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DSC680, Weeks 1-4

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Project 1: Milestone 3

Q&A (Answer the questions you proposed in Milestone 2)

Questions and Answers

Q: What is technical analysis?

Technical indicators are statistically calculated values based on closing price, volume and other parameters. These values show trends that indicate the health and direction of the stock.

Q: Is technical analysis better than fundamentals?

No. They are equally important in making decisions. Technical analysis would complement analysis based on fundamentals.

Q: What was the change in price of the stock overtime?

Relative Strength Index or RSI, measures speed and magnitude of a stock's most recent price changes (up or down). This will help evaluate whether a stock is overvalued (don't buy) or undervalued(buy).

Q:Have you investigated using feature engineering to generate new features?

While it wouldn't help with interpretability, I would be curious to try feature extraction for some dimensionality reduction and see how the models perform.

Q:Have you considered other measurements that may be useful as features?

Not having access to the financial institution's methods used for analysis, it is difficult to come up with additional measurements. But I think there is an opportunity here for someone with experience in stock market analysis with predictive models to come up with new measurements.

Q: Are there other models or algorithms that can be used

Yes. Classification algorithms can be used to allow for binary decisions. Other models for price prediction such as linear or non-linear regression can be used; however, the dataset would have to be accommodating.

Q: Are there other technical indicators?

Yes, there are over 30 technical indicators, and the number is increasing.

Q: Can variables other than open, close, high, low be used, if so name 2-3.

Adjusted close, and volume are also used. Other trending parameters related to the industry can be used.

Q. What are recurrent neural networks?

A recurrent neural network (RNN) is a type of neural network commonly used for processing sequential data, such as time series or natural language text.

Q. Explain LSTM algorithm.

Long Short-Term Memory (LSTM) is a type of recurrent neural network (RNN) architecture that can learn long-term dependencies and is widely used in natural language processing, speech recognition, and other sequence-based or time series tasks.

Q. Can use of ML adversely affect the stock market trading?

Automated, rapid transactions conducted by machine learning have been know to cause disruptions, but effects have been temporary and minimal.

Q:Do you think much improvement could be made using an ensemble?

With the model already exceeding 98% accuracy, I would expect only marginal improvements at this point, though it certainly couldn't hurt. Comparing confusion matrices for different models shows some variation in class predictions for different models. Some classes appear to be a bit more difficult to predict so there may be some opportunity there.

Q:Do you think you would see any improvement by using other transformations on different feature variables?

I think the current approach is more effective in this kind of predication.