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Kal Academy AI Bootcamp Assignment 5

RNN model – MSFT stock price dataset

Model: RNN with three hidden layers and four dropout layers of 0.2

RMSE: 4.75 – 5.75

How I chose my model:

First, after getting errors when I tried GridSearchCV, I found some articles and blog posts explaining that GridSearchCV doesn't work with LSTM models. So instead I ran my model multiple times, manually changing parameters to see what produced the best RMSE score. I tried many different combinations of neurons, epochs, and batch sizes, plus different numbers of hidden layers and dropout layers, and different dropout percentages. The model I chose was the only one that returned an RMSE value below 5.5, with several runs coming in at 4.75 – 4.9.

Then I moved on to see whether I could get better results writing a grid search function myself, based on the article on machinelearningmastery.com. This was challenging, since the way the author defined his LSTM model was very different from the way we learned in class. So far, I haven't been successful in adapting his code to my model. I've included 3 versions I tried in GitHub, along with my manually tuned model, if you want to see what I tried. I'm going to continue iterating on it to see if I can get something to work, but any feedback or tips would be appreciated!