Household

```
import os
cpu_percent = psutil.cpu_percent()
process = psutil.Process(os.getpid())
mem_info = process.memory_info()
memory_mb = mem_info.rss / 1024 / 1024
cpu_percent,memory_mb
```

[21] ✓ 61m 46.1s

```
(2, 2, 1, 1, 1, 2)
(2, 2, 1) (1, 1, 2, 7)
(2, 2, 1, 1, 2, 1)
(2, 2, 1) (1, 2, 1, 7)
(2, 2, 1, 1, 2, 2)
(2, 2, 1) (1, 2, 2, 7)
(2, 2, 1, 2, 1, 1)
(2, 2, 1) (2, 1, 1, 7)
(2, 2, 1, 2, 1, 2)
(2, 2, 1) (2, 1, 2, 7)
(2, 2, 1, 2, 2, 1)
(2, 2, 1) (2, 2, 1, 7)
(2, 2, 1, 2, 2, 2)
(2, 2, 1) (2, 2, 2, 7)
(2, 2, 2, 1, 1, 1)
(2, 2, 2) (1, 1, 1, 7)
(2, 2, 2, 1, 1, 2)
(2, 2, 2) (1, 1, 2, 7)
(2, 2, 2, 1, 2, 1)
(2, 2, 2) (1, 2, 1, 7)
(2, 2, 2, 1, 2, 2)
(2, 2, 2) (1, 2, 2, 7)
(2, 2, 2, 2, 1, 1)
(2, 2, 2) (2, 1, 1, 7)
(2, 2, 2, 2, 1, 2)
```

```
from statsmodels.tools.eval_measures import rmse

print(rmse(data_init2[cat],data_init2["predict"]))

import os
cpu_percent = psutil.cpu_percent()
process = psutil.Process(os.getpid())
mem_info = process.memory_info()
memory_mb = mem_info.rss / 1024 / 1024
cpu_percent,memory_mb
# import pandas as pd
# import numpy as np
# from statsmodels.tsa.statespace.sarimax import SARIMAX
# import itertools
# import warnings
# combinations = list(itertools.product([1], repeat=6))
# combinations
```

[22] ✓ 0.0s

```
616.099979089247

(4.1, 1601.10546875)
```

```
pd.DataFrame(zip(score,combinations),columns=["sc
```

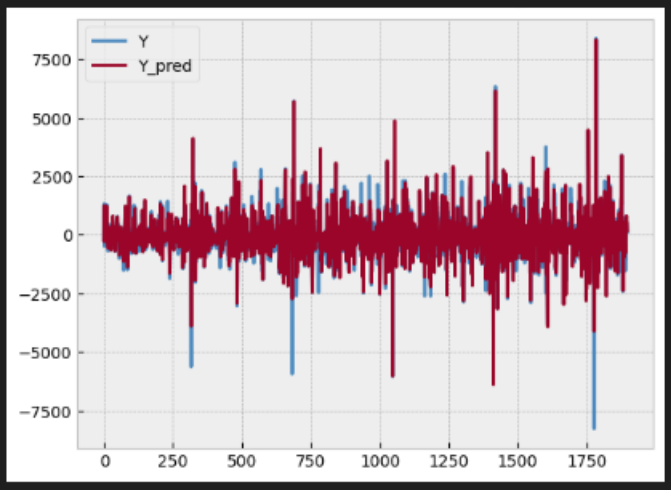
[32] ✓ 0.0s

```
(          score               conf
 61  29249.907946  (2, 2, 2, 2, 1, 2)
 12  29714.908354  (1, 1, 2, 2, 1, 1)
 36  29719.121790  (2, 1, 1, 2, 1, 1)
 37  29719.942936  (2, 1, 1, 2, 1, 2)
 4   29720.078277  (1, 1, 1, 2, 1, 1)
 8   29722.574407  (1, 1, 2, 1, 1, 1)
 32  29723.514999  (2, 1, 1, 1, 1, 1)
 0   29727.463876  (1, 1, 1, 1, 1, 1)
 35  29727.487906  (2, 1, 1, 1, 2, 2)
 44  29739.726625  (2, 1, 2, 2, 1, 1),
          score               conf
 62  31268.250531  (2, 2, 2, 2, 2, 1)
 27  31272.888246  (1, 2, 2, 1, 2, 2)
 26  31343.319019  (1, 2, 2, 1, 2, 1)
 63  31344.772324  (2, 2, 2, 2, 2, 2)
 58  31375.568513  (2, 2, 2, 1, 2, 1)
 59  31387.890327  (2, 2, 2, 1, 2, 2)
 31  31403.309470  (1, 2, 2, 2, 2, 2)
 30  31438.297173  (1, 2, 2, 2, 2, 1)
 23  31762.067112  (1, 2, 1, 2, 2, 2)
 55  31915.806527  (2, 2, 1, 2, 2, 2))
```

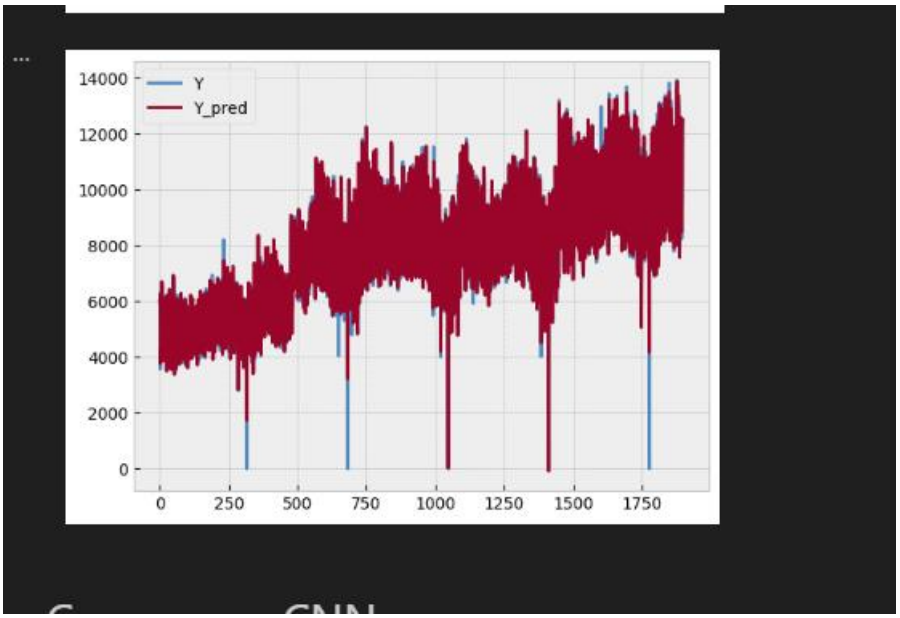
```
Total configs: 77
(1899, 7, 41) (1899, 1)
WARNING:tensorflow:Layer lstm_1246 will not use cuDNN kernels since it doesn't meet the criteria. It will use a
60/60 [==============================] - 0s 3ms/step
287.5020474173901
287.5020474173901
```

	Y	Y_pred
0	5947.0	5985.111420
1	6307.0	6218.306030
2	3556.0	3765.230591
3	4091.0	4320.571899
4	3922.0	4016.467407
...	...	...
1894	8239.0	8553.879089
1895	8363.0	8486.877441
1896	9728.0	9785.661041
1897	12248.0	12212.471710
1898	12458.0	12494.555237

1899 rows × 2 columns

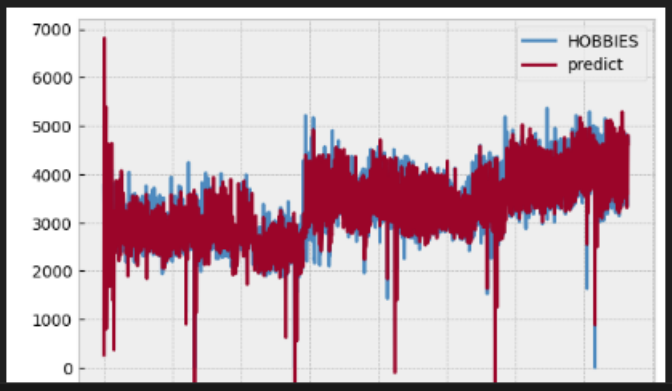


PROBLEMS 72 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER


Y
Y_pred
14000
12000
10000
8000
6000
4000
2000
0
0
250
500
750
1000
1250
1500
1750

#Hobbies

```
[34]  ✓ 45m 42.8s

...   (1, 1, 1, 1, 1, 1)
      (1, 1, 1) (1, 1, 1, 7)
      (1, 1, 1, 1, 1, 2)
      (1, 1, 1) (1, 1, 2, 7)
      (1, 1, 1, 1, 2, 1)
      (1, 1, 1) (1, 2, 1, 7)
      (1, 1, 1, 1, 2, 2)
      (1, 1, 1) (1, 2, 2, 7)
      (1, 1, 1, 2, 1, 1)
      (1, 1, 1) (2, 1, 1, 7)
      (1, 1, 1, 2, 1, 2)
      (1, 1, 1) (2, 1, 2, 7)
      (1, 1, 1, 2, 2, 1)
      (1, 1, 1) (2, 2, 1, 7)
      (1, 1, 1, 2, 2, 2)
      (1, 1, 1) (2, 2, 2, 7)
      (1, 1, 2, 1, 1, 1)
      (1, 1, 2) (1, 1, 1, 7)
      (1, 1, 2, 1, 1, 2)
      (1, 1, 2) (1, 1, 2, 7)
      (1, 1, 2, 1, 2, 1)
      (1, 1, 2) (1, 2, 1, 7)
      (1, 1, 2, 1, 2, 2)
      (1, 1, 2) (1, 2, 2, 7)
      (1, 1, 2, 2, 1, 1)
      ...
      (2, 2, 2, 2, 2, 1)
      (2, 2, 2) (2, 2, 1, 7)
      (2, 2, 2, 2, 2, 2)
      (2, 2, 2) (2, 2, 2, 7)
      Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

...   (1.6, 454.7734375)
```



PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

```
from statsmodels.tools.eval_measures import rmse

print(rmse(data_init2[cat],data_init2["predict"]))

import os
cpu_percent = psutil.cpu_percent()
process = psutil.Process(os.getpid())
mem_info = process.memory_info()
memory_mb = mem_info.rss / 1024 / 1024
cpu_percent,memory_mb
# import pandas as pd
# import numpy as np
# from statsmodels.tsa.statespace.sarimax import SARIMAX
# import itertools
# import warnings
# combinations = list(itertools.product([1], repeat=6))
# combinations
```

[35] ✓ 0.0s

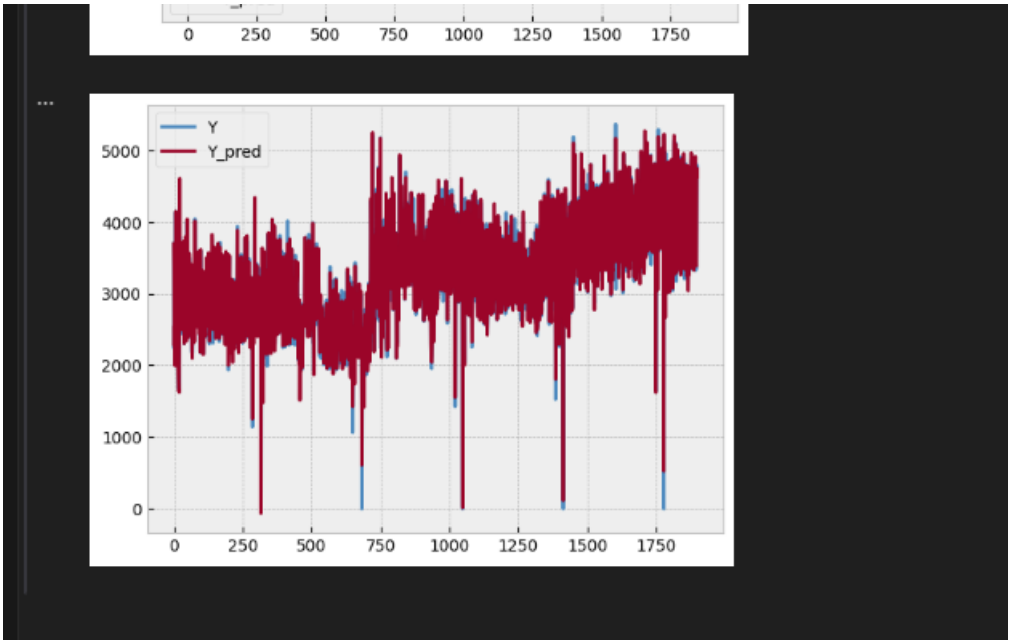
```
356.19001274266026

(3.0, 460.4375)
```

```
pd.DataFrame(zip(score,combinations),columns=["score","conf"]).sort_values("score").head(10),pd.DataFrame(zip(score,combinations),columns=["score","conf"]).sort_values("score").tail(10)
```

[37] ✓ 0.0s

```
(          score                conf
4   27346.600447  (1, 1, 1, 2, 1, 1)
40  27358.370189  (2, 1, 2, 1, 1, 1)
3   27358.425358  (1, 1, 1, 1, 2, 2)
0   27368.617723  (1, 1, 1, 1, 1, 1)
36  27369.809595  (2, 1, 1, 2, 1, 1)
32  27370.262359  (2, 1, 1, 1, 1, 1)
33  27370.853136  (2, 1, 1, 1, 1, 2)
1   27372.345522  (1, 1, 1, 1, 1, 2)
5   27376.781567  (1, 1, 1, 2, 1, 2)
8   27379.656210  (1, 1, 2, 1, 1, 1),
          score                conf
39  29025.381198  (2, 1, 1, 2, 2, 2)
31  29034.188826  (1, 2, 2, 2, 2, 2)
26  29045.790686  (1, 2, 2, 1, 2, 1)
63  29058.491926  (2, 2, 2, 2, 2, 2)
59  29061.501029  (2, 2, 2, 1, 2, 2)
30  29067.803890  (1, 2, 2, 2, 2, 1)
58  29099.788886  (2, 2, 2, 1, 2, 1)
51  29775.135441  (2, 2, 1, 1, 2, 2)
55  29782.999380  (2, 2, 1, 2, 2, 2)
23  29789.760101  (1, 2, 1, 2, 2, 2))
```


1m 40.8s
Total configs: 77
(1899, 7, 41) (1899, 1)
WARNING:tensorflow:Layer lstm_1249 will not use cuDNN kernels since it doesn't meet the criteria. It will use a generic GPU kernel as fallback when runnin
60/60 [==============================] - 0s 3ms/step
105.44637257784804
105.44637257784804
Y Y_pred
0 3699.0 3690.067047
1 3417.0 3362.705688
2 2233.0 2273.234894
3 2554.0 2548.649266
4 2170.0 2277.561081
1894 3472.0 3456.268745
1895 3353.0 3383.637482
1896 4085.0 3981.941544
1897 4787.0 4746.499718
1898 4683.0 4633.662018
1899 rows × 2 columns
Y
Y_pred
PROBLEMS 72 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER
WARNING: You are using pip version 22.0.4; however, version 23.3.1 is available.
You should consider upgrading via the 'C:\Users\luisd\OneDrive\Escritorio\Advance1\deep_enviroment2\Scripts\python.exe -m pip install --upgrade pip' command.


Y
Y_pred

FOODS

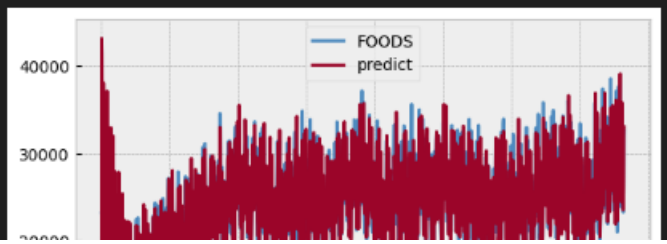
```
cpu_percent = psutil.cpu_percent()
process = psutil.Process(os.getpid())
mem_info = process.memory_info()
memory_mb = mem_info.rss / 1024 / 1024
cpu_percent,memory_mb
```

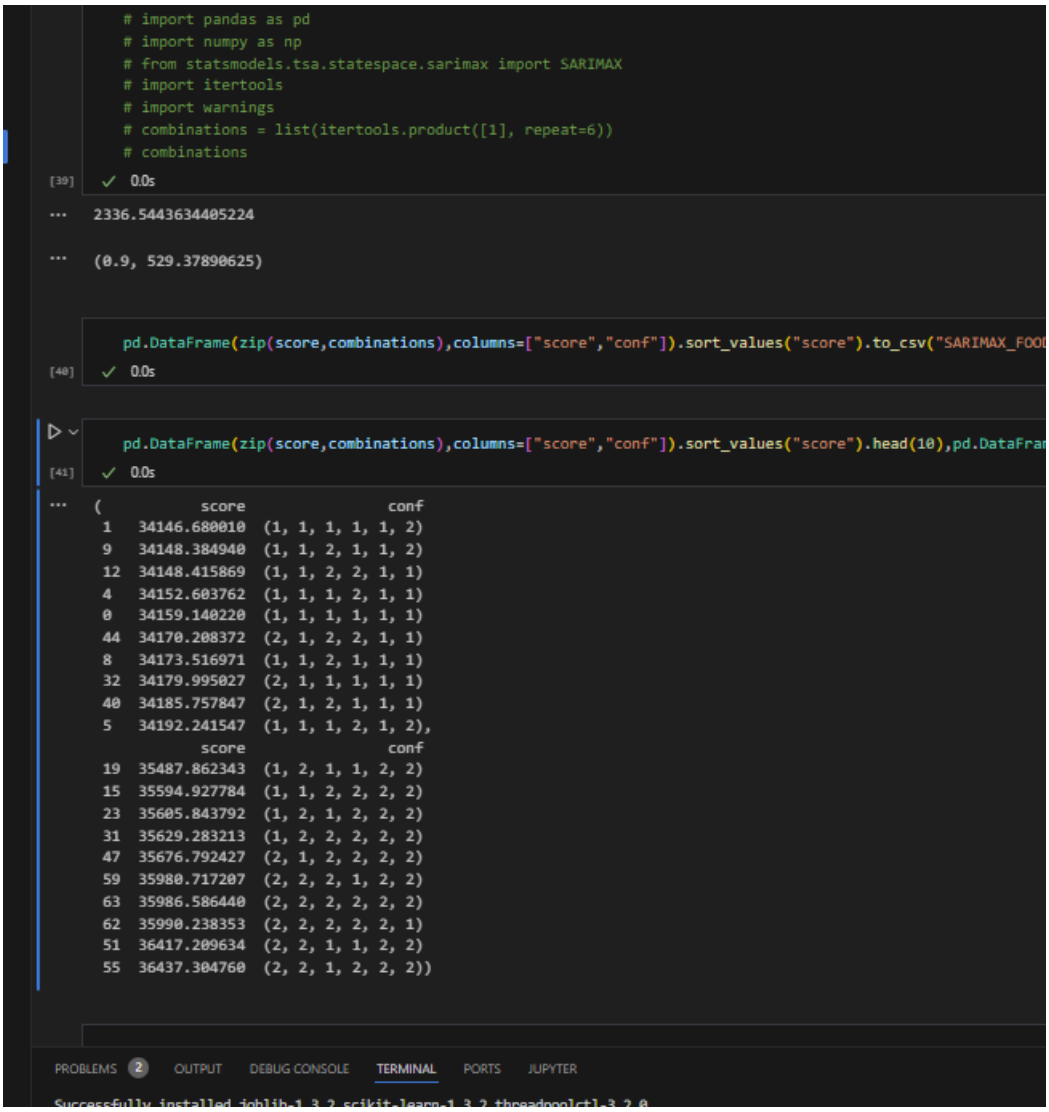
[38] ✓ 54m 14.6s

```
(1, 1, 1, 1, 1, 1)
(1, 1, 1) (1, 1, 1, 7)
(1, 1, 1, 1, 1, 2)
(1, 1, 1) (1, 1, 2, 7)
(1, 1, 1, 1, 2, 1)
(1, 1, 1) (1, 2, 1, 7)
(1, 1, 1, 1, 2, 2)
(1, 1, 1) (1, 2, 2, 7)
(1, 1, 1, 2, 1, 1)
(1, 1, 1) (2, 1, 1, 7)
(1, 1, 1, 2, 1, 2)
(1, 1, 1) (2, 1, 2, 7)
(1, 1, 1, 2, 2, 1)
(1, 1, 1) (2, 2, 1, 7)
(1, 1, 1, 2, 2, 2)
(1, 1, 1) (2, 2, 2, 7)
(1, 1, 2, 1, 1, 1)
(1, 1, 2) (1, 1, 1, 7)
(1, 1, 2, 1, 1, 2)
(1, 1, 2) (1, 1, 2, 7)
(1, 1, 2, 1, 2, 1)
(1, 1, 2) (1, 2, 1, 7)
(1, 1, 2, 1, 2, 2)
(1, 1, 2) (1, 2, 2, 7)
(1, 1, 2, 2, 1, 1)
...
(2, 2, 2, 2, 2, 1)
(2, 2, 2) (2, 2, 1, 7)
(2, 2, 2, 2, 2, 2)
(2, 2, 2) (2, 2, 2, 7)
```

Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

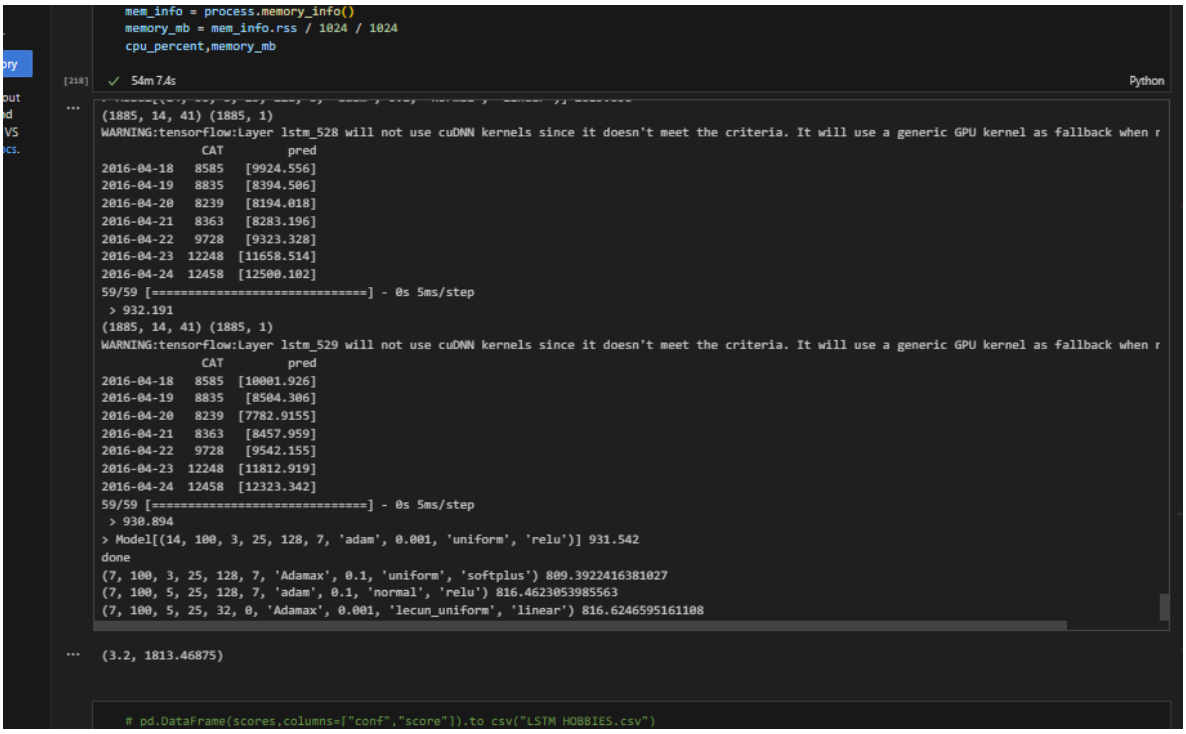
```
(4.3, 587.6875)
```



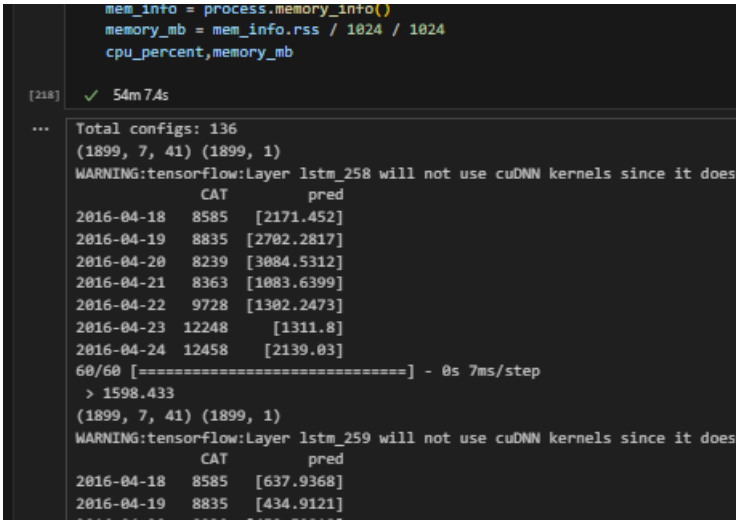



```
(          score                conf
 1   34146.680010  (1, 1, 1, 1, 1, 2)
 9   34148.384940  (1, 1, 2, 1, 1, 2)
 12  34148.415869  (1, 1, 2, 2, 1, 1)
 4   34152.603762  (1, 1, 1, 2, 1, 1)
 0   34159.140220  (1, 1, 1, 1, 1, 1)
 44  34170.208372  (2, 1, 2, 2, 1, 1)
 8   34173.516971  (1, 1, 2, 1, 1, 1)
 32  34179.995027  (2, 1, 1, 1, 1, 1)
 40  34185.757847  (2, 1, 2, 1, 1, 1)
 5   34192.241547  (1, 1, 1, 2, 1, 2),
           score                conf
 19  35487.862343  (1, 2, 1, 1, 2, 2)
 15  35594.927784  (1, 1, 2, 2, 2, 2)
 23  35605.843792  (1, 2, 1, 2, 2, 2)
 31  35629.283213  (1, 2, 2, 2, 2, 2)
 47  35676.792427  (2, 1, 2, 2, 2, 2)
 59  35980.717207  (2, 2, 2, 1, 2, 2)
 63  35986.586440  (2, 2, 2, 2, 2, 2)
 62  35990.238353  (2, 2, 2, 2, 2, 1)
 51  36417.209634  (2, 2, 1, 1, 2, 2)
 55  36437.304760  (2, 2, 1, 2, 2, 2))
```

#HOUSEHOLD LSTM



```
    mem_info = process.memory_info()
    memory_mb = mem_info.rss / 1024 / 1024
    cpu_percent,memory_mb

[218]  ✓ 54m 7.4s                                                    Python

(1885, 14, 41) (1885, 1)
WARNING:tensorflow:Layer lstm_528 will not use cuDNN kernels since it doesn't meet the criteria. It will use a generic GPU kernel as fallback when r
              CAT         pred
2016-04-18   8585   [9924.556]
2016-04-19   8835   [8394.506]
2016-04-20   8239   [8194.018]
2016-04-21   8363   [8283.196]
2016-04-22   9728   [9323.328]
2016-04-23  12248  [11658.514]
2016-04-24  12458  [12500.102]
59/59 [==============================] - 0s 5ms/step
 > 932.191
(1885, 14, 41) (1885, 1)
WARNING:tensorflow:Layer lstm_529 will not use cuDNN kernels since it doesn't meet the criteria. It will use a generic GPU kernel as fallback when r
              CAT         pred
2016-04-18   8585  [10001.926]
2016-04-19   8835   [8504.306]
2016-04-20   8239  [7782.9155]
2016-04-21   8363   [8457.959]
2016-04-22   9728   [9542.155]
2016-04-23  12248  [11812.919]
2016-04-24  12458  [12323.342]
59/59 [==============================] - 0s 5ms/step
 > 930.894
> Model[(14, 100, 3, 25, 128, 7, 'adam', 0.001, 'uniform', 'relu')] 931.542
done
(7, 100, 3, 25, 128, 7, 'Adamax', 0.1, 'uniform', 'softplus') 809.3922416381027
(7, 100, 5, 25, 128, 7, 'adam', 0.1, 'normal', 'relu') 816.4623053985563
(7, 100, 5, 25, 32, 0, 'Adamax', 0.001, 'lecun_uniform', 'linear') 816.6246595161108

(3.2, 1813.46875)

    # pd.DataFrame(scores,columns=["conf","score"]).to_csv("LSTM HOBBIES.csv")
```



```
    mem_info = process.memory_info()
    memory_mb = mem_info.rss / 1024 / 1024
    cpu_percent,memory_mb

[218]  ✓ 54m 7.4s

Total configs: 136
(1899, 7, 41) (1899, 1)
WARNING:tensorflow:Layer lstm_258 will not use cuDNN kernels since it does
              CAT         pred
2016-04-18   8585   [2171.452]
2016-04-19   8835   [2702.2817]
2016-04-20   8239   [3084.5312]
2016-04-21   8363   [1083.6399]
2016-04-22   9728   [1302.2473]
2016-04-23  12248     [1311.8]
2016-04-24  12458    [2139.03]
60/60 [==============================] - 0s 7ms/step
 > 1598.433
(1899, 7, 41) (1899, 1)
WARNING:tensorflow:Layer lstm_259 will not use cuDNN kernels since it does
              CAT         pred
2016-04-18   8585   [637.9368]
2016-04-19   8835   [434.9121]
```

```
# list(scores[0][0])[3]
```

