 14.2186 - val_mean_absolute_error: 2.
    3111
790 Epoch 342/1000
791   - 0s - loss: 1.9512 -
    mean_absolute_error: 0.9631 - val_loss
    : 16.1321 - val_mean_absolute_error: 2.
    3997
792 Epoch 343/1000
```



```
793 - 0s - loss: 1.7205 -  
mean_absolute_error: 0.9050 - val_loss  
: 14.8216 - val_mean_absolute_error: 2.  
5433  
794 Epoch 344/1000  
795 - 0s - loss: 1.8581 -  
mean_absolute_error: 0.9509 - val_loss  
: 14.5676 - val_mean_absolute_error: 2.  
3571  
796 Epoch 345/1000  
797 - 0s - loss: 1.8681 -  
mean_absolute_error: 0.9185 - val_loss  
: 14.2676 - val_mean_absolute_error: 2.  
2742  
798 Epoch 346/1000  
799 - 0s - loss: 1.8569 -  
mean_absolute_error: 0.9499 - val_loss  
: 16.2703 - val_mean_absolute_error: 2.  
5774  
800 Epoch 347/1000  
801 - 0s - loss: 1.8741 -  
mean_absolute_error: 0.9380 - val_loss  
: 16.2111 - val_mean_absolute_error: 2.  
7778
```

```
802 Epoch 348/1000
803   - 0s - loss: 1.9640 -
      mean_absolute_error: 0.9973 - val_loss
      : 15.2092 - val_mean_absolute_error: 2.
      3715
804 Epoch 349/1000
805   - 0s - loss: 1.8096 -
      mean_absolute_error: 0.9623 - val_loss
      : 15.0984 - val_mean_absolute_error: 2.
      3445
806 Epoch 350/1000
807   - 0s - loss: 1.8214 -
      mean_absolute_error: 0.9237 - val_loss
      : 14.6339 - val_mean_absolute_error: 2.
      5597
808
809 Epoch 00350: val_mean_absolute_error
      did not improve from 2.27145
810 Epoch 351/1000
811   - 0s - loss: 1.8210 -
      mean_absolute_error: 0.9425 - val_loss
      : 17.4362 - val_mean_absolute_error: 2.
      7120
812 Epoch 352/1000
```

```
813 - 0s - loss: 1.7342 -  
mean_absolute_error: 0.9100 - val_loss  
: 15.1502 - val_mean_absolute_error: 2.  
3620  
814 Epoch 353/1000  
815 - 0s - loss: 1.9354 -  
mean_absolute_error: 0.9664 - val_loss  
: 15.0888 - val_mean_absolute_error: 2.  
5070  
816 Epoch 354/1000  
817 - 0s - loss: 1.7956 -  
mean_absolute_error: 0.9404 - val_loss  
: 14.3861 - val_mean_absolute_error: 2.  
3516  
818 Epoch 355/1000  
819 - 0s - loss: 1.8224 -  
mean_absolute_error: 0.9497 - val_loss  
: 14.7000 - val_mean_absolute_error: 2.  
3006  
820 Epoch 356/1000  
821 - 0s - loss: 1.8560 -  
mean_absolute_error: 0.9431 - val_loss  
: 14.7024 - val_mean_absolute_error: 2.  
5029
```

```
822 Epoch 357/1000
823   - 0s - loss: 1.7473 -
      mean_absolute_error: 0.9165 - val_loss
      : 14.6018 - val_mean_absolute_error: 2.
      3737
824 Epoch 358/1000
825   - 0s - loss: 1.7857 -
      mean_absolute_error: 0.9338 - val_loss
      : 14.8053 - val_mean_absolute_error: 2.
      5303
826 Epoch 359/1000
827   - 0s - loss: 1.7929 -
      mean_absolute_error: 0.9273 - val_loss
      : 14.1050 - val_mean_absolute_error: 2.
      6251
828 Epoch 360/1000
829   - 0s - loss: 1.7815 -
      mean_absolute_error: 0.9280 - val_loss
      : 14.4603 - val_mean_absolute_error: 2.
      5000
830
831 Epoch 00360: val_mean_absolute_error
      did not improve from 2.27145
832 Epoch 361/1000
```

```
833 - 0s - loss: 1.7373 -  
mean_absolute_error: 0.9016 - val_loss  
: 18.0600 - val_mean_absolute_error: 2.  
5907  
834 Epoch 362/1000  
835 - 0s - loss: 1.7415 -  
mean_absolute_error: 0.9031 - val_loss  
: 14.2965 - val_mean_absolute_error: 2.  
5967  
836 Epoch 363/1000  
837 - 0s - loss: 1.6634 -  
mean_absolute_error: 0.9207 - val_loss  
: 17.7203 - val_mean_absolute_error: 2.  
6326  
838 Epoch 364/1000  
839 - 0s - loss: 1.7729 -  
mean_absolute_error: 0.9331 - val_loss  
: 13.7977 - val_mean_absolute_error: 2.  
2670  
840 Epoch 365/1000  
841 - 0s - loss: 1.8562 -  
mean_absolute_error: 0.9745 - val_loss  
: 14.5467 - val_mean_absolute_error: 2.  
3383
```

```
842 Epoch 366/1000
843   - 0s - loss: 1.8979 -
      mean_absolute_error: 0.9670 - val_loss
      : 13.8036 - val_mean_absolute_error: 2.
      5750
844 Epoch 367/1000
845   - 0s - loss: 1.8435 -
      mean_absolute_error: 0.9378 - val_loss
      : 14.6135 - val_mean_absolute_error: 2.
      4277
846 Epoch 368/1000
847   - 0s - loss: 1.6278 -
      mean_absolute_error: 0.8752 - val_loss
      : 16.4540 - val_mean_absolute_error: 2.
      7027
848 Epoch 369/1000
849   - 0s - loss: 1.7783 -
      mean_absolute_error: 0.9456 - val_loss
      : 14.2592 - val_mean_absolute_error: 2.
      4673
850 Epoch 370/1000
851   - 0s - loss: 1.7151 -
      mean_absolute_error: 0.9234 - val_loss
      : 17.0673 - val_mean_absolute_error: 2.
```

851 4163

852

853 Epoch 00370: val\_mean\_absolute\_error  
did not improve from 2.27145

854 Epoch 371/1000

855 - 0s - loss: 1.7692 -  
mean\_absolute\_error: 0.9461 - val\_loss  
: 15.7099 - val\_mean\_absolute\_error: 2.  
3627

856 Epoch 372/1000

857 - 0s - loss: 1.6933 -  
mean\_absolute\_error: 0.9023 - val\_loss  
: 15.2886 - val\_mean\_absolute\_error: 2.  
2896

858 Epoch 373/1000

859 - 0s - loss: 1.7778 -  
mean\_absolute\_error: 0.9383 - val\_loss  
: 16.2587 - val\_mean\_absolute\_error: 2.  
7210

860 Epoch 374/1000

861 - 0s - loss: 1.6023 -  
mean\_absolute\_error: 0.8796 - val\_loss  
: 15.8011 - val\_mean\_absolute\_error: 2.  
5128

```
862 Epoch 375/1000
863   - 0s - loss: 1.8604 -
      mean_absolute_error: 0.9409 - val_loss
      : 14.4902 - val_mean_absolute_error: 2.
      4034
864 Epoch 376/1000
865   - 0s - loss: 1.6783 -
      mean_absolute_error: 0.8907 - val_loss
      : 13.9359 - val_mean_absolute_error: 2.
      5030
866 Epoch 377/1000
867   - 0s - loss: 1.6818 -
      mean_absolute_error: 0.8767 - val_loss
      : 13.7573 - val_mean_absolute_error: 2.
      3566
868 Epoch 378/1000
869   - 0s - loss: 1.6994 -
      mean_absolute_error: 0.9062 - val_loss
      : 15.8080 - val_mean_absolute_error: 2.
      4070
870 Epoch 379/1000
871   - 0s - loss: 1.6933 -
      mean_absolute_error: 0.9031 - val_loss
      : 14.7378 - val_mean_absolute_error: 2.
```



```
871 3622
872 Epoch 380/1000
873   - 0s - loss: 1.6416 -
      mean_absolute_error: 0.8921 - val_loss
      : 14.9661 - val_mean_absolute_error: 2.
      2872
```

```
874
875 Epoch 00380: val_mean_absolute_error
      did not improve from 2.27145
876 Epoch 381/1000
877   - 0s - loss: 1.6134 -
      mean_absolute_error: 0.9259 - val_loss
      : 16.5761 - val_mean_absolute_error: 2.
      3802
```

```
878 Epoch 382/1000
879   - 0s - loss: 1.6450 -
      mean_absolute_error: 0.9083 - val_loss
      : 17.4253 - val_mean_absolute_error: 2.
      6104
```

```
880 Epoch 383/1000
881   - 0s - loss: 1.7753 -
      mean_absolute_error: 0.9175 - val_loss
      : 14.6023 - val_mean_absolute_error: 2.
      2901
```

```
882 Epoch 384/1000
883   - 0s - loss: 1.7055 -
      mean_absolute_error: 0.9131 - val_loss
      : 15.1426 - val_mean_absolute_error: 2.
      3702
884 Epoch 385/1000
885   - 0s - loss: 1.7887 -
      mean_absolute_error: 0.9227 - val_loss
      : 14.4321 - val_mean_absolute_error: 2.
      4473
886 Epoch 386/1000
887   - 0s - loss: 1.6610 -
      mean_absolute_error: 0.8954 - val_loss
      : 15.1463 - val_mean_absolute_error: 2.
      3196
888 Epoch 387/1000
889   - 0s - loss: 1.7963 -
      mean_absolute_error: 0.9470 - val_loss
      : 15.1860 - val_mean_absolute_error: 2.
      4367
890 Epoch 388/1000
891   - 0s - loss: 1.6807 -
      mean_absolute_error: 0.9047 - val_loss
      : 15.9110 - val_mean_absolute_error: 2.
```

```
891 4242
892 Epoch 389/1000
893   - 0s - loss: 1.6043 -
      mean_absolute_error: 0.8894 - val_loss
      : 14.4427 - val_mean_absolute_error: 2.
      4179
894 Epoch 390/1000
895   - 0s - loss: 1.5820 -
      mean_absolute_error: 0.8699 - val_loss
      : 14.6783 - val_mean_absolute_error: 2.
      3482
896
897 Epoch 00390: val_mean_absolute_error
      did not improve from 2.27145
898 Epoch 391/1000
899   - 0s - loss: 1.5256 -
      mean_absolute_error: 0.8605 - val_loss
      : 14.9009 - val_mean_absolute_error: 2.
      5439
900 Epoch 392/1000
901   - 0s - loss: 1.7398 -
      mean_absolute_error: 0.9394 - val_loss
      : 14.9995 - val_mean_absolute_error: 2.
      2908
```

```
902 Epoch 393/1000
903   - 0s - loss: 1.5851 -
    mean_absolute_error: 0.8801 - val_loss
    : 13.7876 - val_mean_absolute_error: 2.
    4453
904 Epoch 394/1000
905   - 0s - loss: 1.5952 -
    mean_absolute_error: 0.8765 - val_loss
    : 17.4869 - val_mean_absolute_error: 2.
    8696
906 Epoch 395/1000
907   - 0s - loss: 1.8694 -
    mean_absolute_error: 0.9696 - val_loss
    : 14.7726 - val_mean_absolute_error: 2.
    4959
908 Epoch 396/1000
909   - 0s - loss: 1.6441 -
    mean_absolute_error: 0.8979 - val_loss
    : 14.5916 - val_mean_absolute_error: 2.
    3750
910 Epoch 397/1000
911   - 0s - loss: 1.5268 -
    mean_absolute_error: 0.8862 - val_loss
    : 14.0669 - val_mean_absolute_error: 2.
```

```
911 5606
912 Epoch 398/1000
913   - 0s - loss: 1.5578 -
    mean_absolute_error: 0.8837 - val_loss
    : 15.1865 - val_mean_absolute_error: 2.
    6333
914 Epoch 399/1000
915   - 0s - loss: 1.4553 -
    mean_absolute_error: 0.8553 - val_loss
    : 14.7731 - val_mean_absolute_error: 2.
    3964
916 Epoch 400/1000
917   - 0s - loss: 1.6244 -
    mean_absolute_error: 0.8785 - val_loss
    : 14.2019 - val_mean_absolute_error: 2.
    3783
918
919 Epoch 00400: val_mean_absolute_error
    did not improve from 2.27145
920 Epoch 401/1000
921   - 0s - loss: 1.5265 -
    mean_absolute_error: 0.8490 - val_loss
    : 15.8551 - val_mean_absolute_error: 2.
    3821
```

```
922 Epoch 402/1000
923   - 0s - loss: 1.5826 -
    mean_absolute_error: 0.8850 - val_loss
    : 14.8380 - val_mean_absolute_error: 2.
    4585
924 Epoch 403/1000
925   - 0s - loss: 1.5689 -
    mean_absolute_error: 0.8784 - val_loss
    : 16.1503 - val_mean_absolute_error: 2.
    6888
926 Epoch 404/1000
927   - 0s - loss: 1.6717 -
    mean_absolute_error: 0.8748 - val_loss
    : 15.4891 - val_mean_absolute_error: 2.
    6911
928 Epoch 405/1000
929   - 0s - loss: 1.6368 -
    mean_absolute_error: 0.9024 - val_loss
    : 14.3793 - val_mean_absolute_error: 2.
    5549
930 Epoch 406/1000
931   - 0s - loss: 1.6422 -
    mean_absolute_error: 0.9109 - val_loss
    : 14.6986 - val_mean_absolute_error: 2.
```

```
931 4378
932 Epoch 407/1000
933   - 0s - loss: 1.5637 -
    mean_absolute_error: 0.8966 - val_loss
    : 14.7807 - val_mean_absolute_error: 2.
    3559
934 Epoch 408/1000
935   - 0s - loss: 1.4094 -
    mean_absolute_error: 0.8402 - val_loss
    : 14.4485 - val_mean_absolute_error: 2.
    6064
936 Epoch 409/1000
937   - 0s - loss: 1.6170 -
    mean_absolute_error: 0.9259 - val_loss
    : 14.0215 - val_mean_absolute_error: 2.
    5840
938 Epoch 410/1000
939   - 0s - loss: 1.5577 -
    mean_absolute_error: 0.8695 - val_loss
    : 15.3784 - val_mean_absolute_error: 2.
    4607
940
941 Epoch 00410: val_mean_absolute_error
    did not improve from 2.27145
```

```
942 Epoch 411/1000
943   - 0s - loss: 1.5460 -
    mean_absolute_error: 0.8509 - val_loss
    : 16.1367 - val_mean_absolute_error: 2.
    4798
944 Epoch 412/1000
945   - 0s - loss: 1.5820 -
    mean_absolute_error: 0.9083 - val_loss
    : 17.1534 - val_mean_absolute_error: 2.
    5110
946 Epoch 413/1000
947   - 0s - loss: 1.5085 -
    mean_absolute_error: 0.8568 - val_loss
    : 17.6400 - val_mean_absolute_error: 2.
    6912
948 Epoch 414/1000
949   - 0s - loss: 1.5304 -
    mean_absolute_error: 0.8518 - val_loss
    : 15.8153 - val_mean_absolute_error: 2.
    6365
950 Epoch 415/1000
951   - 0s - loss: 1.5678 -
    mean_absolute_error: 0.8866 - val_loss
    : 14.6939 - val_mean_absolute_error: 2.
```



```
951 3698
952 Epoch 416/1000
953   - 0s - loss: 1.5667 -
    mean_absolute_error: 0.8612 - val_loss
    : 17.1003 - val_mean_absolute_error: 2.
    4815
954 Epoch 417/1000
955   - 0s - loss: 1.4598 -
    mean_absolute_error: 0.8221 - val_loss
    : 16.0915 - val_mean_absolute_error: 2.
    4349
956 Epoch 418/1000
957   - 0s - loss: 1.5152 -
    mean_absolute_error: 0.8594 - val_loss
    : 15.1858 - val_mean_absolute_error: 2.
    8329
958 Epoch 419/1000
959   - 0s - loss: 1.6595 -
    mean_absolute_error: 0.8497 - val_loss
    : 14.8521 - val_mean_absolute_error: 2.
    3951
960 Epoch 420/1000
961   - 0s - loss: 1.5403 -
    mean_absolute_error: 0.8789 - val_loss
```

```
961 : 16.9877 - val_mean_absolute_error: 2.  
5383
```

```
962
```

```
963 Epoch 00420: val_mean_absolute_error  
did not improve from 2.27145
```

```
964 Epoch 421/1000
```

```
965 - 0s - loss: 1.6172 -  
mean_absolute_error: 0.9135 - val_loss  
: 15.1736 - val_mean_absolute_error: 2.  
3345
```

```
966 Epoch 422/1000
```

```
967 - 0s - loss: 1.4955 -  
mean_absolute_error: 0.8188 - val_loss  
: 17.9505 - val_mean_absolute_error: 2.  
5796
```

```
968 Epoch 423/1000
```

```
969 - 0s - loss: 1.4907 -  
mean_absolute_error: 0.8663 - val_loss  
: 14.5797 - val_mean_absolute_error: 2.  
3611
```

```
970 Epoch 424/1000
```

```
971 - 0s - loss: 1.4650 -  
mean_absolute_error: 0.8579 - val_loss  
: 15.2036 - val_mean_absolute_error: 2.
```

```
971 3454
972 Epoch 425/1000
973   - 0s - loss: 1.4667 -
    mean_absolute_error: 0.8461 - val_loss
    : 15.6535 - val_mean_absolute_error: 2.
    4220
974 Epoch 426/1000
975   - 0s - loss: 1.4136 -
    mean_absolute_error: 0.8390 - val_loss
    : 17.2592 - val_mean_absolute_error: 2.
    6836
976 Epoch 427/1000
977   - 0s - loss: 1.5410 -
    mean_absolute_error: 0.8668 - val_loss
    : 16.5571 - val_mean_absolute_error: 2.
    5599
978 Epoch 428/1000
979   - 0s - loss: 1.4628 -
    mean_absolute_error: 0.8832 - val_loss
    : 15.8646 - val_mean_absolute_error: 2.
    5955
980 Epoch 429/1000
981   - 0s - loss: 1.5375 -
    mean_absolute_error: 0.8511 - val_loss
```

