**Capstone\_Final\_Report**

**Problem:**

With cryptocurrencies become increasingly popular investment opportunities, many new investors are wondering how they can go about deciding when to either buy/sell their assets. This project’s final model is meant to help solve the problem of when to buy/sell Ethereum.

**Approach:**

This problem was approached by looking into Ethereum’s performance since its introduction to the public in 2016. The dataset contained the closing day price of Ethereum over the last 5 years as well as the corresponding closing day price of the S&P 500. By taking these two past financial performances, the model was fitted and tested to predict whether the price of Ethereum would either increase/decrease.

**Findings:**

correlation: 0.466 p-value: 1.17 ^ -66

Since the p-value was less than 0.05, the null hypothesis was rejected. This means there is a positive correlation between the performance of the S&P 500 and the performance of Ethereum.

It was deduced, after using trend plots, that the month of December is when the two financial performances are at their highest and March is when their performances are at their lowest.

With an F1 score of 62.5, Model 5 is the best model at predicting whether the price of Ethereum will increase/ decrease based on the past performance of the S&P 500 and Ethereum.

**Further Research:** Further research can be done by trying to recreate this study with other cryptocurrencies with the S&P 500. Another option would be to taking a closer look at monthly trends or even weekly trends. A third option for further research would be recreate this study using two cryptocurrencies.

**Recommendations:**

My first recommendation is for Model 5 to be the basis of an investment trading assistance tool. It would be used by investor who would need help deciding when to either buy/sell their investments in Ethereum.

My second recommendation is to use the Monthly trend plots to help decide when to buy/sell shares of companies that happen to impact the S&P 500 the most.

My third recommendation is to use my findings as the basis for research into other cryptocurrencies and their possible correlations with traditional investment vehicles.