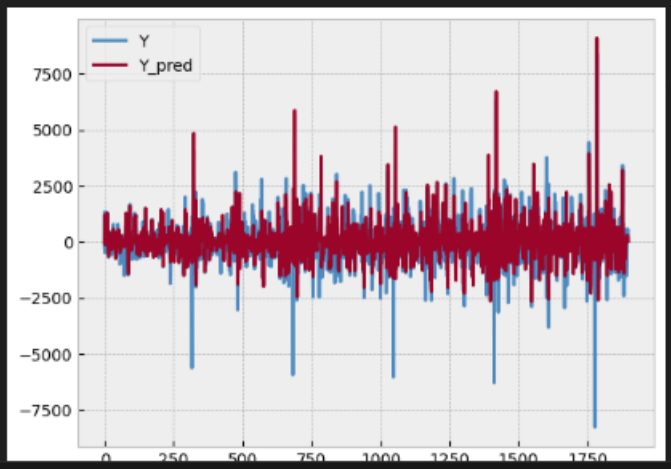
✓ 0.0s

```
[((7, 100, 3, 25, 128, 7, 'Adamax', 0.1, 'uniform', 'softplus'),
  809.3922416381027),
 ((7, 100, 5, 25, 128, 7, 'adam', 0.1, 'normal', 'relu'), 816.4623053985563),
 ((7, 100, 5, 25, 32, 0, 'Adamax', 0.001, 'lecun_uniform', 'linear'),
  816.6246595161108),
 ((7, 100, 5, 25, 128, 7, 'Adamax', 0.1, 'normal', 'linear'),
  824.5910653652006),
 ((7, 50, 3, 25, 32, 0, 'adam', 0.001, 'normal', 'relu'), 840.9516359203335),
 ((7, 50, 3, 25, 128, 7, 'adam', 0.1, 'normal', 'softplus'),
  842.2053830525128),
 ((7, 100, 3, 25, 128, 7, 'adam', 0.1, 'uniform', 'relu'), 843.907897115967),
 ((7, 100, 5, 25, 500, 7, 'Adamax', 0.001, 'normal', 'softplus'),
  850.891037455393),
 ((7, 100, 5, 25, 32, 7, 'Adagrad', 0.1, 'uniform', 'linear'),
  853.2563745701207),
 ((7, 100, 5, 25, 128, 7, 'Adamax', 0.1, 'lecun_uniform', 'linear'),
  854.4370957296563),
 ((7, 100, 3, 25, 128, 7, 'Adagrad', 0.001, 'normal', 'relu'),
  855.9304045316301),
 ((7, 100, 5, 25, 128, 7, 'Adagrad', 0.001, 'uniform', 'relu'),
  856.5468891115537),
 ((7, 100, 5, 25, 500, 7, 'adam', 0.001, 'lecun_uniform', 'softplus'),
  863.555244325276),
 ((7, 100, 3, 25, 32, 7, 'adam', 0.1, 'uniform', 'linear'), 864.17640749259),
 ((7, 50, 5, 25, 32, 7, 'Adamax', 0.1, 'normal', 'linear'), 865.2535529339823),
...
  6147.905192773882),
 ((14, 20, 3, 25, 500, 0, 'Adamax', 0.1, 'normal', 'relu'), 6474.533472362338),
 ((7, 20, 5, 25, 500, 0, 'Adagrad', 0.1, 'normal', 'relu'), 6482.03041157058),
 ((14, 20, 5, 25, 500, 0, 'Adagrad', 0.1, 'lecun_uniform', 'linear'),
  7784.08346043627)]
```

Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

```
(1899, 7, 41) (1899, 1)
Epoch 1/15000
15/15 [==============================] - 0s 4ms/step - loss: 1120149.1250
Epoch 2/15000
15/15 [==============================] - 0s 4ms/step - loss: 849877.3750
Epoch 3/15000
15/15 [==============================] - 0s 4ms/step - loss: 836073.1875
Epoch 4/15000
15/15 [==============================] - 0s 4ms/step - loss: 795967.0000
Epoch 5/15000
15/15 [==============================] - 0s 4ms/step - loss: 777342.6250
Epoch 6/15000
15/15 [==============================] - 0s 3ms/step - loss: 775969.5625
Epoch 7/15000
15/15 [==============================] - 0s 3ms/step - loss: 772960.3750
Epoch 8/15000
15/15 [==============================] - 0s 3ms/step - loss: 773285.8125
Epoch 9/15000
15/15 [==============================] - 0s 3ms/step - loss: 771593.3750
Epoch 10/15000
15/15 [==============================] - 0s 3ms/step - loss: 835461.0625
Epoch 11/15000
15/15 [==============================] - 0s 4ms/step - loss: 832572.4375
Epoch 12/15000
15/15 [==============================] - 0s 3ms/step - loss: 777895.1875
...
Epoch 15000/15000
15/15 [==============================] - 0s 2ms/step - loss: 349508.0625
60/60 [==============================] - 0s 1ms/step
584.0000167430325
```

Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

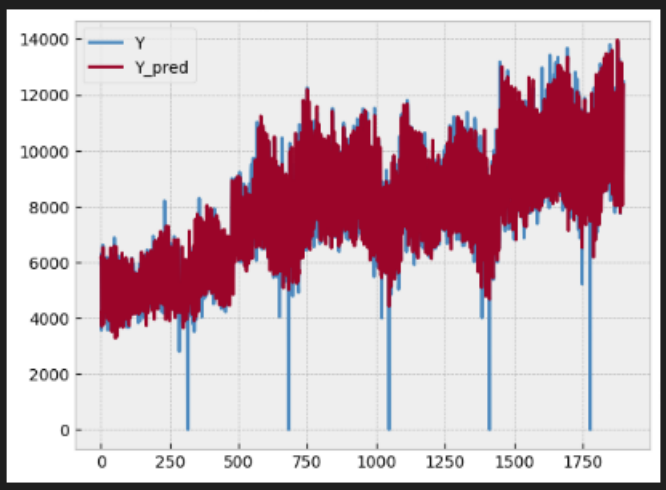


OBLEMS 38 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

```
#.plot()
datos_plot.plot()
print(rmse(datos_plot["Y"],datos_plot["Y_pred"]))
```

[235] ✓ 0.1s

```
584.0000167430325
```




```
datos_plot#[datos_plot["Y"]>100000
```

✓ 0.0s

	Y	Y_pred
0	5947.0	6175.529675
1	6307.0	6173.260986
2	3556.0	3917.877884
3	4091.0	3694.659592
4	3922.0	4259.004517
...	...	...
1894	8239.0	8039.968903
1895	8363.0	8536.039474
1896	9728.0	9545.913132
1897	12248.0	11822.293991
1898	12458.0	12350.149242

1899 rows × 2 columns

```
datos_plot.head()
datos_predf.head()
```

	Y	Y_pred
0	3986.0	2756.719971
1	2899.0	2718.334961

#HOBBIES LSTMS

```
[239] ✓ 83m 57.6s                                                    Pyth

Total configs: 174
(1899, 7, 41) (1899, 1)
WARNING:tensorflow:Layer lstm_530 will not use cuDNN kernels since it doesn't meet the criteria. It will use a generic GPU kernel as fallback when
             CAT         pred
2016-04-18  3323  [1086.6917]
2016-04-19  3787  [1017.0974]
2016-04-20  3472  [1079.3905]
2016-04-21  3353   [967.5036]
2016-04-22  4085  [1164.8741]
2016-04-23  4787  [1102.4578]
2016-04-24  4683  [827.53955]
60/60 [==============================] - 0s 3ms/step
 > 403.403
(1899, 7, 41) (1899, 1)
WARNING:tensorflow:Layer lstm_531 will not use cuDNN kernels since it doesn't meet the criteria. It will use a generic GPU kernel as fallback when
             CAT         pred
2016-04-18  3323   [348.0823]
2016-04-19  3787  [329.85535]
2016-04-20  3472  [352.96783]
2016-04-21  3353  [337.84055]
2016-04-22  4085  [363.31287]
2016-04-23  4787   [378.9488]
2016-04-24  4683  [376.25912]
60/60 [==============================] - 0s 3ms/step
 > 392.039
> Model[(7, 100, 5, 25, 128, 0, 'Adagrad', 0.001, 'uniform', 'relu')] 397.721
(1899, 7, 41) (1899, 1)
WARNING:tensorflow:Layer lstm_532 will not use cuDNN kernels since it doesn't meet the criteria. It will use a generic GPU kernel as fallback when
...
done
(7, 100, 3, 25, 128, 7, 'Adamax', 0.001, 'uniform', 'softplus') 369.29531745991073
(7, 100, 3, 25, 128, 7, 'adam', 0.001, 'uniform', 'linear') 376.4256290281196
(7, 100, 5, 25, 128, 7, 'adam', 0.001, 'normal', 'softplus') 379.21195023049825
```

Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

```
    # data.tail(15)
    scores
    # list(scores[0][0])[3]
[240] ✓ 0.0s

[((7, 100, 3, 25, 128, 7, 'Adamax', 0.001, 'uniform', 'softplus'),
  369.29531745991073),
 ((7, 100, 3, 25, 128, 7, 'adam', 0.001, 'uniform', 'linear'),
  376.4256290281196),
 ((7, 100, 5, 25, 128, 7, 'adam', 0.001, 'normal', 'softplus'),
  379.21195023049825),
 ((7, 100, 5, 25, 128, 7, 'adam', 0.1, 'lecun_uniform', 'relu'),
  383.2210015368662),
 ((7, 100, 3, 25, 32, 7, 'adam', 0.1, 'uniform', 'relu'), 386.26167998288835),
 ((7, 100, 3, 25, 128, 7, 'adam', 0.001, 'normal', 'linear'),
  389.18812256722794),
 ((7, 100, 3, 25, 32, 0, 'Adagrad', 0.1, 'uniform', 'softplus'),
  390.5320762025591),
 ((7, 100, 5, 25, 32, 7, 'Adamax', 0.1, 'lecun_uniform', 'linear'),
  391.16510430263804),
 ((7, 100, 5, 25, 500, 7, 'Adamax', 0.001, 'normal', 'linear'),
  392.74510851377755),
 ((7, 100, 5, 25, 32, 7, 'adam', 0.001, 'lecun_uniform', 'softplus'),
  394.5058169806314),
 ((7, 100, 5, 25, 32, 0, 'Adamax', 0.001, 'normal', 'relu'),
  395.6040361609239),
 ((7, 100, 5, 25, 128, 0, 'Adamax', 0.001, 'normal', 'relu'),
  396.0283304566044),
 ((7, 100, 5, 25, 500, 0, 'adam', 0.1, 'uniform', 'linear'),
  396.2916584550069),
...
  3146.323914697634),
 ((14, 20, 5, 25, 500, 0, 'Adagrad', 0.001, 'uniform', 'softplus'),
  3201.0310423016044),
 ((14, 20, 5, 25, 500, 0, 'Adagrad', 0.1, 'normal', 'softplus'),
  3302.635812690396)]
```

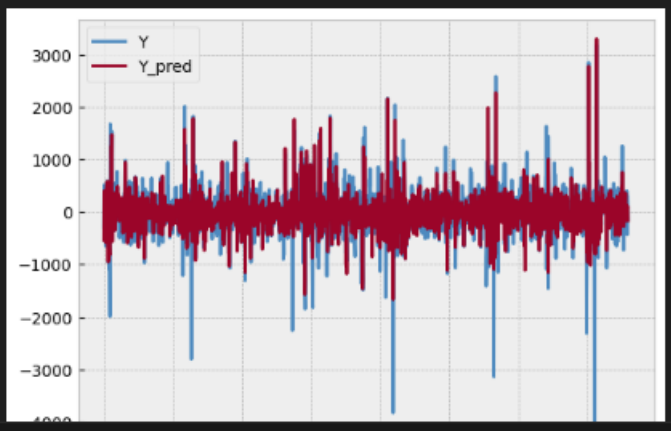
Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

```
pd.set_option('display.max_colwidth', None)

z=pd.DataFrame([dict(scores).values(),dict(scores).keys()]).T.sort_values(0).head(30)
z.iloc[0,1]#.strip(')(').split(',')
```

[243] ✓ 14m 27.5s

```
(1899, 7, 41) (1899, 1)
Epoch 1/15000
15/15 [==============================] - 0s 6ms/step - loss: 226194.3281
Epoch 2/15000
15/15 [==============================] - 0s 6ms/step - loss: 217491.2500
Epoch 3/15000
15/15 [==============================] - 0s 6ms/step - loss: 211888.4688
Epoch 4/15000
15/15 [==============================] - 0s 6ms/step - loss: 207803.6875
Epoch 5/15000
15/15 [==============================] - 0s 6ms/step - loss: 204226.9688
Epoch 6/15000
15/15 [==============================] - 0s 6ms/step - loss: 201517.2500
Epoch 7/15000
15/15 [==============================] - 0s 6ms/step - loss: 198907.6719
Epoch 8/15000
15/15 [==============================] - 0s 5ms/step - loss: 196716.8750
Epoch 9/15000
15/15 [==============================] - 0s 3ms/step - loss: 194858.0625
Epoch 10/15000
15/15 [==============================] - 0s 3ms/step - loss: 192806.3750
Epoch 11/15000
15/15 [==============================] - 0s 3ms/step - loss: 191451.7031
Epoch 12/15000
15/15 [==============================] - 0s 3ms/step - loss: 189832.6406
...
Epoch 15000/15000
15/15 [==============================] - 0s 3ms/step - loss: 82079.1406
60/60 [==============================] - 0s 1ms/step
285.7081867896207
```

Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

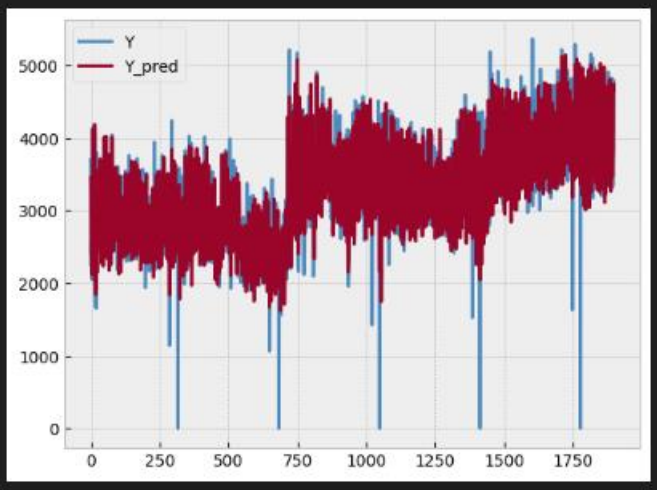


PROBLEMS 38 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

```
print(rmse(datos_plot["Y"],datos_plot["Y_pred"]))
```

✓ 0.2s

```
285.7081867896207
```



Food lstm

```
memory_mb = mem_info.rss / 1024 / 1024
cpu_percent,memory_mb
```

✓ 94m 1.0s

```
(1885, 14, 41) (1885, 1)
WARNING:tensorflow:Layer lstm_1224 will not use cuDNN kernels since it doesn't meet the criteria. It will use a generic GPU kernel as
             CAT         pred
2016-04-18  26151  [29157.664]
2016-04-19  24948  [27426.861]
2016-04-20  23632  [23888.002]
2016-04-21  23317  [25456.602]
2016-04-22  26704  [28683.637]
2016-04-23  31927  [32061.414]
2016-04-24  32654  [34501.105]
59/59 [==============================] - 0s 5ms/step
 > 3427.475
(1885, 14, 41) (1885, 1)
WARNING:tensorflow:Layer lstm_1225 will not use cuDNN kernels since it doesn't meet the criteria. It will use a generic GPU kernel as
             CAT         pred
2016-04-18  26151  [29091.023]
2016-04-19  24948  [27442.877]
2016-04-20  23632  [23886.312]
2016-04-21  23317  [25474.807]
2016-04-22  26704  [28680.262]
2016-04-23  31927  [32034.514]
2016-04-24  32654  [34426.098]
59/59 [==============================] - 0s 4ms/step
 > 3531.937
> Model[(14, 20, 5, 25, 128, 7, 'Adagrad', 0.001, 'uniform', 'relu')] 3479.706
done
(7, 100, 3, 25, 32, 7, 'Adamax', 0.001, 'uniform', 'linear') 2696.8214979172535
(7, 100, 3, 25, 32, 7, 'Adamax', 0.001, 'normal', 'softplus') 2753.064273699226
(7, 100, 3, 25, 32, 0, 'adam', 0.1, 'uniform', 'softplus') 2757.683987352025
```

```
(4.3, 1580.3984375)
```

```
# pd.DataFrame(scores,columns=["conf","score"]).to_csv("LSTM_Foods.csv")
# scores#[3][0]
```

```
cpu_percent,memory_mb
```

[247] ✓ 94m 1.0s

```
Total configs: 174
(1892, 14, 41) (1892, 1)
WARNING:tensorflow:Layer lstm_878 will not use cuDNN kernels since
             CAT         pred
2016-04-18  26151   [305.3028]
2016-04-19  24948   [223.7297]
2016-04-20  23632   [220.2381]
2016-04-21  23317  [207.08109]
2016-04-22  26704  [205.12709]
2016-04-23  31927  [237.69397]
2016-04-24  32654  [284.72052]
60/60 [==============================] - 0s 5ms/step
 > 23505.639
(1892, 14, 41) (1892, 1)
WARNING:tensorflow:Layer lstm_879 will not use cuDNN kernels since
             CAT         pred
2016-04-18  26151  [1929.2438]
2016-04-19  24948   [1975.008]
2016-04-20  23632  [1768.7395]
2016-04-21  23317  [1802.4238]
2016-04-22  26704  [1852.5564]
2016-04-23  31927  [1795.3759]
2016-04-24  32654  [1634.2294]
60/60 [==============================] - 0s 5ms/step
 > 23110.111
> Model[(14, 20, 5, 25, 500, 0, 'Adamax', 0.001, 'uniform', 'relu')
(1892, 7, 41) (1892, 1)
WARNING:tensorflow:Layer lstm_880 will not use cuDNN kernels since
             CAT         pred
```

```
# list(scores[0][0])[3]
```