```
981 : 18.8347 - val_mean_absolute_error: 2
    .7326
982 Epoch 430/1000
983 - 0s - loss: 1.6769 -
    mean_absolute_error: 0.8753 - val_loss
    : 15.2319 - val_mean_absolute_error: 2
    .3295
984
985 Epoch 00430: val_mean_absolute_error
    did not improve from 2.27145
986 Epoch 431/1000
987 - 0s - loss: 1.3058 -
    mean_absolute_error: 0.7730 - val_loss
    : 15.3075 - val_mean_absolute_error: 2
    .3513
988 Epoch 432/1000
989 - 0s - loss: 1.3868 -
    mean_absolute_error: 0.8283 - val_loss
    : 15.6137 - val_mean_absolute_error: 2
    .4583
990 Epoch 433/1000
991 - 0s - loss: 1.6272 -
    mean_absolute_error: 0.8747 - val_loss
    : 15.0205 - val_mean_absolute_error: 2
```

```
991 .5281
992 Epoch 434/1000
993   - 0s - loss: 1.4276 -
    mean_absolute_error: 0.8275 - val_loss
    : 15.9643 - val_mean_absolute_error: 2
    .5450
994 Epoch 435/1000
995   - 0s - loss: 1.4591 -
    mean_absolute_error: 0.8488 - val_loss
    : 20.0438 - val_mean_absolute_error: 2
    .7972
996 Epoch 436/1000
997   - 0s - loss: 1.3982 -
    mean_absolute_error: 0.8262 - val_loss
    : 15.1932 - val_mean_absolute_error: 2
    .3937
998 Epoch 437/1000
999   - 0s - loss: 1.4550 -
    mean_absolute_error: 0.8536 - val_loss
    : 18.5914 - val_mean_absolute_error: 2
    .8504
1000 Epoch 438/1000
1001   - 0s - loss: 1.6259 -
    mean_absolute_error: 0.9100 - val_loss
```

```
1001 : 15.2354 - val_mean_absolute_error: 2
      .3710
1002 Epoch 439/1000
1003   - 0s - loss: 1.3081 -
      mean_absolute_error: 0.7863 - val_loss
      : 17.3980 - val_mean_absolute_error: 2
      .6204
1004 Epoch 440/1000
1005   - 0s - loss: 1.3293 -
      mean_absolute_error: 0.8348 - val_loss
      : 15.9845 - val_mean_absolute_error: 2
      .3942
1006
1007 Epoch 00440: val_mean_absolute_error
      did not improve from 2.27145
1008 Epoch 441/1000
1009   - 0s - loss: 1.3628 -
      mean_absolute_error: 0.8196 - val_loss
      : 14.4156 - val_mean_absolute_error: 2
      .4726
1010 Epoch 442/1000
1011   - 0s - loss: 1.4007 -
      mean_absolute_error: 0.8278 - val_loss
      : 14.5330 - val_mean_absolute_error: 2
```

```
1011 .4101
1012 Epoch 443/1000
1013 - 0s - loss: 1.4291 -
      mean_absolute_error: 0.8231 - val_loss
      : 14.8725 - val_mean_absolute_error: 2
      .3667
1014 Epoch 444/1000
1015 - 0s - loss: 1.4626 -
      mean_absolute_error: 0.8637 - val_loss
      : 15.3642 - val_mean_absolute_error: 2
      .4931
1016 Epoch 445/1000
1017 - 0s - loss: 1.4324 -
      mean_absolute_error: 0.8284 - val_loss
      : 15.7642 - val_mean_absolute_error: 2
      .4326
1018 Epoch 446/1000
1019 - 0s - loss: 1.4509 -
      mean_absolute_error: 0.8361 - val_loss
      : 15.6925 - val_mean_absolute_error: 2
      .6291
1020 Epoch 447/1000
1021 - 0s - loss: 1.4961 -
      mean_absolute_error: 0.8988 - val_loss
```

```
1021 : 15.5553 - val_mean_absolute_error: 2
      .8454
1022 Epoch 448/1000
1023   - 0s - loss: 1.4837 -
      mean_absolute_error: 0.8402 - val_loss
      : 14.4739 - val_mean_absolute_error: 2
      .5801
1024 Epoch 449/1000
1025   - 0s - loss: 1.3236 -
      mean_absolute_error: 0.7962 - val_loss
      : 14.3991 - val_mean_absolute_error: 2
      .4022
1026 Epoch 450/1000
1027   - 0s - loss: 1.5571 -
      mean_absolute_error: 0.8556 - val_loss
      : 14.9049 - val_mean_absolute_error: 2
      .4115
1028
1029 Epoch 00450: val_mean_absolute_error
      did not improve from 2.27145
1030 Epoch 451/1000
1031   - 0s - loss: 1.3971 -
      mean_absolute_error: 0.8527 - val_loss
      : 15.0773 - val_mean_absolute_error: 2
```



```
1031 .3338
1032 Epoch 452/1000
1033 - 0s - loss: 1.2887 -
mean_absolute_error: 0.8023 - val_loss
: 15.3023 - val_mean_absolute_error: 2
.4272
1034 Epoch 453/1000
1035 - 0s - loss: 1.4644 -
mean_absolute_error: 0.8234 - val_loss
: 19.1902 - val_mean_absolute_error: 2
.7073
1036 Epoch 454/1000
1037 - 0s - loss: 1.4051 -
mean_absolute_error: 0.8392 - val_loss
: 14.5642 - val_mean_absolute_error: 2
.3859
1038 Epoch 455/1000
1039 - 0s - loss: 1.2673 -
mean_absolute_error: 0.8050 - val_loss
: 18.9792 - val_mean_absolute_error: 2
.8660
1040 Epoch 456/1000
1041 - 0s - loss: 1.5225 -
mean_absolute_error: 0.8396 - val_loss
```

```
1041 : 15.4417 - val_mean_absolute_error: 2
      .4268
1042 Epoch 457/1000
1043   - 0s - loss: 1.3151 -
      mean_absolute_error: 0.7995 - val_loss
      : 19.9485 - val_mean_absolute_error: 2
      .8092
1044 Epoch 458/1000
1045   - 0s - loss: 1.4512 -
      mean_absolute_error: 0.8037 - val_loss
      : 15.7246 - val_mean_absolute_error: 2
      .4018
1046 Epoch 459/1000
1047   - 0s - loss: 1.4020 -
      mean_absolute_error: 0.8271 - val_loss
      : 17.5909 - val_mean_absolute_error: 2
      .6094
1048 Epoch 460/1000
1049   - 0s - loss: 1.3030 -
      mean_absolute_error: 0.7813 - val_loss
      : 14.6603 - val_mean_absolute_error: 2
      .6147
1050
1051 Epoch 00460: val_mean_absolute_error
```

```
1051 did not improve from 2.27145
1052 Epoch 461/1000
1053   - 0s - loss: 1.5087 -
      mean_absolute_error: 0.8567 - val_loss
      : 14.5441 - val_mean_absolute_error: 2
      .5861
1054 Epoch 462/1000
1055   - 0s - loss: 1.2892 -
      mean_absolute_error: 0.8138 - val_loss
      : 15.2764 - val_mean_absolute_error: 2
      .6231
1056 Epoch 463/1000
1057   - 0s - loss: 1.4897 -
      mean_absolute_error: 0.8657 - val_loss
      : 15.2983 - val_mean_absolute_error: 2
      .4930
1058 Epoch 464/1000
1059   - 0s - loss: 1.3195 -
      mean_absolute_error: 0.8078 - val_loss
      : 15.4284 - val_mean_absolute_error: 2
      .3823
1060 Epoch 465/1000
1061   - 0s - loss: 1.3940 -
      mean_absolute_error: 0.8161 - val_loss
```

```
1061 : 15.0720 - val_mean_absolute_error: 2
      .6092
1062 Epoch 466/1000
1063   - 0s - loss: 1.2905 -
      mean_absolute_error: 0.7945 - val_loss
      : 15.2684 - val_mean_absolute_error: 2
      .4175
1064 Epoch 467/1000
1065   - 0s - loss: 1.2274 -
      mean_absolute_error: 0.7833 - val_loss
      : 16.9161 - val_mean_absolute_error: 2
      .6212
1066 Epoch 468/1000
1067   - 0s - loss: 1.3322 -
      mean_absolute_error: 0.8087 - val_loss
      : 14.9158 - val_mean_absolute_error: 2
      .5323
1068 Epoch 469/1000
1069   - 0s - loss: 1.3607 -
      mean_absolute_error: 0.8212 - val_loss
      : 16.3624 - val_mean_absolute_error: 2
      .6643
1070 Epoch 470/1000
1071   - 0s - loss: 1.5503 -
```

```
1071 mean_absolute_error: 0.8932 - val_loss
    : 16.8748 - val_mean_absolute_error: 2
    .4992
```

```
1072
```

```
1073 Epoch 00470: val_mean_absolute_error
    did not improve from 2.27145
```

```
1074 Epoch 471/1000
```

```
1075   - 0s - loss: 1.2256 -
    mean_absolute_error: 0.7580 - val_loss
    : 14.9030 - val_mean_absolute_error: 2
    .4341
```

```
1076 Epoch 472/1000
```

```
1077   - 0s - loss: 1.4342 -
    mean_absolute_error: 0.8194 - val_loss
    : 14.7591 - val_mean_absolute_error: 2
    .6166
```

```
1078 Epoch 473/1000
```

```
1079   - 0s - loss: 1.3237 -
    mean_absolute_error: 0.8207 - val_loss
    : 16.3062 - val_mean_absolute_error: 2
    .3999
```

```
1080 Epoch 474/1000
```

```
1081   - 0s - loss: 1.2162 -
    mean_absolute_error: 0.7516 - val_loss
```

```
1081 : 16.4537 - val_mean_absolute_error: 2
      .4970
1082 Epoch 475/1000
1083   - 0s - loss: 1.4666 -
      mean_absolute_error: 0.8611 - val_loss
      : 15.7008 - val_mean_absolute_error: 2
      .5088
1084 Epoch 476/1000
1085   - 0s - loss: 1.2968 -
      mean_absolute_error: 0.7949 - val_loss
      : 18.1673 - val_mean_absolute_error: 2
      .6694
1086 Epoch 477/1000
1087   - 0s - loss: 1.2855 -
      mean_absolute_error: 0.8071 - val_loss
      : 14.7456 - val_mean_absolute_error: 2
      .4184
1088 Epoch 478/1000
1089   - 0s - loss: 1.3059 -
      mean_absolute_error: 0.7914 - val_loss
      : 14.6637 - val_mean_absolute_error: 2
      .4728
1090 Epoch 479/1000
1091   - 0s - loss: 1.3966 -
```

```
1091 mean_absolute_error: 0.8065 - val_loss
    : 15.1528 - val_mean_absolute_error: 2
    .3998
1092 Epoch 480/1000
1093   - 0s - loss: 1.2551 -
    mean_absolute_error: 0.8049 - val_loss
    : 17.7753 - val_mean_absolute_error: 2
    .4862
1094
1095 Epoch 00480: val_mean_absolute_error
    did not improve from 2.27145
1096 Epoch 481/1000
1097   - 0s - loss: 1.3505 -
    mean_absolute_error: 0.8091 - val_loss
    : 15.9169 - val_mean_absolute_error: 2
    .4093
1098 Epoch 482/1000
1099   - 0s - loss: 1.4131 -
    mean_absolute_error: 0.8280 - val_loss
    : 17.2502 - val_mean_absolute_error: 2
    .5207
1100 Epoch 483/1000
1101   - 0s - loss: 1.2338 -
    mean_absolute_error: 0.7814 - val_loss
```

```
1101 : 15.2508 - val_mean_absolute_error: 2
      .4095
1102 Epoch 484/1000
1103   - 0s - loss: 1.2969 -
      mean_absolute_error: 0.8149 - val_loss
      : 14.5484 - val_mean_absolute_error: 2
      .3250
1104 Epoch 485/1000
1105   - 0s - loss: 1.1920 -
      mean_absolute_error: 0.7731 - val_loss
      : 15.1957 - val_mean_absolute_error: 2
      .4963
1106 Epoch 486/1000
1107   - 0s - loss: 1.1875 -
      mean_absolute_error: 0.7707 - val_loss
      : 16.9893 - val_mean_absolute_error: 2
      .5871
1108 Epoch 487/1000
1109   - 0s - loss: 1.3128 -
      mean_absolute_error: 0.7803 - val_loss
      : 17.5984 - val_mean_absolute_error: 2
      .7454
1110 Epoch 488/1000
1111   - 0s - loss: 1.2659 -
```



```
1111 mean_absolute_error: 0.8043 - val_loss
    : 15.3876 - val_mean_absolute_error: 2
    .4330
1112 Epoch 489/1000
1113   - 0s - loss: 1.4017 -
    mean_absolute_error: 0.8114 - val_loss
    : 14.4338 - val_mean_absolute_error: 2
    .3593
1114 Epoch 490/1000
1115   - 0s - loss: 1.1649 -
    mean_absolute_error: 0.7611 - val_loss
    : 16.0051 - val_mean_absolute_error: 2
    .7966
1116
1117 Epoch 00490: val_mean_absolute_error
    did not improve from 2.27145
1118 Epoch 491/1000
1119   - 0s - loss: 1.3737 -
    mean_absolute_error: 0.8045 - val_loss
    : 15.1115 - val_mean_absolute_error: 2
    .6791
1120 Epoch 492/1000
1121   - 0s - loss: 1.2330 -
    mean_absolute_error: 0.7887 - val_loss
```

```
1121 : 15.6028 - val_mean_absolute_error: 2
      .5256
1122 Epoch 493/1000
1123 - 0s - loss: 1.2611 -
      mean_absolute_error: 0.8166 - val_loss
      : 15.7584 - val_mean_absolute_error: 2
      .3912
1124 Epoch 494/1000
1125 - 0s - loss: 1.1281 -
      mean_absolute_error: 0.7397 - val_loss
      : 16.3958 - val_mean_absolute_error: 2
      .6471
1126 Epoch 495/1000
1127 - 0s - loss: 1.3735 -
      mean_absolute_error: 0.8313 - val_loss
      : 15.4732 - val_mean_absolute_error: 2
      .4508
1128 Epoch 496/1000
1129 - 0s - loss: 1.1828 -
      mean_absolute_error: 0.7373 - val_loss
      : 16.3920 - val_mean_absolute_error: 2
      .4376
1130 Epoch 497/1000
1131 - 0s - loss: 1.2645 -
```

```
1131 mean_absolute_error: 0.7769 - val_loss
    : 16.3004 - val_mean_absolute_error: 2
    .6934
1132 Epoch 498/1000
1133   - 0s - loss: 1.2139 -
    mean_absolute_error: 0.7595 - val_loss
    : 15.5810 - val_mean_absolute_error: 2
    .4897
1134 Epoch 499/1000
1135   - 0s - loss: 1.2810 -
    mean_absolute_error: 0.8055 - val_loss
    : 14.5886 - val_mean_absolute_error: 2
    .4171
1136 Epoch 500/1000
1137   - 0s - loss: 1.1713 -
    mean_absolute_error: 0.7646 - val_loss
    : 14.8072 - val_mean_absolute_error: 2
    .4505
1138
1139 Epoch 00500: val_mean_absolute_error
    did not improve from 2.27145
1140 Epoch 501/1000
1141   - 0s - loss: 1.1401 -
    mean_absolute_error: 0.7442 - val_loss
```

```
1141 : 16.5256 - val_mean_absolute_error: 2
      .9628
1142 Epoch 502/1000
1143   - 0s - loss: 1.2960 -
      mean_absolute_error: 0.8180 - val_loss
      : 15.9894 - val_mean_absolute_error: 2
      .5075
1144 Epoch 503/1000
1145   - 0s - loss: 1.2663 -
      mean_absolute_error: 0.7606 - val_loss
      : 15.3265 - val_mean_absolute_error: 2
      .3655
1146 Epoch 504/1000
1147   - 0s - loss: 1.0703 -
      mean_absolute_error: 0.7300 - val_loss
      : 19.3283 - val_mean_absolute_error: 2
      .9713
1148 Epoch 505/1000
1149   - 0s - loss: 1.3916 -
      mean_absolute_error: 0.8293 - val_loss
      : 17.3145 - val_mean_absolute_error: 2
      .6878
1150 Epoch 506/1000
1151   - 0s - loss: 1.2072 -
```

1151 mean\_absolute\_error: 0.7484 - val\_loss  
: 15.4758 - val\_mean\_absolute\_error: 2  
.6316

1152 Epoch 507/1000

1153 - 0s - loss: 1.2006 -  
mean\_absolute\_error: 0.7818 - val\_loss  
: 18.5131 - val\_mean\_absolute\_error: 2  
.6211

1154 Epoch 508/1000

1155 - 0s - loss: 1.3027 -  
mean\_absolute\_error: 0.7969 - val\_loss  
: 14.9026 - val\_mean\_absolute\_error: 2  
.5057

1156 Epoch 509/1000

1157 - 0s - loss: 1.1387 -  
mean\_absolute\_error: 0.7523 - val\_loss  
: 18.2849 - val\_mean\_absolute\_error: 2  
.7084

1158 Epoch 510/1000

1159 - 0s - loss: 1.2737 -  
mean\_absolute\_error: 0.8130 - val\_loss  
: 16.4456 - val\_mean\_absolute\_error: 2  
.6767

1160

```
1161 Epoch 00510: val_mean_absolute_error
    did not improve from 2.27145
1162 Epoch 511/1000
1163   - 0s - loss: 1.2203 -
    mean_absolute_error: 0.7552 - val_loss
    : 16.8861 - val_mean_absolute_error: 2
    .5124
1164 Epoch 512/1000
1165   - 0s - loss: 1.1526 -
    mean_absolute_error: 0.7325 - val_loss
    : 15.7856 - val_mean_absolute_error: 2
    .3900
1166 Epoch 513/1000
1167   - 0s - loss: 1.1987 -
    mean_absolute_error: 0.7545 - val_loss
    : 15.7422 - val_mean_absolute_error: 2
    .5285
1168 Epoch 514/1000
1169   - 0s - loss: 1.2977 -
    mean_absolute_error: 0.8010 - val_loss
    : 14.8514 - val_mean_absolute_error: 2
    .4741
1170 Epoch 515/1000
1171   - 0s - loss: 1.1687 -
```

