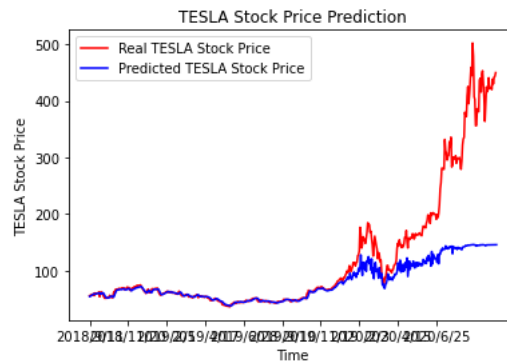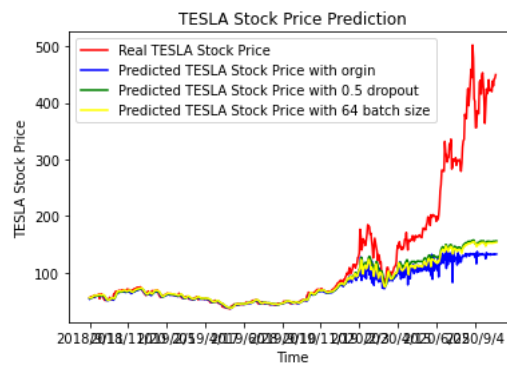# STAT6289_HW3

Yueqi Pan

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1 Problem 1 - Visualize the results

From the results, we can find the basic prediction of stock.

2 Problem 2 - Comparing

a. Compare two LSTM model with different batch size (blue line and yellow line)

Blue line is the prediction of stock prize with origin model (Batch size = 32). Yellow line is the prediction of stock prize with LSTM model using batch size = 64. From the result, we can find that the prediction of batch size = 64 between 2018 - 2020.1 is same with batch size =32, while after 2020.1, the prediction of batch size = 64 is higher than batch size = 32.

b. Compare two LSTM model with different dropout (blue line and green line)

Blue line is the prediction of stock prize with origin model (dropout = 0.2). Yellow line is the prediction of stock prize with LSTM model using dropout = 0.5. From the result, we can find that the prediction of batch dropout = 0.5 between 2018 - 2020.1 is same with dropout = 0.2, while after 2020.1, the prediction of batch dropout = 0.5 is higher than dropout = 0.2.
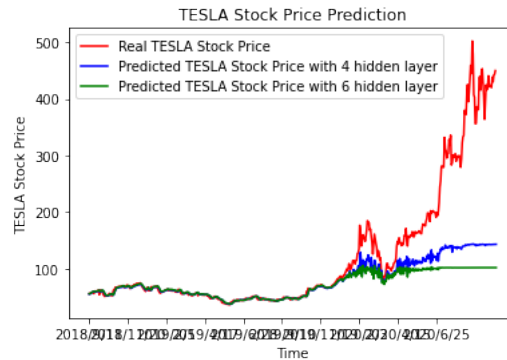

c. Compare two LSTM model with different hidden layer

From the plot, we can find that after 2020.1, the LSTM model with 6 hidden layers is lose gradient, while LSTM model with 4 hidden layers is not. That is because the LSTM model with 6 hidden layers is too complex for data and the deviations of this model is too small in the end of the counting. So, LSTM model with 4 hidden layers is more suit for this situation.

3   Problem 3 - Prediction in 2 weeks

Because this LSTM model use Open value and date as the data to predict the stock value, so I add 14 dates in the origin data, as 10.15.2020 - 10.28.2020, to predict.

Here are the two figure that we want.
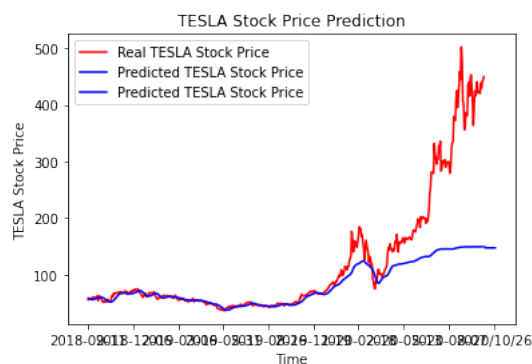
Code: Code please use this link and check STAT6289_$HW3.ipynb$ and HW3-(c).ipynb
GitHub link:
https://github.com/YueqiPan/STAT6289HW.git