[248] ✓ 0.0s

```
[((7, 100, 3, 25, 32, 7, 'Adamax', 0.001, 'uniform', 'linear'),
  2696.8214979172535),
 ((7, 100, 3, 25, 32, 7, 'Adamax', 0.001, 'normal', 'softplus'),
  2753.064273699226),
 ((7, 100, 3, 25, 32, 0, 'adam', 0.1, 'uniform', 'softplus'),
  2757.683987352025),
 ((7, 100, 5, 25, 32, 0, 'Adamax', 0.001, 'lecun_uniform', 'linear'),
  2806.410316367512),
 ((7, 100, 3, 25, 32, 7, 'Adamax', 0.001, 'lecun_uniform', 'linear'),
  2810.1668530102997),
 ((7, 100, 3, 25, 500, 7, 'adam', 0.1, 'uniform', 'relu'), 2816.3877056462734),
 ((7, 100, 3, 25, 500, 7, 'Adamax', 0.1, 'lecun_uniform', 'relu'),
  2816.550274475508),
 ((7, 100, 5, 25, 32, 7, 'adam', 0.001, 'normal', 'linear'),
  2829.101568128487),
 ((7, 50, 3, 25, 32, 7, 'adam', 0.1, 'uniform', 'relu'), 2861.148538708526),
 ((7, 50, 3, 25, 32, 7, 'adam', 0.1, 'lecun_uniform', 'linear'),
  2864.178037062165),
 ((7, 100, 3, 25, 32, 0, 'adam', 0.001, 'uniform', 'softplus'),
  2869.4516708969777),
 ((7, 100, 5, 25, 500, 7, 'adam', 0.001, 'normal', 'linear'),
  2871.871774562411),
 ((7, 50, 5, 25, 32, 7, 'Adamax', 0.001, 'uniform', 'linear'),
  2881.1306783106074),
 ((7, 50, 3, 25, 500, 7, 'adam', 0.001, 'lecun_uniform', 'linear'),
...
  23125.44112082266),
 ((14, 20, 5, 25, 500, 0, 'Adamax', 0.001, 'uniform', 'relu'),
  23307.875289082647),
 ((14, 20, 5, 25, 500, 0, 'Adagrad', 0.1, 'lecun_uniform', 'relu'),
  25296.419662021108)]
```

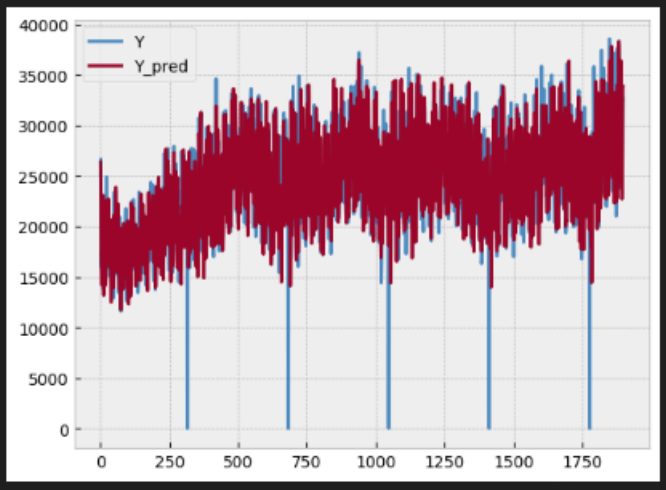
Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

```
data.head()
```

```
print(rmse(datos_plot["Y"],datos_plot["Y_pred"]))
```

[253] ✓ 0.2s

```
2479.324998402916
```




```
datos_plot#[datos_plot["Y"]>100000]
print(rmse(datos_plot["Y"],datos_plot["Y_pred"]))
datos_plot
```

[254] ✓ 0.0s

```
2479.324998402916
```

	Y	Y_pred
0	25187.0	26326.828491
1	26656.0	24485.402039
2	16015.0	17436.221069
3	17425.0	15819.301636
4	15351.0	14233.060303
...	...	...
1894	23632.0	22715.983887

PROBLEMS 38 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

##########################
cnn Household

```
    mem_info = process.memory_info()
    memory_mb = mem_info.rss / 1024 / 1024
    cpu_percent,memory_mb
```

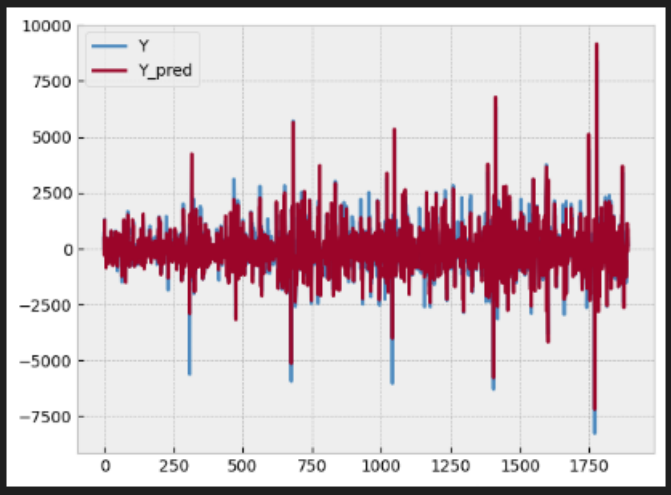
✓ 18m 53.2s

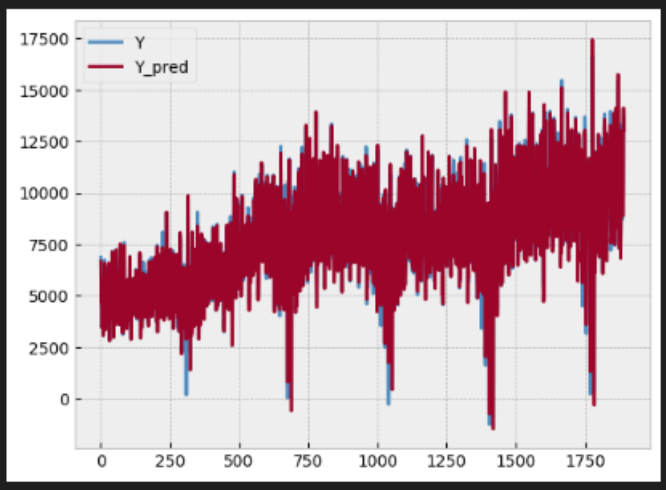
```
Total configs: 178
se correra modelos cnn
(1892, 7, 41) (1892, 1)
              CAT         pred
2016-04-18   8585   [9965.568]
2016-04-19   8835   [8714.684]
2016-04-20   8239    [8180.49]
2016-04-21   8363    [8859.53]
2016-04-22   9728     [9914.0]
2016-04-23  12248  [12029.551]
2016-04-24  12458  [12531.677]
60/60 [==============================] - 0s 2ms/step
 > 906.824
(1892, 7, 41) (1892, 1)
              CAT         pred
2016-04-18   8585   [9950.084]
2016-04-19   8835   [8579.392]
2016-04-20   8239  [8044.2793]
2016-04-21   8363   [8666.823]
2016-04-22   9728   [9563.577]
2016-04-23  12248  [11811.355]
2016-04-24  12458   [12227.08]
60/60 [==============================] - 0s 1ms/step
 > 898.210
> Model[(7, 50, 3, 40, 500, 7, 'Adamax', 0.001, 'lecun_uniform', 'relu')] 902.517
...
done
(14, 100, 5, 40, 500, 7, 'Adamax', 0.1, 'lecun_uniform', 'linear') 762.1146908320842
(14, 100, 5, 40, 32, 7, 'adam', 0.001, 'uniform', 'linear') 762.809758075409
(14, 50, 5, 40, 500, 7, 'Adamax', 0.1, 'normal', 'softplus') 763.567634907653
```