```
1171 mean_absolute_error: 0.7342 - val_loss
    : 15.0756 - val_mean_absolute_error: 2
    .4965
1172 Epoch 516/1000
1173   - 0s - loss: 1.1685 -
    mean_absolute_error: 0.7614 - val_loss
    : 17.5996 - val_mean_absolute_error: 2
    .4957
1174 Epoch 517/1000
1175   - 0s - loss: 1.1728 -
    mean_absolute_error: 0.7651 - val_loss
    : 15.9004 - val_mean_absolute_error: 2
    .4394
1176 Epoch 518/1000
1177   - 0s - loss: 1.1861 -
    mean_absolute_error: 0.7540 - val_loss
    : 14.8998 - val_mean_absolute_error: 2
    .5178
1178 Epoch 519/1000
1179   - 0s - loss: 1.2011 -
    mean_absolute_error: 0.7823 - val_loss
    : 15.9766 - val_mean_absolute_error: 2
    .4388
1180 Epoch 520/1000
```

```
1181 - 0s - loss: 1.2713 -  
mean_absolute_error: 0.8041 - val_loss  
: 14.6186 - val_mean_absolute_error: 2  
.4689
```

```
1182
```

```
1183 Epoch 00520: val_mean_absolute_error  
did not improve from 2.27145
```

```
1184 Epoch 521/1000
```

```
1185 - 0s - loss: 1.2107 -  
mean_absolute_error: 0.7864 - val_loss  
: 15.3728 - val_mean_absolute_error: 2  
.4342
```

```
1186 Epoch 522/1000
```

```
1187 - 0s - loss: 1.1041 -  
mean_absolute_error: 0.7507 - val_loss  
: 17.1018 - val_mean_absolute_error: 2  
.7336
```

```
1188 Epoch 523/1000
```

```
1189 - 0s - loss: 1.2249 -  
mean_absolute_error: 0.7524 - val_loss  
: 17.0988 - val_mean_absolute_error: 2  
.4965
```

```
1190 Epoch 524/1000
```

```
1191 - 0s - loss: 1.1228 -
```



```
1191 mean_absolute_error: 0.7712 - val_loss
    : 14.8673 - val_mean_absolute_error: 2
    .5015
1192 Epoch 525/1000
1193   - 0s - loss: 1.2709 -
    mean_absolute_error: 0.8012 - val_loss
    : 15.8201 - val_mean_absolute_error: 2
    .3964
1194 Epoch 526/1000
1195   - 0s - loss: 1.1348 -
    mean_absolute_error: 0.7620 - val_loss
    : 15.2810 - val_mean_absolute_error: 2
    .5392
1196 Epoch 527/1000
1197   - 0s - loss: 1.0822 -
    mean_absolute_error: 0.7435 - val_loss
    : 14.8175 - val_mean_absolute_error: 2
    .4330
1198 Epoch 528/1000
1199   - 0s - loss: 1.0567 -
    mean_absolute_error: 0.7392 - val_loss
    : 15.7472 - val_mean_absolute_error: 2
    .4248
1200 Epoch 529/1000
```

```
1201 - 0s - loss: 1.1104 -  
mean_absolute_error: 0.7698 - val_loss  
: 14.6328 - val_mean_absolute_error: 2  
.4281  
1202 Epoch 530/1000  
1203 - 0s - loss: 1.1371 -  
mean_absolute_error: 0.7587 - val_loss  
: 16.6240 - val_mean_absolute_error: 2  
.5762  
1204  
1205 Epoch 00530: val_mean_absolute_error  
did not improve from 2.27145  
1206 Epoch 531/1000  
1207 - 0s - loss: 1.2592 -  
mean_absolute_error: 0.8047 - val_loss  
: 15.3908 - val_mean_absolute_error: 2  
.7560  
1208 Epoch 532/1000  
1209 - 0s - loss: 1.2205 -  
mean_absolute_error: 0.7665 - val_loss  
: 16.4352 - val_mean_absolute_error: 2  
.6085  
1210 Epoch 533/1000  
1211 - 0s - loss: 1.0486 -
```

```
1211 mean_absolute_error: 0.7024 - val_loss
    : 15.4206 - val_mean_absolute_error: 2
    .5990
1212 Epoch 534/1000
1213   - 0s - loss: 1.2704 -
    mean_absolute_error: 0.7940 - val_loss
    : 13.8953 - val_mean_absolute_error: 2
    .3832
1214 Epoch 535/1000
1215   - 0s - loss: 1.0888 -
    mean_absolute_error: 0.7388 - val_loss
    : 15.6881 - val_mean_absolute_error: 2
    .5560
1216 Epoch 536/1000
1217   - 0s - loss: 1.1907 -
    mean_absolute_error: 0.8168 - val_loss
    : 15.4936 - val_mean_absolute_error: 2
    .4512
1218 Epoch 537/1000
1219   - 0s - loss: 1.0547 -
    mean_absolute_error: 0.7200 - val_loss
    : 15.0234 - val_mean_absolute_error: 2
    .5007
1220 Epoch 538/1000
```

```
1221 - 0s - loss: 1.1309 -  
mean_absolute_error: 0.7643 - val_loss  
: 16.6951 - val_mean_absolute_error: 2  
.5372  
1222 Epoch 539/1000  
1223 - 0s - loss: 1.1964 -  
mean_absolute_error: 0.7802 - val_loss  
: 15.3503 - val_mean_absolute_error: 2  
.4188  
1224 Epoch 540/1000  
1225 - 0s - loss: 1.0484 -  
mean_absolute_error: 0.7184 - val_loss  
: 16.1602 - val_mean_absolute_error: 2  
.5117  
1226  
1227 Epoch 00540: val_mean_absolute_error  
did not improve from 2.27145  
1228 Epoch 541/1000  
1229 - 0s - loss: 1.1417 -  
mean_absolute_error: 0.7210 - val_loss  
: 15.5476 - val_mean_absolute_error: 2  
.5082  
1230 Epoch 542/1000  
1231 - 0s - loss: 1.1847 -
```

```
1231 mean_absolute_error: 0.7574 - val_loss
    : 16.0078 - val_mean_absolute_error: 2
    .7180
1232 Epoch 543/1000
1233   - 0s - loss: 1.1085 -
    mean_absolute_error: 0.7501 - val_loss
    : 15.3140 - val_mean_absolute_error: 2
    .5111
1234 Epoch 544/1000
1235   - 0s - loss: 1.1523 -
    mean_absolute_error: 0.7865 - val_loss
    : 16.7207 - val_mean_absolute_error: 2
    .7160
1236 Epoch 545/1000
1237   - 0s - loss: 1.1482 -
    mean_absolute_error: 0.7291 - val_loss
    : 17.7136 - val_mean_absolute_error: 2
    .5804
1238 Epoch 546/1000
1239   - 0s - loss: 1.0436 -
    mean_absolute_error: 0.7249 - val_loss
    : 15.9006 - val_mean_absolute_error: 2
    .6816
1240 Epoch 547/1000
```

```
1241 - 0s - loss: 1.1316 -  
mean_absolute_error: 0.7744 - val_loss  
: 14.9020 - val_mean_absolute_error: 2  
.4663  
1242 Epoch 548/1000  
1243 - 0s - loss: 1.2096 -  
mean_absolute_error: 0.7674 - val_loss  
: 16.5836 - val_mean_absolute_error: 2  
.5433  
1244 Epoch 549/1000  
1245 - 0s - loss: 0.9916 -  
mean_absolute_error: 0.6928 - val_loss  
: 14.8483 - val_mean_absolute_error: 2  
.4396  
1246 Epoch 550/1000  
1247 - 0s - loss: 1.1446 -  
mean_absolute_error: 0.7147 - val_loss  
: 16.4004 - val_mean_absolute_error: 2  
.5497  
1248  
1249 Epoch 00550: val_mean_absolute_error  
did not improve from 2.27145  
1250 Epoch 551/1000  
1251 - 0s - loss: 1.1096 -
```

```
1251 mean_absolute_error: 0.7530 - val_loss
    : 16.7857 - val_mean_absolute_error: 2
    .7493
1252 Epoch 552/1000
1253   - 0s - loss: 0.9906 -
    mean_absolute_error: 0.7012 - val_loss
    : 15.5075 - val_mean_absolute_error: 2
    .4599
1254 Epoch 553/1000
1255   - 0s - loss: 1.1053 -
    mean_absolute_error: 0.7312 - val_loss
    : 17.0847 - val_mean_absolute_error: 2
    .7049
1256 Epoch 554/1000
1257   - 0s - loss: 1.1201 -
    mean_absolute_error: 0.7683 - val_loss
    : 15.9519 - val_mean_absolute_error: 2
    .4837
1258 Epoch 555/1000
1259   - 0s - loss: 1.0272 -
    mean_absolute_error: 0.6958 - val_loss
    : 14.8749 - val_mean_absolute_error: 2
    .4116
1260 Epoch 556/1000
```

```
1261 - 0s - loss: 1.1338 -  
mean_absolute_error: 0.7472 - val_loss  
: 18.6068 - val_mean_absolute_error: 2  
.7300  
1262 Epoch 557/1000  
1263 - 0s - loss: 1.0409 -  
mean_absolute_error: 0.7036 - val_loss  
: 14.3853 - val_mean_absolute_error: 2  
.6002  
1264 Epoch 558/1000  
1265 - 0s - loss: 1.1817 -  
mean_absolute_error: 0.7849 - val_loss  
: 16.1267 - val_mean_absolute_error: 2  
.4243  
1266 Epoch 559/1000  
1267 - 0s - loss: 0.9760 -  
mean_absolute_error: 0.6788 - val_loss  
: 18.1097 - val_mean_absolute_error: 2  
.6415  
1268 Epoch 560/1000  
1269 - 0s - loss: 1.0192 -  
mean_absolute_error: 0.6878 - val_loss  
: 17.4000 - val_mean_absolute_error: 2  
.6626
```



1270

1271 Epoch 00560: val\_mean\_absolute\_error  
did not improve from 2.27145

1272 Epoch 561/1000

1273 - 0s - loss: 1.2120 -  
mean\_absolute\_error: 0.7563 - val\_loss  
: 16.6916 - val\_mean\_absolute\_error: 2  
.5377

1274 Epoch 562/1000

1275 - 0s - loss: 1.0474 -  
mean\_absolute\_error: 0.7252 - val\_loss  
: 16.9064 - val\_mean\_absolute\_error: 2  
.4685

1276 Epoch 563/1000

1277 - 0s - loss: 1.0926 -  
mean\_absolute\_error: 0.6930 - val\_loss  
: 15.4471 - val\_mean\_absolute\_error: 2  
.4929

1278 Epoch 564/1000

1279 - 0s - loss: 1.0113 -  
mean\_absolute\_error: 0.6863 - val\_loss  
: 16.0890 - val\_mean\_absolute\_error: 2  
.4758

1280 Epoch 565/1000

```
1281 - 0s - loss: 0.9898 -  
mean_absolute_error: 0.7094 - val_loss  
: 15.7249 - val_mean_absolute_error: 2  
.4610  
1282 Epoch 566/1000  
1283 - 0s - loss: 1.2219 -  
mean_absolute_error: 0.7774 - val_loss  
: 15.4472 - val_mean_absolute_error: 2  
.6599  
1284 Epoch 567/1000  
1285 - 0s - loss: 0.9965 -  
mean_absolute_error: 0.6906 - val_loss  
: 16.2965 - val_mean_absolute_error: 2  
.6515  
1286 Epoch 568/1000  
1287 - 0s - loss: 1.1054 -  
mean_absolute_error: 0.7461 - val_loss  
: 15.3475 - val_mean_absolute_error: 2  
.5411  
1288 Epoch 569/1000  
1289 - 0s - loss: 1.0357 -  
mean_absolute_error: 0.7273 - val_loss  
: 14.9734 - val_mean_absolute_error: 2  
.5937
```

```
1290 Epoch 570/1000
1291   - 0s - loss: 1.0734 -
      mean_absolute_error: 0.7291 - val_loss
      : 15.7664 - val_mean_absolute_error: 2
      .5684
1292
1293 Epoch 00570: val_mean_absolute_error
      did not improve from 2.27145
1294 Epoch 571/1000
1295   - 0s - loss: 0.9438 -
      mean_absolute_error: 0.6864 - val_loss
      : 16.7956 - val_mean_absolute_error: 2
      .5321
1296 Epoch 572/1000
1297   - 0s - loss: 0.9971 -
      mean_absolute_error: 0.7030 - val_loss
      : 16.5633 - val_mean_absolute_error: 2
      .5117
1298 Epoch 573/1000
1299   - 0s - loss: 1.2895 -
      mean_absolute_error: 0.7957 - val_loss
      : 15.2986 - val_mean_absolute_error: 2
      .4962
1300 Epoch 574/1000
```

```
1301 - 0s - loss: 0.9694 -  
mean_absolute_error: 0.6734 - val_loss  
: 16.6195 - val_mean_absolute_error: 2  
.5057  
1302 Epoch 575/1000  
1303 - 0s - loss: 1.0148 -  
mean_absolute_error: 0.7283 - val_loss  
: 15.0536 - val_mean_absolute_error: 2  
.5504  
1304 Epoch 576/1000  
1305 - 0s - loss: 1.0267 -  
mean_absolute_error: 0.7238 - val_loss  
: 15.4337 - val_mean_absolute_error: 2  
.4682  
1306 Epoch 577/1000  
1307 - 0s - loss: 1.0350 -  
mean_absolute_error: 0.7598 - val_loss  
: 15.8967 - val_mean_absolute_error: 2  
.4045  
1308 Epoch 578/1000  
1309 - 0s - loss: 0.9933 -  
mean_absolute_error: 0.6791 - val_loss  
: 16.3468 - val_mean_absolute_error: 2  
.5445
```

```
1310 Epoch 579/1000
1311   - 0s - loss: 0.9647 -
      mean_absolute_error: 0.6919 - val_loss
      : 15.9673 - val_mean_absolute_error: 2
      .4663
1312 Epoch 580/1000
1313   - 0s - loss: 1.1020 -
      mean_absolute_error: 0.7595 - val_loss
      : 15.7127 - val_mean_absolute_error: 2
      .4584
1314
1315 Epoch 00580: val_mean_absolute_error
      did not improve from 2.27145
1316 Epoch 581/1000
1317   - 0s - loss: 1.0150 -
      mean_absolute_error: 0.7029 - val_loss
      : 17.8870 - val_mean_absolute_error: 2
      .7185
1318 Epoch 582/1000
1319   - 0s - loss: 1.1045 -
      mean_absolute_error: 0.7641 - val_loss
      : 14.7648 - val_mean_absolute_error: 2
      .5566
1320 Epoch 583/1000
```

```
1321 - 0s - loss: 0.9429 -  
mean_absolute_error: 0.6690 - val_loss  
: 14.8035 - val_mean_absolute_error: 2  
.3601  
1322 Epoch 584/1000  
1323 - 0s - loss: 0.9086 -  
mean_absolute_error: 0.6864 - val_loss  
: 16.1707 - val_mean_absolute_error: 2  
.5260  
1324 Epoch 585/1000  
1325 - 0s - loss: 1.1285 -  
mean_absolute_error: 0.7440 - val_loss  
: 15.5448 - val_mean_absolute_error: 2  
.5359  
1326 Epoch 586/1000  
1327 - 0s - loss: 0.8914 -  
mean_absolute_error: 0.6624 - val_loss  
: 14.6672 - val_mean_absolute_error: 2  
.5597  
1328 Epoch 587/1000  
1329 - 0s - loss: 1.0296 -  
mean_absolute_error: 0.6932 - val_loss  
: 16.5798 - val_mean_absolute_error: 2  
.5109
```

```
1330 Epoch 588/1000
1331   - 0s - loss: 1.0805 -
      mean_absolute_error: 0.7622 - val_loss
      : 14.0567 - val_mean_absolute_error: 2
      .5173
1332 Epoch 589/1000
1333   - 0s - loss: 1.0159 -
      mean_absolute_error: 0.6921 - val_loss
      : 16.3922 - val_mean_absolute_error: 2
      .5428
1334 Epoch 590/1000
1335   - 0s - loss: 0.9891 -
      mean_absolute_error: 0.6812 - val_loss
      : 14.5644 - val_mean_absolute_error: 2
      .4590
1336
1337 Epoch 00590: val_mean_absolute_error
      did not improve from 2.27145
1338 Epoch 591/1000
1339   - 0s - loss: 0.9246 -
      mean_absolute_error: 0.6896 - val_loss
      : 15.6117 - val_mean_absolute_error: 2
      .7923
1340 Epoch 592/1000
```

```
1341 - 0s - loss: 0.9861 -  
mean_absolute_error: 0.6695 - val_loss  
: 20.9246 - val_mean_absolute_error: 3  
.0772  
1342 Epoch 593/1000  
1343 - 0s - loss: 1.0106 -  
mean_absolute_error: 0.7039 - val_loss  
: 15.9757 - val_mean_absolute_error: 2  
.5892  
1344 Epoch 594/1000  
1345 - 0s - loss: 0.9414 -  
mean_absolute_error: 0.6761 - val_loss  
: 15.8038 - val_mean_absolute_error: 2  
.5080  
1346 Epoch 595/1000  
1347 - 0s - loss: 1.0748 -  
mean_absolute_error: 0.7494 - val_loss  
: 15.8295 - val_mean_absolute_error: 2  
.4522  
1348 Epoch 596/1000  
1349 - 0s - loss: 1.0041 -  
mean_absolute_error: 0.6927 - val_loss  
: 20.5974 - val_mean_absolute_error: 2  
.9951
```



