Testing different numbers of weeks as input instead of 8. Top chart is mean squared error with # of input weeks on the x axis. Bottom chart is high-low accuracy with # weeks on the x axis. I am now using 40 weeks as input to the model because it showed a lower loss.

Chart, line chart

Description automatically generated

A picture containing chart

Description automatically generatedA picture containing treemap chart

Description automatically generatedRan pooling on the hyperparameter tuning heat maps to see if I could get rid of some noise. Came away with a # of estimators of 500 and a max tree depth of 350

Figure : With Pooling

Figure : Without Pooling

Comparing monthly performance of the Trading bot in the Training and Testing Sets

Chart, waterfall chart

Description automatically generatedChart, waterfall chart

Description automatically generated

Figure : Testing Set. 2006-2021

Figure : Training Set. 2000-2006

Chart, scatter chart

Description automatically generatedChart, scatter chart

Description automatically generatedComparing the rate of change of portfolio value of the Trading bot to the SNP 500

Figure 2: Training Set. 2000-2006

Figure 1: Testing set. 2006-2021

Chart, line chart

Description automatically generatedChart, histogram

Description automatically generatedIn both the training and testing sets, there is a clear linear relationship between the performance of the SNP 500 and the performance of the trading bot. Therefore, my idea was to have a trading flag so that the bot only traded when the 10-week average rate of change was positive. However, this did not yield better results. The red areas indicate weeks when the bot didn’t make any trades.

Figure . Without selective trading

Figure . With selective trading

Chart, line chart

Description automatically generatedChart, line chart

Description automatically generatedI also noticed when just training on AAPL that my prediction got much worse as time went on. Therefore I got the idea to add retraining capibility to the backtester. However, yet again, the results weren’t as good as they were in the original model.

Figure : Without retraining.

Figure : With retraining