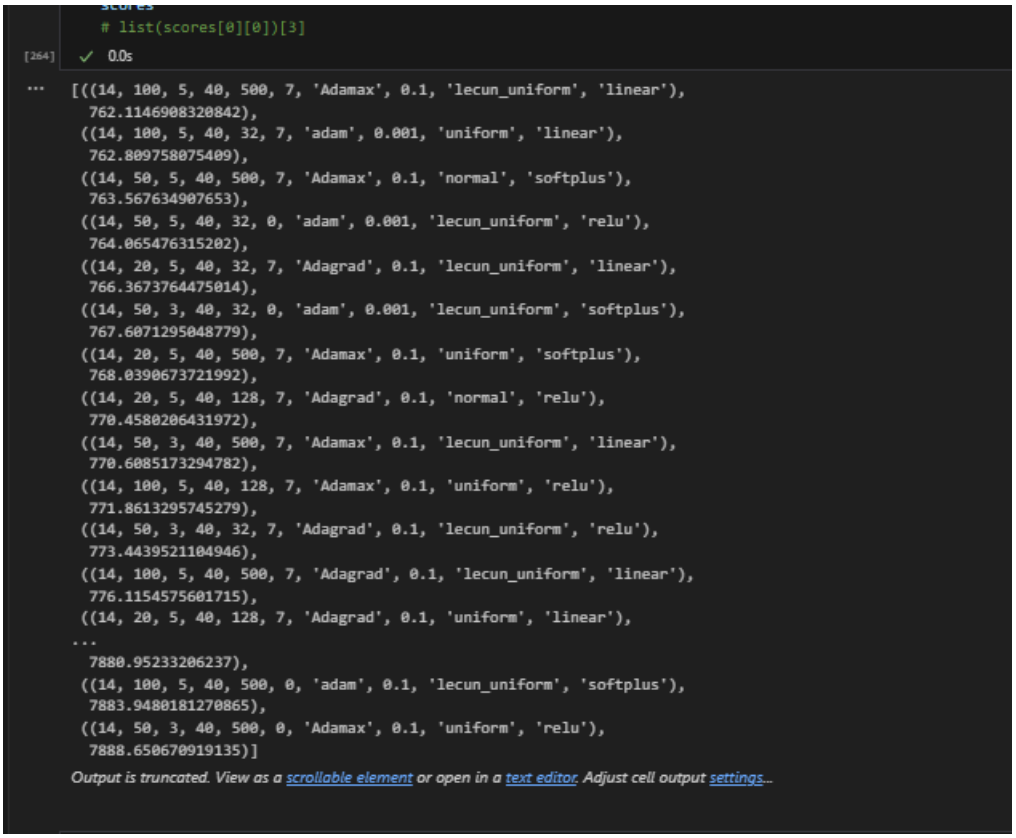
Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

```
(4.6, 1780.1875)
```

```
(1892, 14, 41) (1892, 1)
60/60 [==============================] - 0s 1ms/step
319.41528296607817
319.41528296607817
```






scores
list(scores[0][0])[3]
[264] ✓ 0.0s
[((14, 100, 5, 40, 500, 7, 'Adamax', 0.1, 'lecun_uniform', 'linear'),
762.1146908320842),
((14, 100, 5, 40, 32, 7, 'adam', 0.001, 'uniform', 'linear'),
762.809758075409),
((14, 50, 5, 40, 500, 7, 'Adamax', 0.1, 'normal', 'softplus'),
763.567634907653),
((14, 50, 5, 40, 32, 0, 'adam', 0.001, 'lecun_uniform', 'relu'),
764.065476315202),
((14, 20, 5, 40, 32, 7, 'Adagrad', 0.1, 'lecun_uniform', 'linear'),
766.3673764475014),
((14, 50, 3, 40, 32, 0, 'adam', 0.001, 'lecun_uniform', 'softplus'),
767.6071295048779),
((14, 20, 5, 40, 500, 7, 'Adamax', 0.1, 'uniform', 'softplus'),
768.0390673721992),
((14, 20, 5, 40, 128, 7, 'Adagrad', 0.1, 'normal', 'relu'),
770.4580206431972),
((14, 50, 3, 40, 500, 7, 'Adamax', 0.1, 'lecun_uniform', 'linear'),
770.6085173294782),
((14, 100, 5, 40, 128, 7, 'Adamax', 0.1, 'uniform', 'relu'),
771.8613295745279),
((14, 50, 3, 40, 32, 7, 'Adagrad', 0.1, 'lecun_uniform', 'relu'),
773.4439521104946),
((14, 100, 5, 40, 500, 7, 'Adagrad', 0.1, 'lecun_uniform', 'linear'),
776.1154575601715),
((14, 20, 5, 40, 128, 7, 'Adagrad', 0.1, 'uniform', 'linear'),
...
7880.95233206237),
((14, 100, 5, 40, 500, 0, 'adam', 0.1, 'lecun_uniform', 'softplus'),
7883.9480181270865),
((14, 50, 3, 40, 500, 0, 'Adamax', 0.1, 'uniform', 'relu'),
7888.650670919135)]
Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

CNN Hobbies

```
    mem_info = process.memory_info()
    memory_mb = mem_info.rss / 1024 / 1024
    cpu_percent,memory_mb
```

[269] ✓ 38m 4.9s

```
Total configs: 349
se correra modelos cnn
(1885, 14, 41) (1885, 1)
               CAT         pred
2016-04-18  3323  [1836.3467]
2016-04-19  3787  [2773.6885]
2016-04-20  3472   [3515.171]
2016-04-21  3353  [3990.3176]
2016-04-22  4085  [5290.0693]
2016-04-23  4787   [5020.542]
2016-04-24  4683  [4018.2761]
59/59 [==============================] - 0s 1ms/step
 > 382.471
(1885, 14, 41) (1885, 1)
               CAT         pred
2016-04-18  3323  [2077.4995]
2016-04-19  3787  [3368.7207]
2016-04-20  3472   [4313.713]
2016-04-21  3353    [4901.81]
2016-04-22  4085   [6332.213]
2016-04-23  4787   [6342.749]
2016-04-24  4683  [3556.3838]
59/59 [==============================] - 0s 1ms/step
 > 380.255
> Model[(14, 50, 3, 40, 500, 7, 'Adagrad', 0.1, 'lecun_uniform', 'relu')] 381.363
...
done
(14, 100, 5, 40, 32, 7, 'adam', 0.1, 'lecun_uniform', 'softplus') 357.3718263567822
(14, 20, 5, 40, 32, 0, 'adam', 0.1, 'normal', 'linear') 358.67943977115414
(14, 50, 5, 40, 32, 7, 'Adagrad', 0.1, 'lecun_uniform', 'softplus') 359.3895808108397
```

Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

```
(4.3, 1611.72265625)
```

Guardar scores

Guardar scores

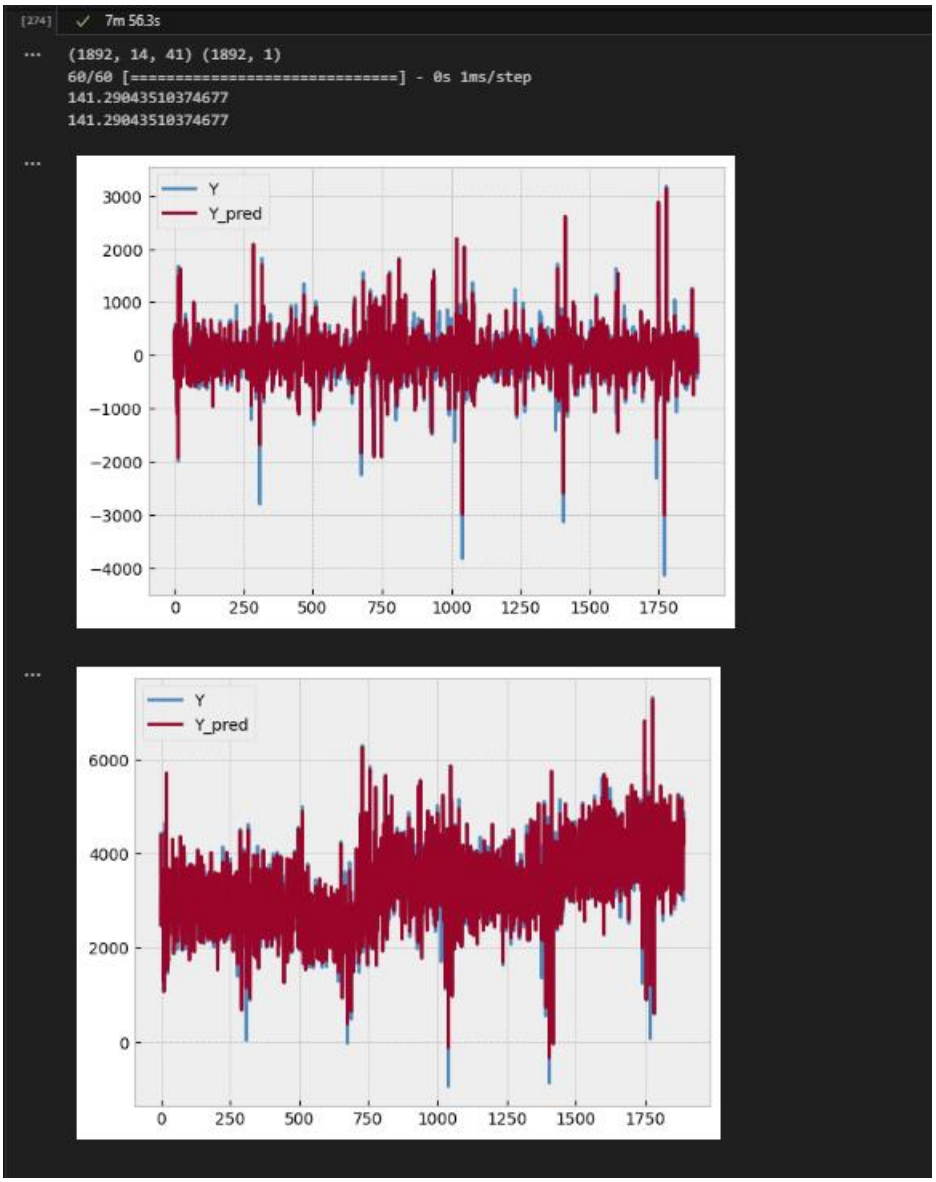
```
pd.DataFrame(scores,columns=["conf","score"]).to_csv("CNN_Hobbies.csv")
scores
```