```
1350 Epoch 597/1000
1351   - 0s - loss: 0.9615 -
      mean_absolute_error: 0.6638 - val_loss
      : 16.4196 - val_mean_absolute_error: 2
      .5233
1352 Epoch 598/1000
1353   - 0s - loss: 0.9774 -
      mean_absolute_error: 0.7034 - val_loss
      : 14.8318 - val_mean_absolute_error: 2
      .4723
1354 Epoch 599/1000
1355   - 0s - loss: 0.9191 -
      mean_absolute_error: 0.6871 - val_loss
      : 15.5383 - val_mean_absolute_error: 2
      .5864
1356 Epoch 600/1000
1357   - 0s - loss: 0.9401 -
      mean_absolute_error: 0.6852 - val_loss
      : 16.3182 - val_mean_absolute_error: 2
      .4508
1358
1359 Epoch 00600: val_mean_absolute_error
      did not improve from 2.27145
1360 Epoch 601/1000
```

```
1361 - 0s - loss: 0.9160 -  
mean_absolute_error: 0.6826 - val_loss  
: 21.8737 - val_mean_absolute_error: 2  
.9629  
1362 Epoch 602/1000  
1363 - 0s - loss: 1.1036 -  
mean_absolute_error: 0.7146 - val_loss  
: 16.8618 - val_mean_absolute_error: 2  
.5318  
1364 Epoch 603/1000  
1365 - 0s - loss: 0.9826 -  
mean_absolute_error: 0.7074 - val_loss  
: 15.1595 - val_mean_absolute_error: 2  
.4592  
1366 Epoch 604/1000  
1367 - 0s - loss: 0.9723 -  
mean_absolute_error: 0.6911 - val_loss  
: 16.1134 - val_mean_absolute_error: 2  
.5443  
1368 Epoch 605/1000  
1369 - 0s - loss: 0.8849 -  
mean_absolute_error: 0.6692 - val_loss  
: 16.7139 - val_mean_absolute_error: 2  
.5478
```

```
1370 Epoch 606/1000
1371   - 0s - loss: 1.0341 -
      mean_absolute_error: 0.7263 - val_loss
      : 17.5221 - val_mean_absolute_error: 2
      .5845
1372 Epoch 607/1000
1373   - 0s - loss: 0.9539 -
      mean_absolute_error: 0.6880 - val_loss
      : 18.3696 - val_mean_absolute_error: 2
      .7222
1374 Epoch 608/1000
1375   - 0s - loss: 0.9886 -
      mean_absolute_error: 0.7177 - val_loss
      : 16.4442 - val_mean_absolute_error: 2
      .5998
1376 Epoch 609/1000
1377   - 0s - loss: 0.8937 -
      mean_absolute_error: 0.6618 - val_loss
      : 16.4178 - val_mean_absolute_error: 2
      .5082
1378 Epoch 610/1000
1379   - 0s - loss: 0.8943 -
      mean_absolute_error: 0.6373 - val_loss
      : 16.7073 - val_mean_absolute_error: 2
```

1379 .5036

1380

1381 Epoch 00610: val\_mean\_absolute\_error  
did not improve from 2.27145

1382 Epoch 611/1000

1383 - 0s - loss: 0.9927 -  
mean\_absolute\_error: 0.6998 - val\_loss  
: 15.1887 - val\_mean\_absolute\_error: 2  
.4434

1384 Epoch 612/1000

1385 - 0s - loss: 0.9773 -  
mean\_absolute\_error: 0.6776 - val\_loss  
: 16.1066 - val\_mean\_absolute\_error: 2  
.4547

1386 Epoch 613/1000

1387 - 0s - loss: 1.0034 -  
mean\_absolute\_error: 0.6924 - val\_loss  
: 15.2294 - val\_mean\_absolute\_error: 2  
.5382

1388 Epoch 614/1000

1389 - 0s - loss: 0.9403 -  
mean\_absolute\_error: 0.6990 - val\_loss  
: 18.3643 - val\_mean\_absolute\_error: 2  
.7493

```
1390 Epoch 615/1000
1391   - 0s - loss: 0.9747 -
      mean_absolute_error: 0.7099 - val_loss
      : 16.2775 - val_mean_absolute_error: 2
      .4851
1392 Epoch 616/1000
1393   - 0s - loss: 0.9687 -
      mean_absolute_error: 0.7027 - val_loss
      : 16.0529 - val_mean_absolute_error: 2
      .5654
1394 Epoch 617/1000
1395   - 0s - loss: 0.8666 -
      mean_absolute_error: 0.6625 - val_loss
      : 15.9365 - val_mean_absolute_error: 2
      .4823
1396 Epoch 618/1000
1397   - 0s - loss: 1.0553 -
      mean_absolute_error: 0.7035 - val_loss
      : 19.0673 - val_mean_absolute_error: 2
      .6390
1398 Epoch 619/1000
1399   - 0s - loss: 0.8778 -
      mean_absolute_error: 0.6699 - val_loss
      : 15.8789 - val_mean_absolute_error: 2
```

```
1399 .7092
1400 Epoch 620/1000
1401 - 0s - loss: 1.0213 -
mean_absolute_error: 0.7190 - val_loss
: 15.6931 - val_mean_absolute_error: 2
.4822
1402
1403 Epoch 00620: val_mean_absolute_error
did not improve from 2.27145
1404 Epoch 621/1000
1405 - 0s - loss: 0.8711 -
mean_absolute_error: 0.6687 - val_loss
: 18.0854 - val_mean_absolute_error: 2
.7449
1406 Epoch 622/1000
1407 - 0s - loss: 0.9233 -
mean_absolute_error: 0.6644 - val_loss
: 17.2886 - val_mean_absolute_error: 2
.5769
1408 Epoch 623/1000
1409 - 0s - loss: 1.0040 -
mean_absolute_error: 0.7015 - val_loss
: 16.0461 - val_mean_absolute_error: 2
.5405
```

```
1410 Epoch 624/1000
1411   - 0s - loss: 1.0004 -
      mean_absolute_error: 0.7169 - val_loss
      : 17.1249 - val_mean_absolute_error: 2
      .5196
1412 Epoch 625/1000
1413   - 0s - loss: 0.8563 -
      mean_absolute_error: 0.6352 - val_loss
      : 16.8850 - val_mean_absolute_error: 2
      .5045
1414 Epoch 626/1000
1415   - 0s - loss: 0.9067 -
      mean_absolute_error: 0.6808 - val_loss
      : 16.2611 - val_mean_absolute_error: 2
      .4639
1416 Epoch 627/1000
1417   - 0s - loss: 0.8891 -
      mean_absolute_error: 0.7037 - val_loss
      : 19.6090 - val_mean_absolute_error: 2
      .7837
1418 Epoch 628/1000
1419   - 0s - loss: 0.9056 -
      mean_absolute_error: 0.6816 - val_loss
      : 16.2371 - val_mean_absolute_error: 2
```

```
1419 .5517
1420 Epoch 629/1000
1421 - 0s - loss: 1.0224 -
      mean_absolute_error: 0.7098 - val_loss
      : 15.9218 - val_mean_absolute_error: 2
      .5396
1422 Epoch 630/1000
1423 - 0s - loss: 0.9434 -
      mean_absolute_error: 0.6855 - val_loss
      : 17.3052 - val_mean_absolute_error: 2
      .5340
1424
1425 Epoch 00630: val_mean_absolute_error
      did not improve from 2.27145
1426 Epoch 631/1000
1427 - 0s - loss: 0.9967 -
      mean_absolute_error: 0.7131 - val_loss
      : 15.9736 - val_mean_absolute_error: 2
      .4750
1428 Epoch 632/1000
1429 - 0s - loss: 0.9085 -
      mean_absolute_error: 0.6828 - val_loss
      : 16.8199 - val_mean_absolute_error: 2
      .5518
```



```
1430 Epoch 633/1000
1431   - 0s - loss: 0.9903 -
      mean_absolute_error: 0.7119 - val_loss
      : 17.1466 - val_mean_absolute_error: 2
      .5608
1432 Epoch 634/1000
1433   - 0s - loss: 0.8446 -
      mean_absolute_error: 0.6431 - val_loss
      : 16.6620 - val_mean_absolute_error: 2
      .5614
1434 Epoch 635/1000
1435   - 0s - loss: 0.9243 -
      mean_absolute_error: 0.6909 - val_loss
      : 17.6389 - val_mean_absolute_error: 2
      .7901
1436 Epoch 636/1000
1437   - 0s - loss: 0.8884 -
      mean_absolute_error: 0.6567 - val_loss
      : 20.5123 - val_mean_absolute_error: 2
      .8621
1438 Epoch 637/1000
1439   - 0s - loss: 0.8972 -
      mean_absolute_error: 0.6670 - val_loss
      : 16.7742 - val_mean_absolute_error: 2
```

```
1439 .5515
1440 Epoch 638/1000
1441   - 0s - loss: 0.9130 -
      mean_absolute_error: 0.6737 - val_loss
      : 18.5026 - val_mean_absolute_error: 2
      .7004
1442 Epoch 639/1000
1443   - 0s - loss: 0.8690 -
      mean_absolute_error: 0.6480 - val_loss
      : 16.3226 - val_mean_absolute_error: 2
      .5212
1444 Epoch 640/1000
1445   - 0s - loss: 0.7169 -
      mean_absolute_error: 0.6032 - val_loss
      : 19.2548 - val_mean_absolute_error: 2
      .7886
1446
1447 Epoch 00640: val_mean_absolute_error
      did not improve from 2.27145
1448 Epoch 641/1000
1449   - 0s - loss: 0.9977 -
      mean_absolute_error: 0.6990 - val_loss
      : 16.8885 - val_mean_absolute_error: 2
      .4982
```

```
1450 Epoch 642/1000
1451   - 0s - loss: 0.8281 -
      mean_absolute_error: 0.6298 - val_loss
      : 17.1108 - val_mean_absolute_error: 2
      .7374
1452 Epoch 643/1000
1453   - 0s - loss: 0.9467 -
      mean_absolute_error: 0.6725 - val_loss
      : 17.9800 - val_mean_absolute_error: 2
      .6793
1454 Epoch 644/1000
1455   - 0s - loss: 0.9540 -
      mean_absolute_error: 0.6772 - val_loss
      : 15.3514 - val_mean_absolute_error: 2
      .5548
1456 Epoch 645/1000
1457   - 0s - loss: 0.8386 -
      mean_absolute_error: 0.6205 - val_loss
      : 16.0369 - val_mean_absolute_error: 2
      .5612
1458 Epoch 646/1000
1459   - 0s - loss: 0.8442 -
      mean_absolute_error: 0.6632 - val_loss
      : 15.9009 - val_mean_absolute_error: 2
```

```
1459 .5908
1460 Epoch 647/1000
1461 - 0s - loss: 0.9433 -
      mean_absolute_error: 0.6884 - val_loss
      : 15.9830 - val_mean_absolute_error: 2
      .5242
1462 Epoch 648/1000
1463 - 0s - loss: 0.8980 -
      mean_absolute_error: 0.6796 - val_loss
      : 15.5912 - val_mean_absolute_error: 2
      .5207
1464 Epoch 649/1000
1465 - 0s - loss: 0.8322 -
      mean_absolute_error: 0.6450 - val_loss
      : 16.4784 - val_mean_absolute_error: 2
      .6119
1466 Epoch 650/1000
1467 - 0s - loss: 0.8854 -
      mean_absolute_error: 0.6570 - val_loss
      : 16.1515 - val_mean_absolute_error: 2
      .4956
1468
1469 Epoch 00650: val_mean_absolute_error
      did not improve from 2.27145
```

```
1470 Epoch 651/1000
1471   - 0s - loss: 0.8353 -
      mean_absolute_error: 0.6501 - val_loss
      : 16.6306 - val_mean_absolute_error: 2
      .8432
1472 Epoch 652/1000
1473   - 0s - loss: 1.0278 -
      mean_absolute_error: 0.6907 - val_loss
      : 16.1156 - val_mean_absolute_error: 2
      .6670
1474 Epoch 653/1000
1475   - 0s - loss: 0.8823 -
      mean_absolute_error: 0.6541 - val_loss
      : 15.0874 - val_mean_absolute_error: 2
      .4843
1476 Epoch 654/1000
1477   - 0s - loss: 0.8910 -
      mean_absolute_error: 0.6605 - val_loss
      : 16.4122 - val_mean_absolute_error: 2
      .5026
1478 Epoch 655/1000
1479   - 0s - loss: 0.9245 -
      mean_absolute_error: 0.6917 - val_loss
      : 18.1755 - val_mean_absolute_error: 2
```

```
1479 .6093
1480 Epoch 656/1000
1481 - 0s - loss: 0.9102 -
mean_absolute_error: 0.6702 - val_loss
: 15.9440 - val_mean_absolute_error: 2
.5154
1482 Epoch 657/1000
1483 - 0s - loss: 0.8774 -
mean_absolute_error: 0.6667 - val_loss
: 15.3666 - val_mean_absolute_error: 2
.4539
1484 Epoch 658/1000
1485 - 0s - loss: 0.7944 -
mean_absolute_error: 0.6379 - val_loss
: 17.4944 - val_mean_absolute_error: 2
.6199
1486 Epoch 659/1000
1487 - 0s - loss: 0.8826 -
mean_absolute_error: 0.6389 - val_loss
: 17.0152 - val_mean_absolute_error: 2
.5534
1488 Epoch 660/1000
1489 - 0s - loss: 0.9019 -
mean_absolute_error: 0.6783 - val_loss
```

1489 : 16.1862 - val\_mean\_absolute\_error: 2  
.6032

1490

1491 Epoch 00660: val\_mean\_absolute\_error  
did not improve from 2.27145

1492 Epoch 661/1000

1493 - 0s - loss: 0.8728 -  
mean\_absolute\_error: 0.6492 - val\_loss  
: 16.3833 - val\_mean\_absolute\_error: 2  
.7116

1494 Epoch 662/1000

1495 - 0s - loss: 0.8859 -  
mean\_absolute\_error: 0.6757 - val\_loss  
: 18.7516 - val\_mean\_absolute\_error: 2  
.7017

1496 Epoch 663/1000

1497 - 0s - loss: 0.8740 -  
mean\_absolute\_error: 0.6485 - val\_loss  
: 16.8844 - val\_mean\_absolute\_error: 2  
.6663

1498 Epoch 664/1000

1499 - 0s - loss: 0.9554 -  
mean\_absolute\_error: 0.6984 - val\_loss  
: 16.5952 - val\_mean\_absolute\_error: 2

```
1499 .5951
1500 Epoch 665/1000
1501   - 0s - loss: 0.8619 -
      mean_absolute_error: 0.6612 - val_loss
      : 17.0769 - val_mean_absolute_error: 2
      .6150
1502 Epoch 666/1000
1503   - 0s - loss: 0.9606 -
      mean_absolute_error: 0.6451 - val_loss
      : 16.9017 - val_mean_absolute_error: 2
      .5880
1504 Epoch 667/1000
1505   - 0s - loss: 0.8785 -
      mean_absolute_error: 0.6616 - val_loss
      : 16.1283 - val_mean_absolute_error: 2
      .4620
1506 Epoch 668/1000
1507   - 0s - loss: 0.9271 -
      mean_absolute_error: 0.6670 - val_loss
      : 16.3949 - val_mean_absolute_error: 2
      .5491
1508 Epoch 669/1000
1509   - 0s - loss: 0.8505 -
      mean_absolute_error: 0.6191 - val_loss
```



```
1509 : 18.0774 - val_mean_absolute_error: 2
      .6457
1510 Epoch 670/1000
1511   - 0s - loss: 0.9250 -
      mean_absolute_error: 0.6859 - val_loss
      : 17.2872 - val_mean_absolute_error: 2
      .5633
1512
1513 Epoch 00670: val_mean_absolute_error
      did not improve from 2.27145
1514 Epoch 671/1000
1515   - 0s - loss: 0.8633 -
      mean_absolute_error: 0.6282 - val_loss
      : 17.8498 - val_mean_absolute_error: 2
      .5656
1516 Epoch 672/1000
1517   - 0s - loss: 0.8118 -
      mean_absolute_error: 0.6395 - val_loss
      : 17.3336 - val_mean_absolute_error: 2
      .6605
1518 Epoch 673/1000
1519   - 0s - loss: 0.7218 -
      mean_absolute_error: 0.6242 - val_loss
      : 17.2049 - val_mean_absolute_error: 2
```

```
1519 .6260
1520 Epoch 674/1000
1521 - 0s - loss: 0.8899 -
      mean_absolute_error: 0.6488 - val_loss
      : 17.5089 - val_mean_absolute_error: 2
      .6644
1522 Epoch 675/1000
1523 - 0s - loss: 0.8596 -
      mean_absolute_error: 0.6575 - val_loss
      : 17.2298 - val_mean_absolute_error: 2
      .5192
1524 Epoch 676/1000
1525 - 0s - loss: 0.9019 -
      mean_absolute_error: 0.6692 - val_loss
      : 16.8239 - val_mean_absolute_error: 2
      .6076
1526 Epoch 677/1000
1527 - 0s - loss: 0.7896 -
      mean_absolute_error: 0.6364 - val_loss
      : 16.7833 - val_mean_absolute_error: 2
      .5331
1528 Epoch 678/1000
1529 - 0s - loss: 0.8147 -
      mean_absolute_error: 0.6437 - val_loss
```

```
1529 : 17.3848 - val_mean_absolute_error: 2
      .6141
1530 Epoch 679/1000
1531   - 0s - loss: 0.7820 -
      mean_absolute_error: 0.6065 - val_loss
      : 16.3575 - val_mean_absolute_error: 2
      .5214
1532 Epoch 680/1000
1533   - 0s - loss: 0.7758 -
      mean_absolute_error: 0.6404 - val_loss
      : 16.0698 - val_mean_absolute_error: 2
      .4400
1534
1535 Epoch 00680: val_mean_absolute_error
      did not improve from 2.27145
1536 Epoch 681/1000
1537   - 0s - loss: 0.8980 -
      mean_absolute_error: 0.6840 - val_loss
      : 16.8573 - val_mean_absolute_error: 2
      .5957
1538 Epoch 682/1000
1539   - 0s - loss: 0.7191 -
      mean_absolute_error: 0.5998 - val_loss
      : 16.5797 - val_mean_absolute_error: 2
```

