Project Proposal

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With the abundance of different cryptocurrencies, there are too many to know which to invest in and when you have invested, when to sell. To allow for more people to feel comfortable with investing into more diverse cryptocurrencies an application which can predict the rise and fall of a currency would be a boon to solve this issue.

Our project will be an application which will predict future cryptocurrency prices based on historical data. This application can cause cryptocurrency trading to be a stable form of income with minimal risk to the investor, which could allow for these cryptocurrencies to become more mainstream in the commercial setting. This could also reduce the amount of knowledge and effort required by a new investor into cryptocurrency.

Our prediction model will be a neural network with reinforcement learning. This will be implemented using Python and the Pandas and Keras libraries. We will train and test our neural network separately with the following cryptocurrencies: Bitcoin, Ethereum, Litecoin, Stellar Lumens, and Dogecoin. The time series data will come from Yahoo Finance data logs. This data contains date, open price, high price, low price, close price, adjusted closing, and volume. The output will be a recommendation on when to buy and sell the cryptocurrency to get the most profit.

This problem and solution have been attempted before for both stocks and cryptocurrencies. These have had varying success due to the complex nature of cryptocurrencies. We will try to repeat the good results that other attempts have achieved and alter our model as needed to improve the results. This could be done by adding more parameters outside of our original data set or with hyperparameter tuning. The main challenge for improving the model beyond this is knowing what information is relevant for predicting and being able to obtain that information. For example, public sentiment and number of positive articles and traction of those articles can significantly affect the price. The model will not be able to predict if a prominent public figure sends out a tweet about bitcoin spontaneously. Hopefully, our result will be accurate enough without this information to be able to generate a profit.