[270] ✓ 0.0s

```
[((14, 100, 5, 40, 32, 7, 'adam', 0.1, 'lecun_uniform', 'softplus'),
  357.3718263567822),
 ((14, 20, 5, 40, 32, 0, 'adam', 0.1, 'normal', 'linear'), 358.67943977115414),
 ((14, 50, 5, 40, 32, 7, 'Adagrad', 0.1, 'lecun_uniform', 'softplus'),
  359.3895808108397),
 ((14, 50, 5, 40, 128, 7, 'Adamax', 0.1, 'normal', 'relu'),
  360.50828648200337),
 ((14, 50, 5, 40, 500, 7, 'Adamax', 0.1, 'lecun_uniform', 'relu'),
  361.3579475921001),
 ((14, 20, 5, 40, 32, 0, 'adam', 0.1, 'uniform', 'linear'), 362.5519551947141),
 ((14, 50, 5, 40, 128, 7, 'Adagrad', 0.1, 'uniform', 'softplus'),
  363.2974555778706),
 ((14, 50, 5, 40, 32, 0, 'adam', 0.1, 'uniform', 'linear'),
  364.56655238711414),
 ((14, 20, 5, 40, 32, 7, 'Adagrad', 0.1, 'lecun_uniform', 'softplus'),
  366.7002901753863),
 ((14, 100, 5, 40, 128, 7, 'Adamax', 0.1, 'uniform', 'linear'),
  366.70916674343755),
 ((14, 20, 5, 40, 500, 7, 'Adamax', 0.1, 'lecun_uniform', 'softplus'),
  368.0939941039401),
 ((14, 50, 5, 40, 32, 7, 'adam', 0.001, 'lecun_uniform', 'softplus'),
  368.154152864248),
 ((14, 100, 5, 40, 128, 7, 'adam', 0.001, 'normal', 'softplus'),
  370.75880558656513),
 ((14, 100, 5, 40, 128, 7, 'Adamax', 0.1, 'lecun_uniform', 'linear'),
...
 ((14, 20, 5, 40, 128, 0, 'adam', 0.1, 'normal', 'softplus'),
  3221.3006116885354),
 ((14, 100, 3, 40, 128, 0, 'adam', 0.1, 'normal', 'relu'), 3228.2441872442337),
 ((14, 50, 5, 40, 128, 0, 'Adamax', 0.1, 'lecun_uniform', 'relu'),
  3260.1235441732724)]
```

Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

Correr para lstm


[274]
7m 56.3s
(1892, 14, 41) (1892, 1)
60/60 [==============================] - 0s 1ms/step
141.29043510374677
141.29043510374677
Y
Y_pred
3000
2000
1000
0
−1000
−2000
−3000
−4000
0
250
500
750
1000
1250
1500
1750
Y
Y_pred
6000
4000
2000
0
0
250
500
750
1000
1250
1500
1750

CNN Foods

```
cpu_percent,memory_mb
```

[276] ✓ 36m 3.7s

```
Total configs: 369
se correra modelos cnn
(1885, 14, 41) (1885, 1)
                CAT         pred
2016-04-18  26151  [29854.316]
2016-04-19  24948  [28204.639]
2016-04-20  23632  [24237.947]
2016-04-21  23317  [27660.229]
2016-04-22  26704  [31090.898]
2016-04-23  31927  [33697.266]
2016-04-24  32654   [36824.93]
59/59 [==============================] - 0s 1ms/step
 > 2462.057
(1885, 14, 41) (1885, 1)
                CAT         pred
2016-04-18  26151   [29181.34]
2016-04-19  24948  [27172.598]
2016-04-20  23632  [22501.355]
2016-04-21  23317  [26731.898]
2016-04-22  26704  [30273.658]
2016-04-23  31927  [32434.225]
2016-04-24  32654  [36694.996]
59/59 [==============================] - 0s 1ms/step
 > 2451.645
> Model[(14, 50, 5, 40, 32, 7, 'Adamax', 0.001, 'uniform', 'relu')] 2456.851
...
done
(14, 100, 5, 40, 32, 7, 'Adagrad', 0.1, 'normal', 'relu') 2150.8768962985673
(14, 50, 5, 40, 32, 7, 'Adagrad', 0.1, 'uniform', 'relu') 2219.101379191079
(14, 50, 5, 40, 128, 7, 'Adagrad', 0.1, 'lecun_uniform', 'relu') 2248.9869470270646
```

Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

```
(4.3, 2125.296875)
```

[277] ✓ 0.0s

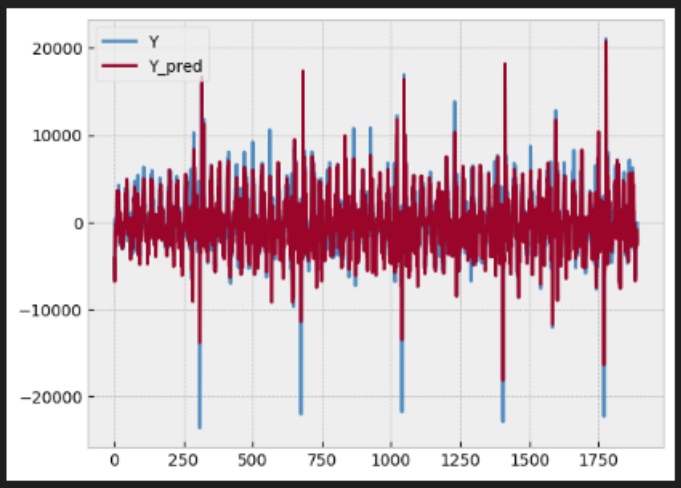
```
[((14, 100, 5, 40, 32, 7, 'Adagrad', 0.1, 'normal', 'relu'),
  2150.8768962985673),
 ((14, 50, 5, 40, 32, 7, 'Adagrad', 0.1, 'uniform', 'relu'),
  2219.101379191079),
 ((14, 50, 5, 40, 128, 7, 'Adagrad', 0.1, 'lecun_uniform', 'relu'),
  2248.9869470270646),
 ((14, 50, 5, 40, 128, 7, 'Adagrad', 0.1, 'normal', 'relu'),
  2251.8161347107507),
 ((14, 20, 5, 40, 32, 7, 'Adagrad', 0.1, 'lecun_uniform', 'relu'),
  2257.7827526192923),
 ((14, 50, 5, 40, 500, 7, 'Adamax', 0.1, 'uniform', 'softplus'),
  2286.534940220343),
 ((14, 50, 5, 40, 32, 7, 'adam', 0.001, 'uniform', 'softplus'),
  2291.7411372154534),
 ((14, 20, 5, 40, 128, 7, 'Adagrad', 0.1, 'uniform', 'softplus'),
  2293.752249027896),
 ((14, 50, 5, 40, 128, 7, 'Adagrad', 0.1, 'lecun_uniform', 'linear'),
  2311.345584475235),
 ((14, 20, 5, 40, 128, 7, 'Adagrad', 0.1, 'uniform', 'relu'),
  2315.1354695373834),
 ((14, 100, 3, 40, 128, 7, 'Adamax', 0.1, 'lecun_uniform', 'softplus'),
  2329.95662143557),
 ((14, 100, 5, 40, 128, 7, 'Adamax', 0.1, 'lecun_uniform', 'relu'),
  2336.487118404302),
 ((14, 50, 5, 40, 500, 7, 'Adagrad', 0.1, 'uniform', 'relu'),
...
  24079.920410113733),
 ((14, 100, 5, 40, 128, 0, 'Adamax', 0.1, 'normal', 'relu'),
  24081.297961969976),
 ((14, 100, 5, 40, 128, 0, 'Adamax', 0.1, 'lecun_uniform', 'softplus'),
  24081.828907753872)]
```

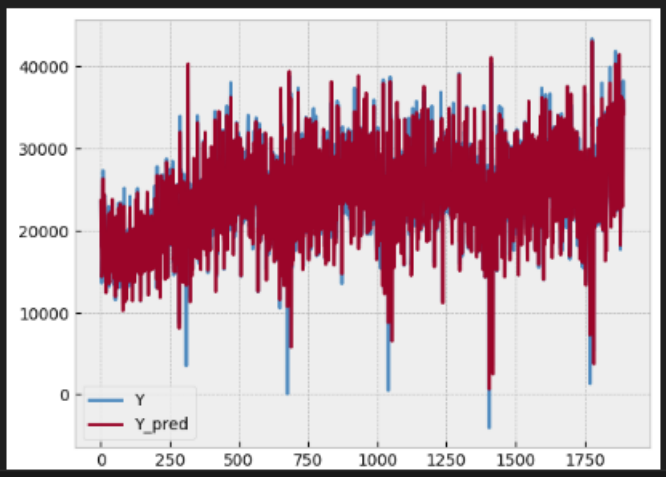
Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

PROBLEMS 67 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

[282] ✓ 35m 36.9s

```
(1892, 14, 41) (1892, 1)
60/60 [==============================] - 0s 2ms/step
1099.0043618887482
1099.0043618887482
```





PROBLEMS 67 OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

```
Total configs: 77
(1899, 7, 41) (1899, 1)
WARNING:tensorflow:Layer lstm_1252 will not use cuDNN kernels since it doesn't meet the criteria. It will use a generic GPU kernel as fallback when running on GPU.
60/60 [==============================] - 0s 3ms/step
2119.8242069223343
2119.8242069223343
```

	Y	Y_pred
0	25187.0	25488.225098
1	26656.0	22329.644775
2	16015.0	17461.578735
3	17425.0	17459.586273
4	15351.0	14636.711426
...	...	...
1894	23632.0	22404.797241
1895	23317.0	23862.096191
1896	26704.0	27491.686035
1897	31927.0	31903.767883
1898	32654.0	33860.404114

1899 rows × 2 columns