```
1539 .5818
1540 Epoch 683/1000
1541   - 0s - loss: 0.7472 -
      mean_absolute_error: 0.6152 - val_loss
      : 16.2196 - val_mean_absolute_error: 2
      .4521
1542 Epoch 684/1000
1543   - 0s - loss: 0.8639 -
      mean_absolute_error: 0.6472 - val_loss
      : 16.6963 - val_mean_absolute_error: 2
      .5866
1544 Epoch 685/1000
1545   - 0s - loss: 0.8063 -
      mean_absolute_error: 0.6102 - val_loss
      : 18.4014 - val_mean_absolute_error: 2
      .6527
1546 Epoch 686/1000
1547   - 0s - loss: 0.8150 -
      mean_absolute_error: 0.6071 - val_loss
      : 18.1789 - val_mean_absolute_error: 3
      .0228
1548 Epoch 687/1000
1549   - 0s - loss: 0.9181 -
      mean_absolute_error: 0.6796 - val_loss
```

```
1549 : 16.2700 - val_mean_absolute_error: 2
      .6706
1550 Epoch 688/1000
1551   - 0s - loss: 0.8664 -
      mean_absolute_error: 0.6542 - val_loss
      : 17.6319 - val_mean_absolute_error: 2
      .7021
1552 Epoch 689/1000
1553   - 0s - loss: 0.7747 -
      mean_absolute_error: 0.6522 - val_loss
      : 16.3098 - val_mean_absolute_error: 2
      .5740
1554 Epoch 690/1000
1555   - 0s - loss: 0.7499 -
      mean_absolute_error: 0.6226 - val_loss
      : 18.8074 - val_mean_absolute_error: 2
      .7063
1556
1557 Epoch 00690: val_mean_absolute_error
      did not improve from 2.27145
1558 Epoch 691/1000
1559   - 0s - loss: 0.7839 -
      mean_absolute_error: 0.6341 - val_loss
      : 17.4748 - val_mean_absolute_error: 2
```

```
1559 .6668
1560 Epoch 692/1000
1561 - 0s - loss: 0.8677 -
      mean_absolute_error: 0.6749 - val_loss
      : 17.1215 - val_mean_absolute_error: 2
      .5193
1562 Epoch 693/1000
1563 - 0s - loss: 0.8444 -
      mean_absolute_error: 0.6421 - val_loss
      : 17.3120 - val_mean_absolute_error: 2
      .6819
1564 Epoch 694/1000
1565 - 0s - loss: 0.7749 -
      mean_absolute_error: 0.6412 - val_loss
      : 16.9903 - val_mean_absolute_error: 2
      .6076
1566 Epoch 695/1000
1567 - 0s - loss: 0.7683 -
      mean_absolute_error: 0.6173 - val_loss
      : 16.2455 - val_mean_absolute_error: 2
      .6079
1568 Epoch 696/1000
1569 - 0s - loss: 0.7912 -
      mean_absolute_error: 0.6434 - val_loss
```

```
1569 : 16.9322 - val_mean_absolute_error: 2
      .9000
1570 Epoch 697/1000
1571   - 0s - loss: 0.9582 -
      mean_absolute_error: 0.6911 - val_loss
      : 16.7571 - val_mean_absolute_error: 2
      .6060
1572 Epoch 698/1000
1573   - 0s - loss: 0.6157 -
      mean_absolute_error: 0.5575 - val_loss
      : 16.9949 - val_mean_absolute_error: 2
      .7992
1574 Epoch 699/1000
1575   - 0s - loss: 0.6880 -
      mean_absolute_error: 0.5904 - val_loss
      : 18.8194 - val_mean_absolute_error: 2
      .6615
1576 Epoch 700/1000
1577   - 0s - loss: 0.8967 -
      mean_absolute_error: 0.6572 - val_loss
      : 16.1925 - val_mean_absolute_error: 2
      .5512
1578
1579 Epoch 00700: val_mean_absolute_error
```

```
1579 did not improve from 2.27145
1580 Epoch 701/1000
1581   - 0s - loss: 0.7584 -
      mean_absolute_error: 0.6175 - val_loss
      : 16.3272 - val_mean_absolute_error: 2
      .5919
1582 Epoch 702/1000
1583   - 0s - loss: 0.7966 -
      mean_absolute_error: 0.6367 - val_loss
      : 16.6906 - val_mean_absolute_error: 2
      .6094
1584 Epoch 703/1000
1585   - 0s - loss: 0.7750 -
      mean_absolute_error: 0.6248 - val_loss
      : 16.2418 - val_mean_absolute_error: 2
      .5771
1586 Epoch 704/1000
1587   - 0s - loss: 0.7888 -
      mean_absolute_error: 0.6361 - val_loss
      : 16.7041 - val_mean_absolute_error: 2
      .5651
1588 Epoch 705/1000
1589   - 0s - loss: 0.7154 -
      mean_absolute_error: 0.6158 - val_loss
```



```
1589 : 17.8960 - val_mean_absolute_error: 2
      .6377
1590 Epoch 706/1000
1591   - 0s - loss: 0.8020 -
      mean_absolute_error: 0.6380 - val_loss
      : 16.6313 - val_mean_absolute_error: 2
      .6247
1592 Epoch 707/1000
1593   - 0s - loss: 0.7601 -
      mean_absolute_error: 0.6228 - val_loss
      : 15.6194 - val_mean_absolute_error: 2
      .5244
1594 Epoch 708/1000
1595   - 0s - loss: 0.7783 -
      mean_absolute_error: 0.6168 - val_loss
      : 18.2392 - val_mean_absolute_error: 2
      .7411
1596 Epoch 709/1000
1597   - 0s - loss: 0.7064 -
      mean_absolute_error: 0.5631 - val_loss
      : 15.3107 - val_mean_absolute_error: 2
      .5308
1598 Epoch 710/1000
1599   - 0s - loss: 0.7288 -
```

1599 mean\_absolute\_error: 0.6053 - val\_loss  
: 16.6945 - val\_mean\_absolute\_error: 2  
.5260

1600

1601 Epoch 00710: val\_mean\_absolute\_error  
did not improve from 2.27145

1602 Epoch 711/1000

1603 - 0s - loss: 1.0681 -  
mean\_absolute\_error: 0.7037 - val\_loss  
: 17.3943 - val\_mean\_absolute\_error: 2  
.6248

1604 Epoch 712/1000

1605 - 0s - loss: 0.7678 -  
mean\_absolute\_error: 0.6246 - val\_loss  
: 17.0308 - val\_mean\_absolute\_error: 2  
.4681

1606 Epoch 713/1000

1607 - 0s - loss: 0.7335 -  
mean\_absolute\_error: 0.6035 - val\_loss  
: 16.6873 - val\_mean\_absolute\_error: 2  
.6267

1608 Epoch 714/1000

1609 - 0s - loss: 0.8000 -  
mean\_absolute\_error: 0.6193 - val\_loss

```
1609 : 16.9649 - val_mean_absolute_error: 2
      .6082
1610 Epoch 715/1000
1611   - 0s - loss: 0.7257 -
      mean_absolute_error: 0.6061 - val_loss
      : 17.7417 - val_mean_absolute_error: 2
      .5700
1612 Epoch 716/1000
1613   - 0s - loss: 0.6895 -
      mean_absolute_error: 0.5810 - val_loss
      : 20.7893 - val_mean_absolute_error: 2
      .9332
1614 Epoch 717/1000
1615   - 0s - loss: 0.9305 -
      mean_absolute_error: 0.6688 - val_loss
      : 16.4114 - val_mean_absolute_error: 2
      .5503
1616 Epoch 718/1000
1617   - 0s - loss: 0.8426 -
      mean_absolute_error: 0.6298 - val_loss
      : 18.2157 - val_mean_absolute_error: 2
      .6379
1618 Epoch 719/1000
1619   - 0s - loss: 0.6632 -
```

```
1619 mean_absolute_error: 0.5685 - val_loss
    : 18.2132 - val_mean_absolute_error: 2
    .6669
1620 Epoch 720/1000
1621   - 0s - loss: 0.7069 -
    mean_absolute_error: 0.5746 - val_loss
    : 18.5604 - val_mean_absolute_error: 2
    .8619
1622
1623 Epoch 00720: val_mean_absolute_error
    did not improve from 2.27145
1624 Epoch 721/1000
1625   - 0s - loss: 0.7917 -
    mean_absolute_error: 0.6178 - val_loss
    : 17.9178 - val_mean_absolute_error: 2
    .5906
1626 Epoch 722/1000
1627   - 0s - loss: 0.7402 -
    mean_absolute_error: 0.5992 - val_loss
    : 16.8080 - val_mean_absolute_error: 2
    .5265
1628 Epoch 723/1000
1629   - 0s - loss: 0.6964 -
    mean_absolute_error: 0.6004 - val_loss
```

```
1629 : 16.4410 - val_mean_absolute_error: 2
      .5041
1630 Epoch 724/1000
1631   - 0s - loss: 0.7960 -
      mean_absolute_error: 0.6334 - val_loss
      : 17.9412 - val_mean_absolute_error: 2
      .7612
1632 Epoch 725/1000
1633   - 0s - loss: 0.7539 -
      mean_absolute_error: 0.6082 - val_loss
      : 15.7632 - val_mean_absolute_error: 2
      .6176
1634 Epoch 726/1000
1635   - 0s - loss: 0.8370 -
      mean_absolute_error: 0.6627 - val_loss
      : 16.8308 - val_mean_absolute_error: 2
      .6258
1636 Epoch 727/1000
1637   - 0s - loss: 0.7276 -
      mean_absolute_error: 0.5841 - val_loss
      : 18.5120 - val_mean_absolute_error: 2
      .7152
1638 Epoch 728/1000
1639   - 0s - loss: 0.7036 -
```

```
1639 mean_absolute_error: 0.6112 - val_loss
    : 16.9802 - val_mean_absolute_error: 2
    .6351
1640 Epoch 729/1000
1641   - 0s - loss: 0.7982 -
    mean_absolute_error: 0.6444 - val_loss
    : 17.1027 - val_mean_absolute_error: 2
    .6621
1642 Epoch 730/1000
1643   - 0s - loss: 0.7253 -
    mean_absolute_error: 0.5898 - val_loss
    : 17.8900 - val_mean_absolute_error: 2
    .6783
1644
1645 Epoch 00730: val_mean_absolute_error
    did not improve from 2.27145
1646 Epoch 731/1000
1647   - 0s - loss: 0.6452 -
    mean_absolute_error: 0.5826 - val_loss
    : 16.5597 - val_mean_absolute_error: 2
    .5565
1648 Epoch 732/1000
1649   - 0s - loss: 0.8401 -
    mean_absolute_error: 0.6508 - val_loss
```

```
1649 : 18.0495 - val_mean_absolute_error: 2
      .7185
1650 Epoch 733/1000
1651 - 0s - loss: 0.7866 -
      mean_absolute_error: 0.6259 - val_loss
      : 16.6836 - val_mean_absolute_error: 2
      .6347
1652 Epoch 734/1000
1653 - 0s - loss: 0.7258 -
      mean_absolute_error: 0.6154 - val_loss
      : 17.5846 - val_mean_absolute_error: 2
      .7759
1654 Epoch 735/1000
1655 - 0s - loss: 0.7844 -
      mean_absolute_error: 0.6080 - val_loss
      : 17.8534 - val_mean_absolute_error: 2
      .6082
1656 Epoch 736/1000
1657 - 0s - loss: 0.7682 -
      mean_absolute_error: 0.6295 - val_loss
      : 16.1343 - val_mean_absolute_error: 2
      .5348
1658 Epoch 737/1000
1659 - 0s - loss: 0.7881 -
```

```
1659 mean_absolute_error: 0.6357 - val_loss
    : 15.7933 - val_mean_absolute_error: 2
    .5284
1660 Epoch 738/1000
1661   - 0s - loss: 0.8030 -
    mean_absolute_error: 0.6501 - val_loss
    : 15.6813 - val_mean_absolute_error: 2
    .5846
1662 Epoch 739/1000
1663   - 0s - loss: 0.7815 -
    mean_absolute_error: 0.6147 - val_loss
    : 16.8932 - val_mean_absolute_error: 2
    .7228
1664 Epoch 740/1000
1665   - 0s - loss: 0.7858 -
    mean_absolute_error: 0.6547 - val_loss
    : 19.7938 - val_mean_absolute_error: 2
    .7852
1666
1667 Epoch 00740: val_mean_absolute_error
    did not improve from 2.27145
1668 Epoch 741/1000
1669   - 0s - loss: 0.7316 -
    mean_absolute_error: 0.6052 - val_loss
```



```
1669 : 16.8252 - val_mean_absolute_error: 2
      .5462
1670 Epoch 742/1000
1671   - 0s - loss: 0.6884 -
      mean_absolute_error: 0.5913 - val_loss
      : 16.7525 - val_mean_absolute_error: 2
      .5847
1672 Epoch 743/1000
1673   - 0s - loss: 0.7203 -
      mean_absolute_error: 0.6025 - val_loss
      : 17.2135 - val_mean_absolute_error: 2
      .6040
1674 Epoch 744/1000
1675   - 0s - loss: 0.7479 -
      mean_absolute_error: 0.6223 - val_loss
      : 16.5422 - val_mean_absolute_error: 2
      .6904
1676 Epoch 745/1000
1677   - 0s - loss: 0.8015 -
      mean_absolute_error: 0.6303 - val_loss
      : 17.8362 - val_mean_absolute_error: 2
      .7219
1678 Epoch 746/1000
1679   - 0s - loss: 0.7337 -
```

1679 mean\_absolute\_error: 0.5978 - val\_loss  
: 16.6784 - val\_mean\_absolute\_error: 2  
.6257

1680 Epoch 747/1000

1681 - 0s - loss: 0.7700 -  
mean\_absolute\_error: 0.6259 - val\_loss  
: 16.8470 - val\_mean\_absolute\_error: 2  
.6858

1682 Epoch 748/1000

1683 - 0s - loss: 0.7626 -  
mean\_absolute\_error: 0.6150 - val\_loss  
: 15.9177 - val\_mean\_absolute\_error: 2  
.6332

1684 Epoch 749/1000

1685 - 0s - loss: 0.7206 -  
mean\_absolute\_error: 0.6104 - val\_loss  
: 16.3843 - val\_mean\_absolute\_error: 2  
.5607

1686 Epoch 750/1000

1687 - 0s - loss: 0.7223 -  
mean\_absolute\_error: 0.6162 - val\_loss  
: 17.5538 - val\_mean\_absolute\_error: 2  
.6203

1688

```
1689 Epoch 00750: val_mean_absolute_error
    did not improve from 2.27145
1690 Epoch 751/1000
1691   - 0s - loss: 0.9510 -
    mean_absolute_error: 0.6711 - val_loss
    : 17.1220 - val_mean_absolute_error: 2
    .5857
1692 Epoch 752/1000
1693   - 0s - loss: 0.7195 -
    mean_absolute_error: 0.5772 - val_loss
    : 17.3871 - val_mean_absolute_error: 2
    .5886
1694 Epoch 753/1000
1695   - 0s - loss: 0.6988 -
    mean_absolute_error: 0.5479 - val_loss
    : 20.5904 - val_mean_absolute_error: 2
    .9169
1696 Epoch 754/1000
1697   - 0s - loss: 0.7470 -
    mean_absolute_error: 0.6318 - val_loss
    : 17.2776 - val_mean_absolute_error: 2
    .5705
1698 Epoch 755/1000
1699   - 0s - loss: 0.8373 -
```

```
1699 mean_absolute_error: 0.6178 - val_loss
    : 17.7498 - val_mean_absolute_error: 2
    .6970
1700 Epoch 756/1000
1701   - 0s - loss: 0.6051 -
    mean_absolute_error: 0.5568 - val_loss
    : 17.2314 - val_mean_absolute_error: 2
    .5923
1702 Epoch 757/1000
1703   - 0s - loss: 0.7193 -
    mean_absolute_error: 0.6184 - val_loss
    : 17.4023 - val_mean_absolute_error: 2
    .5904
1704 Epoch 758/1000
1705   - 0s - loss: 0.6826 -
    mean_absolute_error: 0.5828 - val_loss
    : 19.5870 - val_mean_absolute_error: 2
    .8417
1706 Epoch 759/1000
1707   - 0s - loss: 0.6917 -
    mean_absolute_error: 0.5991 - val_loss
    : 16.5196 - val_mean_absolute_error: 2
    .6300
1708 Epoch 760/1000
```

```
1709 - 0s - loss: 0.7400 -  
mean_absolute_error: 0.6104 - val_loss  
: 16.1504 - val_mean_absolute_error: 2  
.7160
```

```
1710
```

```
1711 Epoch 00760: val_mean_absolute_error  
did not improve from 2.27145
```

```
1712 Epoch 761/1000
```

```
1713 - 0s - loss: 0.7397 -  
mean_absolute_error: 0.5874 - val_loss  
: 16.3383 - val_mean_absolute_error: 2  
.6045
```

```
1714 Epoch 762/1000
```

```
1715 - 0s - loss: 0.7089 -  
mean_absolute_error: 0.5922 - val_loss  
: 17.5507 - val_mean_absolute_error: 2  
.6237
```

```
1716 Epoch 763/1000
```

```
1717 - 0s - loss: 0.9247 -  
mean_absolute_error: 0.7083 - val_loss  
: 15.3323 - val_mean_absolute_error: 2  
.5655
```

```
1718 Epoch 764/1000
```

```
1719 - 0s - loss: 0.7284 -
```

```
1719 mean_absolute_error: 0.6062 - val_loss
    : 18.2277 - val_mean_absolute_error: 2
    .6848
1720 Epoch 765/1000
1721   - 0s - loss: 0.7474 -
    mean_absolute_error: 0.6267 - val_loss
    : 16.3763 - val_mean_absolute_error: 2
    .5686
1722 Epoch 766/1000
1723   - 0s - loss: 0.6500 -
    mean_absolute_error: 0.5561 - val_loss
    : 16.3486 - val_mean_absolute_error: 2
    .6133
1724 Epoch 767/1000
1725   - 0s - loss: 0.6850 -
    mean_absolute_error: 0.6066 - val_loss
    : 16.4459 - val_mean_absolute_error: 2
    .5737
1726 Epoch 768/1000
1727   - 0s - loss: 0.7427 -
    mean_absolute_error: 0.6065 - val_loss
    : 16.3419 - val_mean_absolute_error: 2
    .6227
1728 Epoch 769/1000
```

