

Homework #2 – Final Project Proposal

1. **What's the name of your final project? Please describe it as a research question and provide a short description [5 points]**

Can the timing and volume Ethereum trades of major cryptocurrency wallets be used as an indicator for major price actions of the Ethereum cryptocurrency?

It is assumed that major cryptocurrency wallets have alpha information that gives them an “edge” or “advantage” when determining the future price of the Ethereum cryptocurrency. Therefore, they may have the ability to perform Ethereum trades with a greater success rate of being profitable. This project aims to analyze how the timing and volume of Ethereum trades (buys and sells) from major cryptocurrency wallets correlates with major price actions (up or down movement) of the Ethereum cryptocurrency. For example, these trades can be considered a “strong” indicator if a major cryptocurrency wallet buys Ethereum, and a larger volume of it, a specific time, prior to a significant increase in the price of the Ethereum cryptocurrency. Therefore, “buying” should indicate an increase in Ethereum’s price, and “selling” should indicate a decrease in Ethereum’s price.

2. **What data sources are available? Could you find multiple data sources? How are you going to collect them? How many data samples are you going to collect? [5 points]**

Ethereum Transaction Data (JSON):

- To collect data on the Ethereum trade transaction of major cryptocurrency wallets, I will be using the Etherscan API. (<https://docs.etherscan.io/api-endpoints/accounts#get-a-list-of-erc20-token-transfer-events-by-address>)
- The Etherscan API can return to me all the transactions for a specific time and cryptocurrency by account (input wallet address).
- I plan to collect the 100 most recent Ethereum trade transactions from 10 major cryptocurrency wallets. (1000 transactions total)

Current and Historical Ethereum Price (JSON):

- To collect data on the current and historical price data of Ethereum, I will use the CoinMarketCap API. (<https://coinmarketcap.com/api/documentation/v1/#operation/getV1GlobalmetricsQuotesHistorical>)
- For a specific cryptocurrency (in this case, it's Ethereum), I will retrieve its price data based on the timing on the timing of trades from the major cryptocurrency wallets.
- I will retrieve the price data on 7-day intervals for 10 years (520 data points).

3. **What kind of analyses or visualizations do you want to do? [5 points]**

- Linear Regression Model of Trade Transaction Timing, and Ethereum price movement. (Independent Variable: Date and Time)
- Bar Graph of the success rate of profitability of based on the transactions from the major cryptocurrency wallets.
- Line Graph of when and where major cryptocurrency wallets bought into and sold out of the Ethereum cryptocurrency.