```
1729 - 0s - loss: 0.7429 -  
      mean_absolute_error: 0.5910 - val_loss  
      : 16.9846 - val_mean_absolute_error: 2  
      .6277  
1730 Epoch 770/1000  
1731 - 0s - loss: 0.6887 -  
      mean_absolute_error: 0.5725 - val_loss  
      : 16.7501 - val_mean_absolute_error: 2  
      .7758  
1732  
1733 Epoch 00770: val_mean_absolute_error  
      did not improve from 2.27145  
1734 Epoch 771/1000  
1735 - 0s - loss: 0.8071 -  
      mean_absolute_error: 0.6248 - val_loss  
      : 17.3262 - val_mean_absolute_error: 2  
      .5492  
1736 Epoch 772/1000  
1737 - 0s - loss: 0.7025 -  
      mean_absolute_error: 0.5680 - val_loss  
      : 22.8048 - val_mean_absolute_error: 3  
      .0358  
1738 Epoch 773/1000  
1739 - 0s - loss: 0.7865 -
```

```
1739 mean_absolute_error: 0.6035 - val_loss
    : 16.3908 - val_mean_absolute_error: 2
    .5624
1740 Epoch 774/1000
1741   - 0s - loss: 0.5898 -
    mean_absolute_error: 0.5477 - val_loss
    : 19.3585 - val_mean_absolute_error: 2
    .9240
1742 Epoch 775/1000
1743   - 0s - loss: 0.7860 -
    mean_absolute_error: 0.6255 - val_loss
    : 18.9217 - val_mean_absolute_error: 2
    .7078
1744 Epoch 776/1000
1745   - 0s - loss: 0.5856 -
    mean_absolute_error: 0.5279 - val_loss
    : 17.1676 - val_mean_absolute_error: 2
    .6037
1746 Epoch 777/1000
1747   - 0s - loss: 0.8468 -
    mean_absolute_error: 0.6630 - val_loss
    : 16.5500 - val_mean_absolute_error: 2
    .5980
1748 Epoch 778/1000
```



```
1749 - 0s - loss: 0.8030 -  
      mean_absolute_error: 0.6114 - val_loss  
      : 18.7050 - val_mean_absolute_error: 2  
      .6531  
1750 Epoch 779/1000  
1751 - 0s - loss: 0.7119 -  
      mean_absolute_error: 0.5825 - val_loss  
      : 16.1374 - val_mean_absolute_error: 2  
      .6355  
1752 Epoch 780/1000  
1753 - 0s - loss: 0.7871 -  
      mean_absolute_error: 0.6156 - val_loss  
      : 16.6313 - val_mean_absolute_error: 2  
      .5653  
1754  
1755 Epoch 00780: val_mean_absolute_error  
      did not improve from 2.27145  
1756 Epoch 781/1000  
1757 - 0s - loss: 0.7163 -  
      mean_absolute_error: 0.5897 - val_loss  
      : 17.4323 - val_mean_absolute_error: 2  
      .7066  
1758 Epoch 782/1000  
1759 - 0s - loss: 0.7653 -
```

```
1759 mean_absolute_error: 0.5971 - val_loss
    : 16.5572 - val_mean_absolute_error: 2
    .6073
1760 Epoch 783/1000
1761   - 0s - loss: 0.5888 -
    mean_absolute_error: 0.5287 - val_loss
    : 17.2432 - val_mean_absolute_error: 2
    .6081
1762 Epoch 784/1000
1763   - 0s - loss: 0.8922 -
    mean_absolute_error: 0.6620 - val_loss
    : 15.9242 - val_mean_absolute_error: 2
    .5564
1764 Epoch 785/1000
1765   - 0s - loss: 0.6159 -
    mean_absolute_error: 0.5584 - val_loss
    : 17.5648 - val_mean_absolute_error: 2
    .5273
1766 Epoch 786/1000
1767   - 0s - loss: 0.6818 -
    mean_absolute_error: 0.5777 - val_loss
    : 16.4343 - val_mean_absolute_error: 2
    .6038
1768 Epoch 787/1000
```

```
1769 - 0s - loss: 0.6440 -  
      mean_absolute_error: 0.5717 - val_loss  
      : 17.6443 - val_mean_absolute_error: 2  
      .6938  
1770 Epoch 788/1000  
1771 - 0s - loss: 0.6845 -  
      mean_absolute_error: 0.5774 - val_loss  
      : 17.2539 - val_mean_absolute_error: 2  
      .7434  
1772 Epoch 789/1000  
1773 - 0s - loss: 0.8213 -  
      mean_absolute_error: 0.6473 - val_loss  
      : 18.1050 - val_mean_absolute_error: 2  
      .6518  
1774 Epoch 790/1000  
1775 - 0s - loss: 0.7353 -  
      mean_absolute_error: 0.6144 - val_loss  
      : 16.4360 - val_mean_absolute_error: 2  
      .6442  
1776  
1777 Epoch 00790: val_mean_absolute_error  
      did not improve from 2.27145  
1778 Epoch 791/1000  
1779 - 0s - loss: 0.6520 -
```

```
1779 mean_absolute_error: 0.5887 - val_loss
    : 17.3436 - val_mean_absolute_error: 2
    .7281
1780 Epoch 792/1000
1781   - 0s - loss: 0.6559 -
    mean_absolute_error: 0.5745 - val_loss
    : 18.8986 - val_mean_absolute_error: 2
    .7185
1782 Epoch 793/1000
1783   - 0s - loss: 0.7168 -
    mean_absolute_error: 0.5748 - val_loss
    : 15.9334 - val_mean_absolute_error: 2
    .5212
1784 Epoch 794/1000
1785   - 0s - loss: 0.6887 -
    mean_absolute_error: 0.5660 - val_loss
    : 19.1978 - val_mean_absolute_error: 2
    .6656
1786 Epoch 795/1000
1787   - 0s - loss: 0.8328 -
    mean_absolute_error: 0.6154 - val_loss
    : 17.2160 - val_mean_absolute_error: 2
    .6155
1788 Epoch 796/1000
```

```
1789 - 0s - loss: 0.7331 -  
mean_absolute_error: 0.5894 - val_loss  
: 17.2916 - val_mean_absolute_error: 2  
.6424  
1790 Epoch 797/1000  
1791 - 0s - loss: 0.7704 -  
mean_absolute_error: 0.6317 - val_loss  
: 18.4199 - val_mean_absolute_error: 2  
.9854  
1792 Epoch 798/1000  
1793 - 0s - loss: 0.5839 -  
mean_absolute_error: 0.5399 - val_loss  
: 16.1971 - val_mean_absolute_error: 2  
.5659  
1794 Epoch 799/1000  
1795 - 0s - loss: 0.6573 -  
mean_absolute_error: 0.5975 - val_loss  
: 17.3254 - val_mean_absolute_error: 2  
.6721  
1796 Epoch 800/1000  
1797 - 0s - loss: 0.7760 -  
mean_absolute_error: 0.6383 - val_loss  
: 17.2227 - val_mean_absolute_error: 2  
.6264
```

1798

1799 Epoch 00800: val\_mean\_absolute\_error  
did not improve from 2.27145

1800 Epoch 801/1000

1801 - 0s - loss: 0.6043 -  
mean\_absolute\_error: 0.5640 - val\_loss  
: 17.7059 - val\_mean\_absolute\_error: 2  
.7011

1802 Epoch 802/1000

1803 - 0s - loss: 0.8153 -  
mean\_absolute\_error: 0.6564 - val\_loss  
: 18.5131 - val\_mean\_absolute\_error: 2  
.7693

1804 Epoch 803/1000

1805 - 0s - loss: 0.6390 -  
mean\_absolute\_error: 0.5517 - val\_loss  
: 16.4514 - val\_mean\_absolute\_error: 2  
.6141

1806 Epoch 804/1000

1807 - 0s - loss: 0.7236 -  
mean\_absolute\_error: 0.6152 - val\_loss  
: 17.4166 - val\_mean\_absolute\_error: 2  
.7071

1808 Epoch 805/1000

```
1809 - 0s - loss: 0.6474 -  
      mean_absolute_error: 0.5691 - val_loss  
      : 18.9387 - val_mean_absolute_error: 2  
      .7363  
1810 Epoch 806/1000  
1811 - 0s - loss: 0.8338 -  
      mean_absolute_error: 0.6577 - val_loss  
      : 19.1497 - val_mean_absolute_error: 2  
      .8189  
1812 Epoch 807/1000  
1813 - 0s - loss: 0.6578 -  
      mean_absolute_error: 0.5781 - val_loss  
      : 18.5657 - val_mean_absolute_error: 2  
      .8989  
1814 Epoch 808/1000  
1815 - 0s - loss: 0.8065 -  
      mean_absolute_error: 0.6295 - val_loss  
      : 17.9424 - val_mean_absolute_error: 2  
      .6252  
1816 Epoch 809/1000  
1817 - 0s - loss: 0.5725 -  
      mean_absolute_error: 0.5457 - val_loss  
      : 18.3552 - val_mean_absolute_error: 2  
      .6641
```

```
1818 Epoch 810/1000
1819   - 0s - loss: 0.6940 -
      mean_absolute_error: 0.5932 - val_loss
      : 17.1028 - val_mean_absolute_error: 2
      .6321
1820
1821 Epoch 00810: val_mean_absolute_error
      did not improve from 2.27145
1822 Epoch 811/1000
1823   - 0s - loss: 0.6350 -
      mean_absolute_error: 0.5502 - val_loss
      : 18.9823 - val_mean_absolute_error: 3
      .0974
1824 Epoch 812/1000
1825   - 0s - loss: 0.7598 -
      mean_absolute_error: 0.6123 - val_loss
      : 16.6472 - val_mean_absolute_error: 2
      .5933
1826 Epoch 813/1000
1827   - 0s - loss: 0.6801 -
      mean_absolute_error: 0.5767 - val_loss
      : 18.0981 - val_mean_absolute_error: 2
      .7225
1828 Epoch 814/1000
```



```
1829 - 0s - loss: 0.6836 -  
      mean_absolute_error: 0.5758 - val_loss  
      : 16.2100 - val_mean_absolute_error: 2  
      .7178  
1830 Epoch 815/1000  
1831 - 0s - loss: 0.6868 -  
      mean_absolute_error: 0.6029 - val_loss  
      : 16.6034 - val_mean_absolute_error: 2  
      .6116  
1832 Epoch 816/1000  
1833 - 0s - loss: 0.7286 -  
      mean_absolute_error: 0.6205 - val_loss  
      : 18.6536 - val_mean_absolute_error: 2  
      .6875  
1834 Epoch 817/1000  
1835 - 0s - loss: 0.7507 -  
      mean_absolute_error: 0.5704 - val_loss  
      : 18.6446 - val_mean_absolute_error: 2  
      .7299  
1836 Epoch 818/1000  
1837 - 0s - loss: 0.6519 -  
      mean_absolute_error: 0.5589 - val_loss  
      : 18.2030 - val_mean_absolute_error: 2  
      .6574
```

```
1838 Epoch 819/1000
1839   - 0s - loss: 0.6424 -
      mean_absolute_error: 0.5852 - val_loss
      : 17.5222 - val_mean_absolute_error: 2
      .7996
1840 Epoch 820/1000
1841   - 0s - loss: 0.6496 -
      mean_absolute_error: 0.5880 - val_loss
      : 16.6077 - val_mean_absolute_error: 2
      .5462
1842
1843 Epoch 00820: val_mean_absolute_error
      did not improve from 2.27145
1844 Epoch 821/1000
1845   - 0s - loss: 0.6965 -
      mean_absolute_error: 0.5775 - val_loss
      : 16.1227 - val_mean_absolute_error: 2
      .7026
1846 Epoch 822/1000
1847   - 0s - loss: 0.6203 -
      mean_absolute_error: 0.5288 - val_loss
      : 17.9578 - val_mean_absolute_error: 2
      .7082
1848 Epoch 823/1000
```

```
1849 - 0s - loss: 0.6528 -  
      mean_absolute_error: 0.5612 - val_loss  
      : 18.4373 - val_mean_absolute_error: 2  
      .8587  
1850 Epoch 824/1000  
1851 - 0s - loss: 0.6954 -  
      mean_absolute_error: 0.5937 - val_loss  
      : 16.9084 - val_mean_absolute_error: 2  
      .7045  
1852 Epoch 825/1000  
1853 - 0s - loss: 0.6694 -  
      mean_absolute_error: 0.5821 - val_loss  
      : 16.7311 - val_mean_absolute_error: 2  
      .7390  
1854 Epoch 826/1000  
1855 - 0s - loss: 0.7008 -  
      mean_absolute_error: 0.5983 - val_loss  
      : 17.5927 - val_mean_absolute_error: 2  
      .6284  
1856 Epoch 827/1000  
1857 - 0s - loss: 0.6380 -  
      mean_absolute_error: 0.5728 - val_loss  
      : 17.9012 - val_mean_absolute_error: 2  
      .7666
```

```
1858 Epoch 828/1000
1859   - 0s - loss: 0.7027 -
      mean_absolute_error: 0.5684 - val_loss
      : 16.4766 - val_mean_absolute_error: 2
      .5750
1860 Epoch 829/1000
1861   - 0s - loss: 0.7016 -
      mean_absolute_error: 0.5848 - val_loss
      : 17.9790 - val_mean_absolute_error: 2
      .9090
1862 Epoch 830/1000
1863   - 0s - loss: 0.7052 -
      mean_absolute_error: 0.5807 - val_loss
      : 16.5356 - val_mean_absolute_error: 2
      .7088
1864
1865 Epoch 00830: val_mean_absolute_error
      did not improve from 2.27145
1866 Epoch 831/1000
1867   - 0s - loss: 0.6457 -
      mean_absolute_error: 0.5724 - val_loss
      : 17.5216 - val_mean_absolute_error: 2
      .6607
1868 Epoch 832/1000
```

```
1869 - 0s - loss: 0.6051 -  
mean_absolute_error: 0.5373 - val_loss  
: 16.8800 - val_mean_absolute_error: 2  
.5751  
1870 Epoch 833/1000  
1871 - 0s - loss: 0.6683 -  
mean_absolute_error: 0.5721 - val_loss  
: 18.8471 - val_mean_absolute_error: 2  
.7507  
1872 Epoch 834/1000  
1873 - 0s - loss: 0.7201 -  
mean_absolute_error: 0.6015 - val_loss  
: 18.9489 - val_mean_absolute_error: 2  
.6842  
1874 Epoch 835/1000  
1875 - 0s - loss: 0.6617 -  
mean_absolute_error: 0.5716 - val_loss  
: 16.1077 - val_mean_absolute_error: 2  
.6579  
1876 Epoch 836/1000  
1877 - 0s - loss: 0.7316 -  
mean_absolute_error: 0.5967 - val_loss  
: 18.2793 - val_mean_absolute_error: 2  
.6262
```

```
1878 Epoch 837/1000
1879   - 0s - loss: 0.6957 -
      mean_absolute_error: 0.5666 - val_loss
      : 17.3992 - val_mean_absolute_error: 2
      .6281
1880 Epoch 838/1000
1881   - 0s - loss: 0.6191 -
      mean_absolute_error: 0.5698 - val_loss
      : 15.8751 - val_mean_absolute_error: 2
      .6806
1882 Epoch 839/1000
1883   - 0s - loss: 0.5953 -
      mean_absolute_error: 0.5441 - val_loss
      : 17.6823 - val_mean_absolute_error: 2
      .6225
1884 Epoch 840/1000
1885   - 0s - loss: 0.6599 -
      mean_absolute_error: 0.5411 - val_loss
      : 17.0538 - val_mean_absolute_error: 2
      .7209
1886
1887 Epoch 00840: val_mean_absolute_error
      did not improve from 2.27145
1888 Epoch 841/1000
```

```
1889 - 0s - loss: 0.6131 -  
      mean_absolute_error: 0.5626 - val_loss  
      : 19.5121 - val_mean_absolute_error: 2  
      .8222  
1890 Epoch 842/1000  
1891 - 0s - loss: 0.5976 -  
      mean_absolute_error: 0.5561 - val_loss  
      : 19.2599 - val_mean_absolute_error: 2  
      .7503  
1892 Epoch 843/1000  
1893 - 0s - loss: 0.6293 -  
      mean_absolute_error: 0.5722 - val_loss  
      : 18.4233 - val_mean_absolute_error: 2  
      .6681  
1894 Epoch 844/1000  
1895 - 0s - loss: 0.7342 -  
      mean_absolute_error: 0.6048 - val_loss  
      : 17.2859 - val_mean_absolute_error: 2  
      .6155  
1896 Epoch 845/1000  
1897 - 0s - loss: 0.6050 -  
      mean_absolute_error: 0.5460 - val_loss  
      : 16.5860 - val_mean_absolute_error: 2  
      .6020
```

```
1898 Epoch 846/1000
1899   - 0s - loss: 0.6130 -
      mean_absolute_error: 0.5452 - val_loss
      : 17.6083 - val_mean_absolute_error: 2
      .6754
1900 Epoch 847/1000
1901   - 0s - loss: 0.6380 -
      mean_absolute_error: 0.5422 - val_loss
      : 16.6841 - val_mean_absolute_error: 2
      .5979
1902 Epoch 848/1000
1903   - 0s - loss: 0.6711 -
      mean_absolute_error: 0.5971 - val_loss
      : 17.8467 - val_mean_absolute_error: 2
      .6665
1904 Epoch 849/1000
1905   - 0s - loss: 0.6463 -
      mean_absolute_error: 0.5713 - val_loss
      : 18.1481 - val_mean_absolute_error: 2
      .6629
1906 Epoch 850/1000
1907   - 0s - loss: 0.8112 -
      mean_absolute_error: 0.6424 - val_loss
      : 17.4686 - val_mean_absolute_error: 2
```



1907 .6332

1908

1909 Epoch 00850: val\_mean\_absolute\_error  
did not improve from 2.27145

1910 Epoch 851/1000

1911 - 0s - loss: 0.6548 -  
mean\_absolute\_error: 0.5461 - val\_loss  
: 16.9847 - val\_mean\_absolute\_error: 2  
.6397

1912 Epoch 852/1000

1913 - 0s - loss: 0.6354 -  
mean\_absolute\_error: 0.5749 - val\_loss  
: 18.2630 - val\_mean\_absolute\_error: 2  
.7292

1914 Epoch 853/1000

1915 - 0s - loss: 0.6192 -  
mean\_absolute\_error: 0.5752 - val\_loss  
: 19.2909 - val\_mean\_absolute\_error: 2  
.7825

1916 Epoch 854/1000

1917 - 0s - loss: 0.6462 -  
mean\_absolute\_error: 0.5211 - val\_loss  
: 19.0833 - val\_mean\_absolute\_error: 2  
.8248

```
1918 Epoch 855/1000
1919   - 0s - loss: 0.5509 -
      mean_absolute_error: 0.5310 - val_loss
      : 18.4567 - val_mean_absolute_error: 2
      .6108
1920 Epoch 856/1000
1921   - 0s - loss: 0.7947 -
      mean_absolute_error: 0.6329 - val_loss
      : 16.8129 - val_mean_absolute_error: 2
      .6460
1922 Epoch 857/1000
1923   - 0s - loss: 0.5294 -
      mean_absolute_error: 0.5109 - val_loss
      : 18.4429 - val_mean_absolute_error: 2
      .6591
1924 Epoch 858/1000
1925   - 0s - loss: 0.6930 -
      mean_absolute_error: 0.5779 - val_loss
      : 16.8588 - val_mean_absolute_error: 2
      .5664
1926 Epoch 859/1000
1927   - 0s - loss: 0.6667 -
      mean_absolute_error: 0.5904 - val_loss
      : 17.1717 - val_mean_absolute_error: 2
```

```
1927 .8155
1928 Epoch 860/1000
1929 - 0s - loss: 0.7320 -
      mean_absolute_error: 0.5973 - val_loss
      : 17.3781 - val_mean_absolute_error: 2
      .6404
1930
1931 Epoch 00860: val_mean_absolute_error
      did not improve from 2.27145
1932 Epoch 861/1000
1933 - 0s - loss: 0.5728 -
      mean_absolute_error: 0.5304 - val_loss
      : 21.7618 - val_mean_absolute_error: 2
      .8892
1934 Epoch 862/1000
1935 - 0s - loss: 0.5915 -
      mean_absolute_error: 0.5513 - val_loss
      : 19.0882 - val_mean_absolute_error: 2
      .8821
1936 Epoch 863/1000
1937 - 0s - loss: 0.7103 -
      mean_absolute_error: 0.5764 - val_loss
      : 18.1396 - val_mean_absolute_error: 2
      .6151
```

```
1938 Epoch 864/1000
1939   - 0s - loss: 0.5755 -
      mean_absolute_error: 0.5280 - val_loss
      : 16.7182 - val_mean_absolute_error: 2
      .7716
1940 Epoch 865/1000
1941   - 0s - loss: 0.6795 -
      mean_absolute_error: 0.5651 - val_loss
      : 20.1904 - val_mean_absolute_error: 2
      .8627
1942 Epoch 866/1000
1943   - 0s - loss: 0.7311 -
      mean_absolute_error: 0.5921 - val_loss
      : 16.9205 - val_mean_absolute_error: 2
      .5644
1944 Epoch 867/1000
1945   - 0s - loss: 0.6145 -
      mean_absolute_error: 0.5734 - val_loss
      : 17.5737 - val_mean_absolute_error: 2
      .8287
1946 Epoch 868/1000
1947   - 0s - loss: 0.6679 -
      mean_absolute_error: 0.5612 - val_loss
      : 16.7642 - val_mean_absolute_error: 2
```

```
1947 .7980
1948 Epoch 869/1000
1949 - 0s - loss: 0.7740 -
      mean_absolute_error: 0.6178 - val_loss
      : 18.4434 - val_mean_absolute_error: 2
      .6721
1950 Epoch 870/1000
1951 - 0s - loss: 0.5040 -
      mean_absolute_error: 0.4988 - val_loss
      : 17.5392 - val_mean_absolute_error: 2
      .5854
1952
1953 Epoch 00870: val_mean_absolute_error
      did not improve from 2.27145
1954 Epoch 871/1000
1955 - 0s - loss: 0.6029 -
      mean_absolute_error: 0.5361 - val_loss
      : 20.2739 - val_mean_absolute_error: 2
      .7267
1956 Epoch 872/1000
1957 - 0s - loss: 0.7032 -
      mean_absolute_error: 0.5977 - val_loss
      : 17.7646 - val_mean_absolute_error: 2
      .7097
```

```
1958 Epoch 873/1000
1959   - 0s - loss: 0.6855 -
      mean_absolute_error: 0.5725 - val_loss
      : 17.3620 - val_mean_absolute_error: 2
      .6819
1960 Epoch 874/1000
1961   - 0s - loss: 0.6107 -
      mean_absolute_error: 0.5352 - val_loss
      : 16.5627 - val_mean_absolute_error: 2
      .5933
1962 Epoch 875/1000
1963   - 0s - loss: 0.6157 -
      mean_absolute_error: 0.5627 - val_loss
      : 16.5034 - val_mean_absolute_error: 2
      .6249
1964 Epoch 876/1000
1965   - 0s - loss: 0.4935 -
      mean_absolute_error: 0.5039 - val_loss
      : 17.1529 - val_mean_absolute_error: 2
      .6035
1966 Epoch 877/1000
1967   - 0s - loss: 0.5988 -
      mean_absolute_error: 0.5542 - val_loss
      : 17.0248 - val_mean_absolute_error: 2
```

```
1967 .6485
1968 Epoch 878/1000
1969 - 0s - loss: 0.7438 -
      mean_absolute_error: 0.6184 - val_loss
      : 16.8990 - val_mean_absolute_error: 2
      .6644
1970 Epoch 879/1000
1971 - 0s - loss: 0.6502 -
      mean_absolute_error: 0.5794 - val_loss
      : 18.1262 - val_mean_absolute_error: 2
      .6993
1972 Epoch 880/1000
1973 - 0s - loss: 0.6616 -
      mean_absolute_error: 0.5323 - val_loss
      : 19.8085 - val_mean_absolute_error: 2
      .8246
1974
1975 Epoch 00880: val_mean_absolute_error
      did not improve from 2.27145
1976 Epoch 881/1000
1977 - 0s - loss: 0.6078 -
      mean_absolute_error: 0.5652 - val_loss
      : 18.5552 - val_mean_absolute_error: 2
      .6916
```

```
1978 Epoch 882/1000
1979   - 0s - loss: 0.6533 -
      mean_absolute_error: 0.5766 - val_loss
      : 17.9808 - val_mean_absolute_error: 2
      .6723
1980 Epoch 883/1000
1981   - 0s - loss: 0.7297 -
      mean_absolute_error: 0.6045 - val_loss
      : 16.7515 - val_mean_absolute_error: 2
      .6335
1982 Epoch 884/1000
1983   - 0s - loss: 0.6131 -
      mean_absolute_error: 0.5468 - val_loss
      : 17.4233 - val_mean_absolute_error: 2
      .6460
1984 Epoch 885/1000
1985   - 0s - loss: 0.6158 -
      mean_absolute_error: 0.5507 - val_loss
      : 17.3856 - val_mean_absolute_error: 2
      .7621
1986 Epoch 886/1000
1987   - 0s - loss: 0.7040 -
      mean_absolute_error: 0.5742 - val_loss
      : 18.1727 - val_mean_absolute_error: 2
```



```
1987 .7508
1988 Epoch 887/1000
1989 - 0s - loss: 0.6389 -
      mean_absolute_error: 0.5598 - val_loss
      : 17.8141 - val_mean_absolute_error: 2
      .6337
1990 Epoch 888/1000
1991 - 0s - loss: 0.5732 -
      mean_absolute_error: 0.5353 - val_loss
      : 17.2546 - val_mean_absolute_error: 2
      .8817
1992 Epoch 889/1000
1993 - 0s - loss: 0.5409 -
      mean_absolute_error: 0.4947 - val_loss
      : 17.9460 - val_mean_absolute_error: 2
      .7532
1994 Epoch 890/1000
1995 - 0s - loss: 0.6921 -
      mean_absolute_error: 0.5982 - val_loss
      : 16.8904 - val_mean_absolute_error: 2
      .8282
1996
1997 Epoch 00890: val_mean_absolute_error
      did not improve from 2.27145
```

```
1998 Epoch 891/1000
1999   - 0s - loss: 0.6484 -
      mean_absolute_error: 0.5680 - val_loss
      : 17.7673 - val_mean_absolute_error: 2
      .6357
2000 Epoch 892/1000
2001   - 0s - loss: 0.6341 -
      mean_absolute_error: 0.5600 - val_loss
      : 18.8825 - val_mean_absolute_error: 2
      .7311
2002 Epoch 893/1000
2003   - 0s - loss: 0.5764 -
      mean_absolute_error: 0.5392 - val_loss
      : 17.2670 - val_mean_absolute_error: 2
      .6860
2004 Epoch 894/1000
2005   - 0s - loss: 0.6030 -
      mean_absolute_error: 0.5501 - val_loss
      : 19.7704 - val_mean_absolute_error: 3
      .0609
2006 Epoch 895/1000
2007   - 0s - loss: 0.6282 -
      mean_absolute_error: 0.5568 - val_loss
      : 19.6967 - val_mean_absolute_error: 2
```

```
2007 .8218
2008 Epoch 896/1000
2009 - 0s - loss: 0.6113 -
mean_absolute_error: 0.5627 - val_loss
: 16.8238 - val_mean_absolute_error: 2
.5879
2010 Epoch 897/1000
2011 - 0s - loss: 0.6655 -
mean_absolute_error: 0.6049 - val_loss
: 19.3061 - val_mean_absolute_error: 2
.8495
2012 Epoch 898/1000
2013 - 0s - loss: 0.5365 -
mean_absolute_error: 0.5174 - val_loss
: 16.3168 - val_mean_absolute_error: 2
.6695
2014 Epoch 899/1000
2015 - 0s - loss: 0.6109 -
mean_absolute_error: 0.5464 - val_loss
: 16.2803 - val_mean_absolute_error: 2
.6191
2016 Epoch 900/1000
2017 - 0s - loss: 0.6572 -
mean_absolute_error: 0.5788 - val_loss
```

2017 : 18.6051 - val\_mean\_absolute\_error: 2  
.7756

2018

2019 Epoch 00900: val\_mean\_absolute\_error  
did not improve from 2.27145

2020 Epoch 901/1000

2021 - 0s - loss: 0.7150 -  
mean\_absolute\_error: 0.5990 - val\_loss  
: 17.6979 - val\_mean\_absolute\_error: 2  
.6820

2022 Epoch 902/1000

2023 - 0s - loss: 0.5734 -  
mean\_absolute\_error: 0.5238 - val\_loss  
: 19.1446 - val\_mean\_absolute\_error: 2  
.9192

2024 Epoch 903/1000

2025 - 0s - loss: 0.6411 -  
mean\_absolute\_error: 0.5751 - val\_loss  
: 17.7851 - val\_mean\_absolute\_error: 2  
.6676

2026 Epoch 904/1000

2027 - 0s - loss: 0.6015 -  
mean\_absolute\_error: 0.5484 - val\_loss  
: 16.8019 - val\_mean\_absolute\_error: 2

```
2027 .6063
2028 Epoch 905/1000
2029 - 0s - loss: 0.6470 -
mean_absolute_error: 0.5561 - val_loss
: 16.9608 - val_mean_absolute_error: 2
.5823
2030 Epoch 906/1000
2031 - 0s - loss: 0.6247 -
mean_absolute_error: 0.5587 - val_loss
: 16.8436 - val_mean_absolute_error: 2
.7035
2032 Epoch 907/1000
2033 - 0s - loss: 0.5272 -
mean_absolute_error: 0.5353 - val_loss
: 16.6951 - val_mean_absolute_error: 2
.7465
2034 Epoch 908/1000
2035 - 0s - loss: 0.6470 -
mean_absolute_error: 0.6006 - val_loss
: 17.1470 - val_mean_absolute_error: 2
.7032
2036 Epoch 909/1000
2037 - 0s - loss: 0.5388 -
mean_absolute_error: 0.5039 - val_loss
```

```
2037 : 20.4734 - val_mean_absolute_error: 2
      .9134
2038 Epoch 910/1000
2039   - 0s - loss: 0.6168 -
      mean_absolute_error: 0.5290 - val_loss
      : 17.3255 - val_mean_absolute_error: 2
      .5947
2040
2041 Epoch 00910: val_mean_absolute_error
      did not improve from 2.27145
2042 Epoch 911/1000
2043   - 0s - loss: 0.6609 -
      mean_absolute_error: 0.5729 - val_loss
      : 17.2705 - val_mean_absolute_error: 2
      .6065
2044 Epoch 912/1000
2045   - 0s - loss: 0.5905 -
      mean_absolute_error: 0.5464 - val_loss
      : 18.3954 - val_mean_absolute_error: 2
      .7008
2046 Epoch 913/1000
2047   - 0s - loss: 0.5365 -
      mean_absolute_error: 0.5214 - val_loss
      : 17.1662 - val_mean_absolute_error: 2
```

```
2047 .8061
2048 Epoch 914/1000
2049 - 0s - loss: 0.6468 -
      mean_absolute_error: 0.5755 - val_loss
      : 16.3005 - val_mean_absolute_error: 2
      .6648
2050 Epoch 915/1000
2051 - 0s - loss: 0.5090 -
      mean_absolute_error: 0.5138 - val_loss
      : 17.6628 - val_mean_absolute_error: 2
      .7808
2052 Epoch 916/1000
2053 - 0s - loss: 0.6243 -
      mean_absolute_error: 0.5804 - val_loss
      : 19.5881 - val_mean_absolute_error: 3
      .0674
2054 Epoch 917/1000
2055 - 0s - loss: 0.7380 -
      mean_absolute_error: 0.6189 - val_loss
      : 16.3874 - val_mean_absolute_error: 2
      .6264
2056 Epoch 918/1000
2057 - 0s - loss: 0.6265 -
      mean_absolute_error: 0.5559 - val_loss
```

```
2057 : 18.5478 - val_mean_absolute_error: 2
      .7225
2058 Epoch 919/1000
2059   - 0s - loss: 0.4881 -
      mean_absolute_error: 0.4994 - val_loss
      : 17.9540 - val_mean_absolute_error: 2
      .6384
2060 Epoch 920/1000
2061   - 0s - loss: 0.6522 -
      mean_absolute_error: 0.5867 - val_loss
      : 18.6254 - val_mean_absolute_error: 2
      .7639
2062
2063 Epoch 00920: val_mean_absolute_error
      did not improve from 2.27145
2064 Epoch 921/1000
2065   - 0s - loss: 0.5530 -
      mean_absolute_error: 0.5050 - val_loss
      : 20.9677 - val_mean_absolute_error: 3
      .1677
2066 Epoch 922/1000
2067   - 0s - loss: 0.6771 -
      mean_absolute_error: 0.5735 - val_loss
      : 17.1678 - val_mean_absolute_error: 2
```



```
2067 .6131
2068 Epoch 923/1000
2069 - 0s - loss: 0.6447 -
mean_absolute_error: 0.5480 - val_loss
: 17.4595 - val_mean_absolute_error: 2
.6758
2070 Epoch 924/1000
2071 - 0s - loss: 0.5162 -
mean_absolute_error: 0.5026 - val_loss
: 18.1469 - val_mean_absolute_error: 2
.6854
2072 Epoch 925/1000
2073 - 0s - loss: 0.6135 -
mean_absolute_error: 0.5570 - val_loss
: 17.8089 - val_mean_absolute_error: 2
.7405
2074 Epoch 926/1000
2075 - 0s - loss: 0.6162 -
mean_absolute_error: 0.5575 - val_loss
: 20.5451 - val_mean_absolute_error: 2
.9676
2076 Epoch 927/1000
2077 - 0s - loss: 0.6286 -
mean_absolute_error: 0.5334 - val_loss
```

```
2077 : 16.8136 - val_mean_absolute_error: 2
      .6684
2078 Epoch 928/1000
2079   - 0s - loss: 0.4905 -
      mean_absolute_error: 0.5013 - val_loss
      : 16.9613 - val_mean_absolute_error: 2
      .6269
2080 Epoch 929/1000
2081   - 0s - loss: 0.7943 -
      mean_absolute_error: 0.6246 - val_loss
      : 18.4351 - val_mean_absolute_error: 2
      .7645
2082 Epoch 930/1000
2083   - 0s - loss: 0.5819 -
      mean_absolute_error: 0.5398 - val_loss
      : 18.5999 - val_mean_absolute_error: 2
      .6536
2084
2085 Epoch 00930: val_mean_absolute_error
      did not improve from 2.27145
2086 Epoch 931/1000
2087   - 0s - loss: 0.6002 -
      mean_absolute_error: 0.5345 - val_loss
      : 17.3766 - val_mean_absolute_error: 2
```

```
2087 .7121
2088 Epoch 932/1000
2089 - 0s - loss: 0.5836 -
      mean_absolute_error: 0.5412 - val_loss
      : 16.8479 - val_mean_absolute_error: 2
      .7481
2090 Epoch 933/1000
2091 - 0s - loss: 0.5595 -
      mean_absolute_error: 0.5501 - val_loss
      : 17.7851 - val_mean_absolute_error: 2
      .9774
2092 Epoch 934/1000
2093 - 0s - loss: 0.6722 -
      mean_absolute_error: 0.5291 - val_loss
      : 18.0338 - val_mean_absolute_error: 2
      .7626
2094 Epoch 935/1000
2095 - 0s - loss: 0.6943 -
      mean_absolute_error: 0.5978 - val_loss
      : 19.3134 - val_mean_absolute_error: 2
      .8420
2096 Epoch 936/1000
2097 - 0s - loss: 0.5229 -
      mean_absolute_error: 0.5020 - val_loss
```

```
2097 : 18.6808 - val_mean_absolute_error: 2
      .6442
2098 Epoch 937/1000
2099   - 0s - loss: 0.5449 -
      mean_absolute_error: 0.5295 - val_loss
      : 17.5293 - val_mean_absolute_error: 2
      .6826
2100 Epoch 938/1000
2101   - 0s - loss: 0.5831 -
      mean_absolute_error: 0.5445 - val_loss
      : 19.0858 - val_mean_absolute_error: 2
      .6265
2102 Epoch 939/1000
2103   - 0s - loss: 0.5945 -
      mean_absolute_error: 0.5539 - val_loss
      : 18.7649 - val_mean_absolute_error: 2
      .6304
2104 Epoch 940/1000
2105   - 0s - loss: 0.5957 -
      mean_absolute_error: 0.5124 - val_loss
      : 18.1169 - val_mean_absolute_error: 2
      .9158
2106
2107 Epoch 00940: val_mean_absolute_error
```

```
2107 did not improve from 2.27145
2108 Epoch 941/1000
2109   - 0s - loss: 0.6273 -
      mean_absolute_error: 0.5608 - val_loss
      : 18.9286 - val_mean_absolute_error: 2
      .7346
2110 Epoch 942/1000
2111   - 0s - loss: 0.6303 -
      mean_absolute_error: 0.5614 - val_loss
      : 17.6038 - val_mean_absolute_error: 2
      .6829
2112 Epoch 943/1000
2113   - 0s - loss: 0.5084 -
      mean_absolute_error: 0.4881 - val_loss
      : 18.2468 - val_mean_absolute_error: 2
      .7358
2114 Epoch 944/1000
2115   - 0s - loss: 0.6117 -
      mean_absolute_error: 0.5787 - val_loss
      : 17.6289 - val_mean_absolute_error: 2
      .6766
2116 Epoch 945/1000
2117   - 0s - loss: 0.5394 -
      mean_absolute_error: 0.5459 - val_loss
```

```
2117 : 17.7365 - val_mean_absolute_error: 2
      .9522
2118 Epoch 946/1000
2119 - 0s - loss: 0.5600 -
      mean_absolute_error: 0.5201 - val_loss
      : 18.9579 - val_mean_absolute_error: 2
      .7756
2120 Epoch 947/1000
2121 - 0s - loss: 0.6408 -
      mean_absolute_error: 0.5683 - val_loss
      : 17.7952 - val_mean_absolute_error: 2
      .7507
2122 Epoch 948/1000
2123 - 0s - loss: 0.5972 -
      mean_absolute_error: 0.5608 - val_loss
      : 17.5954 - val_mean_absolute_error: 2
      .6614
2124 Epoch 949/1000
2125 - 0s - loss: 0.5722 -
      mean_absolute_error: 0.5418 - val_loss
      : 18.4117 - val_mean_absolute_error: 2
      .6513
2126 Epoch 950/1000
2127 - 0s - loss: 0.5823 -
```

```
2127 mean_absolute_error: 0.5550 - val_loss
    : 17.3527 - val_mean_absolute_error: 2
    .7750
```

```
2128
```

```
2129 Epoch 00950: val_mean_absolute_error
    did not improve from 2.27145
```

```
2130 Epoch 951/1000
```

```
2131   - 0s - loss: 0.5699 -
    mean_absolute_error: 0.5423 - val_loss
    : 17.5516 - val_mean_absolute_error: 2
    .5635
```

```
2132 Epoch 952/1000
```

```
2133   - 0s - loss: 0.5947 -
    mean_absolute_error: 0.5582 - val_loss
    : 18.1451 - val_mean_absolute_error: 2
    .6751
```

```
2134 Epoch 953/1000
```

```
2135   - 0s - loss: 0.5778 -
    mean_absolute_error: 0.5474 - val_loss
    : 16.5314 - val_mean_absolute_error: 2
    .6996
```

```
2136 Epoch 954/1000
```

```
2137   - 0s - loss: 0.6423 -
    mean_absolute_error: 0.5629 - val_loss
```

```
2137 : 18.4419 - val_mean_absolute_error: 2
      .6652
2138 Epoch 955/1000
2139   - 0s - loss: 0.4964 -
      mean_absolute_error: 0.4903 - val_loss
      : 18.0781 - val_mean_absolute_error: 2
      .7010
2140 Epoch 956/1000
2141   - 0s - loss: 0.5894 -
      mean_absolute_error: 0.5486 - val_loss
      : 17.6743 - val_mean_absolute_error: 2
      .5868
2142 Epoch 957/1000
2143   - 0s - loss: 0.5153 -
      mean_absolute_error: 0.5007 - val_loss
      : 19.7196 - val_mean_absolute_error: 2
      .7968
2144 Epoch 958/1000
2145   - 0s - loss: 0.6682 -
      mean_absolute_error: 0.6025 - val_loss
      : 18.8779 - val_mean_absolute_error: 2
      .7955
2146 Epoch 959/1000
2147   - 0s - loss: 0.5006 -
```



```
2147 mean_absolute_error: 0.4948 - val_loss
    : 21.5325 - val_mean_absolute_error: 2
    .9301
```

```
2148 Epoch 960/1000
```

```
2149 - 0s - loss: 0.5273 -
    mean_absolute_error: 0.5448 - val_loss
    : 19.1821 - val_mean_absolute_error: 2
    .8265
```

```
2150
```

```
2151 Epoch 00960: val_mean_absolute_error
    did not improve from 2.27145
```

```
2152 Epoch 961/1000
```

```
2153 - 0s - loss: 0.6669 -
    mean_absolute_error: 0.5815 - val_loss
    : 17.3721 - val_mean_absolute_error: 2
    .6171
```

```
2154 Epoch 962/1000
```

```
2155 - 0s - loss: 0.4698 -
    mean_absolute_error: 0.4999 - val_loss
    : 16.7687 - val_mean_absolute_error: 2
    .5552
```

```
2156 Epoch 963/1000
```

```
2157 - 0s - loss: 0.6465 -
    mean_absolute_error: 0.5554 - val_loss
```

```
2157 : 18.4333 - val_mean_absolute_error: 2
      .8113
2158 Epoch 964/1000
2159   - 0s - loss: 0.4702 -
      mean_absolute_error: 0.4744 - val_loss
      : 17.6186 - val_mean_absolute_error: 2
      .7205
2160 Epoch 965/1000
2161   - 0s - loss: 0.5650 -
      mean_absolute_error: 0.5391 - val_loss
      : 17.8714 - val_mean_absolute_error: 2
      .6924
2162 Epoch 966/1000
2163   - 0s - loss: 0.6069 -
      mean_absolute_error: 0.5337 - val_loss
      : 17.1937 - val_mean_absolute_error: 2
      .7997
2164 Epoch 967/1000
2165   - 0s - loss: 0.5730 -
      mean_absolute_error: 0.5153 - val_loss
      : 17.1349 - val_mean_absolute_error: 2
      .6485
2166 Epoch 968/1000
2167   - 0s - loss: 0.6087 -
```

```
2167 mean_absolute_error: 0.5600 - val_loss
    : 17.2676 - val_mean_absolute_error: 2
    .6382
```

```
2168 Epoch 969/1000
```

```
2169 - 0s - loss: 0.5319 -
    mean_absolute_error: 0.5181 - val_loss
    : 16.8506 - val_mean_absolute_error: 2
    .7989
```

```
2170 Epoch 970/1000
```

```
2171 - 0s - loss: 0.5227 -
    mean_absolute_error: 0.4906 - val_loss
    : 18.5016 - val_mean_absolute_error: 2
    .8612
```

```
2172
```

```
2173 Epoch 00970: val_mean_absolute_error
    did not improve from 2.27145
```

```
2174 Epoch 971/1000
```

```
2175 - 0s - loss: 0.5614 -
    mean_absolute_error: 0.5415 - val_loss
    : 16.5438 - val_mean_absolute_error: 2
    .6089
```

```
2176 Epoch 972/1000
```

```
2177 - 0s - loss: 0.5170 -
    mean_absolute_error: 0.5179 - val_loss
```

```
2177 : 18.1494 - val_mean_absolute_error: 2
      .6580
2178 Epoch 973/1000
2179 - 0s - loss: 0.4466 -
      mean_absolute_error: 0.4807 - val_loss
      : 17.7854 - val_mean_absolute_error: 2
      .6671
2180 Epoch 974/1000
2181 - 0s - loss: 0.6087 -
      mean_absolute_error: 0.5335 - val_loss
      : 17.6712 - val_mean_absolute_error: 2
      .6751
2182 Epoch 975/1000
2183 - 0s - loss: 0.4300 -
      mean_absolute_error: 0.4685 - val_loss
      : 17.3319 - val_mean_absolute_error: 2
      .7137
2184 Epoch 976/1000
2185 - 0s - loss: 0.5458 -
      mean_absolute_error: 0.5674 - val_loss
      : 17.8837 - val_mean_absolute_error: 3
      .0343
2186 Epoch 977/1000
2187 - 0s - loss: 0.6574 -
```

```
2187 mean_absolute_error: 0.5228 - val_loss
    : 17.8416 - val_mean_absolute_error: 2
    .7168
```

```
2188 Epoch 978/1000
```

```
2189 - 0s - loss: 0.5961 -
    mean_absolute_error: 0.5501 - val_loss
    : 17.8697 - val_mean_absolute_error: 2
    .6601
```

```
2190 Epoch 979/1000
```

```
2191 - 0s - loss: 0.4555 -
    mean_absolute_error: 0.4941 - val_loss
    : 18.0268 - val_mean_absolute_error: 2
    .6275
```

```
2192 Epoch 980/1000
```

```
2193 - 0s - loss: 0.5339 -
    mean_absolute_error: 0.5122 - val_loss
    : 17.0228 - val_mean_absolute_error: 2
    .6686
```

```
2194
```

```
2195 Epoch 00980: val_mean_absolute_error
    did not improve from 2.27145
```

```
2196 Epoch 981/1000
```

```
2197 - 0s - loss: 0.6744 -
    mean_absolute_error: 0.5726 - val_loss
```

```
2197 : 18.2011 - val_mean_absolute_error: 2
      .6538
2198 Epoch 982/1000
2199 - 0s - loss: 0.4669 -
      mean_absolute_error: 0.4696 - val_loss
      : 16.9392 - val_mean_absolute_error: 2
      .6919
2200 Epoch 983/1000
2201 - 0s - loss: 0.5285 -
      mean_absolute_error: 0.5208 - val_loss
      : 17.7415 - val_mean_absolute_error: 2
      .7121
2202 Epoch 984/1000
2203 - 0s - loss: 0.6621 -
      mean_absolute_error: 0.5629 - val_loss
      : 18.7903 - val_mean_absolute_error: 2
      .6989
2204 Epoch 985/1000
2205 - 0s - loss: 0.4952 -
      mean_absolute_error: 0.5082 - val_loss
      : 21.0248 - val_mean_absolute_error: 2
      .7728
2206 Epoch 986/1000
2207 - 0s - loss: 0.5738 -
```

```
2207 mean_absolute_error: 0.5021 - val_loss
    : 16.7250 - val_mean_absolute_error: 2
    .6042
```

```
2208 Epoch 987/1000
```

```
2209 - 0s - loss: 0.4547 -
    mean_absolute_error: 0.4792 - val_loss
    : 17.5899 - val_mean_absolute_error: 2
    .6434
```

```
2210 Epoch 988/1000
```

```
2211 - 0s - loss: 0.6514 -
    mean_absolute_error: 0.5788 - val_loss
    : 22.1738 - val_mean_absolute_error: 3
    .0849
```

```
2212 Epoch 989/1000
```

```
2213 - 0s - loss: 0.6021 -
    mean_absolute_error: 0.5359 - val_loss
    : 16.6721 - val_mean_absolute_error: 2
    .5530
```

```
2214 Epoch 990/1000
```

```
2215 - 0s - loss: 0.5515 -
    mean_absolute_error: 0.5273 - val_loss
    : 16.7452 - val_mean_absolute_error: 2
    .6389
```

```
2216
```

```
2217 Epoch 00990: val_mean_absolute_error
    did not improve from 2.27145
2218 Epoch 991/1000
2219   - 0s - loss: 0.4798 -
    mean_absolute_error: 0.5010 - val_loss
    : 18.0271 - val_mean_absolute_error: 2
    .6868
2220 Epoch 992/1000
2221   - 0s - loss: 0.5430 -
    mean_absolute_error: 0.5425 - val_loss
    : 16.8991 - val_mean_absolute_error: 2
    .5660
2222 Epoch 993/1000
2223   - 0s - loss: 0.4827 -
    mean_absolute_error: 0.5047 - val_loss
    : 18.0146 - val_mean_absolute_error: 2
    .7637
2224 Epoch 994/1000
2225   - 0s - loss: 0.5472 -
    mean_absolute_error: 0.5257 - val_loss
    : 17.3264 - val_mean_absolute_error: 2
    .6474
2226 Epoch 995/1000
2227   - 0s - loss: 0.6095 -
```



```
2227 mean_absolute_error: 0.5642 - val_loss
    : 18.0109 - val_mean_absolute_error: 2
    .6730
2228 Epoch 996/1000
2229   - 0s - loss: 0.4798 -
    mean_absolute_error: 0.4984 - val_loss
    : 17.7690 - val_mean_absolute_error: 2
    .7352
2230 Epoch 997/1000
2231   - 0s - loss: 0.5676 -
    mean_absolute_error: 0.5181 - val_loss
    : 18.7165 - val_mean_absolute_error: 2
    .7219
2232 Epoch 998/1000
2233   - 0s - loss: 0.5153 -
    mean_absolute_error: 0.5081 - val_loss
    : 17.6944 - val_mean_absolute_error: 2
    .7206
2234 Epoch 999/1000
2235   - 0s - loss: 0.5714 -
    mean_absolute_error: 0.5536 - val_loss
    : 16.5394 - val_mean_absolute_error: 2
    .6937
2236 Epoch 1000/1000
```

```

2237 - 0s - loss: 0.5889 -
mean_absolute_error: 0.5355 - val_loss
: 20.5825 - val_mean_absolute_error: 2
.8348

```

```

2238

```

```

2239 Epoch 01000: val_mean_absolute_error
did not improve from 2.27145

```

```

2240 history.history.keys = ['
val_mean_absolute_error', 'loss', '
mean_absolute_error', 'val_loss']

```

```

2241 history.history = {'
val_mean_absolute_error': [20.
338163634877144, 16.373666080427757,
11.555089950561523, 7.886213161327221
, 6.196528564264745, 5.28195051499355
, 4.657552012690791, 4.219557703277211
, 3.9858394905372903, 3.
996849083606108, 3.531689679181134, 3.
476207662511755, 3.424370871649848, 3.
177375722814489, 3.0311515949390553, 2
.9479566738929277, 2.8303363470383633
, 3.1110142601860895, 2.
826242870754666, 2.8367834208924094, 2
.728064737202209, 2.790869159463011, 2

```

2241 . 757757775577498, 2. 6096715102961032,  
2. 7855940453800154, 2. 6552600154170283  
, 2. 703836393945011, 2. 649513173986364  
, 2. 8390250735812717, 2. [REDACTED]  
617632265444155, 2. 656145072277681, 2.  
893023149466809, 2. 5939063554928627, 2.  
. 6719049759853033, 2. 594612898649993,  
2. 7257185570987654, 2. 526709403520749  
, 2. 536150072827751, 2. [REDACTED]  
5183948469750677, 2. 5608190371666426,  
2. 598189106693974, 2. 5624558955063055  
, 2. 574559011577088, 2. 719108157687717  
, 2. 6177776007004727, 2. [REDACTED]  
6245490180121527, 2. 469914730684257, 2.  
. 5601498639142073, 2. 5350332613344544  
, 2. 458536571926541, 2. 654092788696289  
, 2. 55888964806074, 2. 514356000923816  
, 2. 7236576080322266, 2. 48296735316147  
, 2. 5833228075945818, 2. [REDACTED]  
5032183800214605, 2. 5442419640811873,  
2. 592002562534662, 2. 62213424400047, 2.  
. 467418505821699, 2. 512787289089627, 2.  
. 7514190202877846, 2. 614118340574665,  
2. 5838856402738593, 2. 5212359251799406

2241 , 2. 538381199777862, 2. 70799504974742  
, 2. 6862437401288823, 2. [REDACTED]  
5536492194658442, 2. 5163698785098982,  
2. 5839128141049987, 2. 4936191417552807  
, 2. 497931562824014, 2. 455614137060848  
, 2. 461790508694119, 2. 451263851589627  
, 2. 4753797083725164, 2. [REDACTED]  
6205062866210938, 2. 5735050954936463,  
2. 6596964612419223, 2. 537354857833297  
, 2. 462479485405816, 2. [REDACTED]  
4416797072799117, 2. 451201026822314, 2  
. 4370992684069974, 2. 4862395157048733  
, 2. 525263232949339, 2. [REDACTED]  
4942412906222873, 2. 4849096227575234,  
2. 85687592588825, 2. 5877700146333673,  
2. 484789224318516, 2. 6794909724482783  
, 2. 4703074090274764, 2. [REDACTED]  
4181284256923345, 2. 5963868506160783,  
2. 476074242297514, 2. 4642905247064286  
, 2. 4596660284348477, 2. [REDACTED]  
5446557174494235, 2. 5276531643337674,  
2. 484928766886393, 2. 43307031231162, 2  
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, 942, 943, 944, 945, 946, 947, 948,  
949, 950, 951, 952, 953, 954, 955, 956  
, 957, 958, 959, 960, 961, 962, 963,  
964, 965, 966, 967, 968, 969, 970, 971

```
2242 , 972, 973, 974, 975, 976, 977, 978,  
      979, 980, 981, 982, 983, 984, 985, 986  
      , 987, 988, 989, 990, 991, 992, 993,  
      994, 995, 996, 997, 998, 999]
```

```
2243 #####model evaluate  
      #####
```

```
2244 results test_loss: 19.070773928773168
```

```
2245 results test_mean_absolute_error: 3.  
      1200642679251875
```

```
2246 #####model predict  
      #####
```

```
2247
```

```
2248 Process finished with exit code 0
```

```
2249
```