Project Proposal

- Problem: to predict the behavior of the stock market. Interesting problem because it really only involves one number to predict, but it depends more on the whims of people purchasing and selling something abstract.
- Resources (data):
    - Historical stock market data
    - Common statistics done on the stock data (moving average, bolinger bands, etc)
    - News articles
    - Social Media (ie twitter)
- Method of collection:
    - Historical stock market data
        - API's and libraries for python
        - Could also grab data from websites if needed
    - Stats
        - Code them in myself using online resources for formulas
    - News articles
        - API's or existing datasets if available
        - Web scraping
    - Social Media
        - Most likely API's
        - Scraping if possible
- Method of approach:
    - I plan on creating a few similarly trained machines for various stocks. Most likely going to be specialized for each individual ticker.
    - Using sentiment analysis on the news articles
    - Possibly a combination of sentiment analysis and deep learning for social media feeds
    - Aggregate the evaluations in the end with varying weights for votes on whether to buy or not buy
    - Most likely going to end up daily evaluations
    - If I have time and if it's possible want to be able to implement some sort of event input, most likely not going to happen
    - Supervised, regression
- Final Deliverable
    - Web application used to predict whether to buy or sell
    - Possibility to actually use funds to make automated purchases and sales
- Computational resources
    - Not too sure right now, depends on the difficulty of training a deep learning model
    - May possibly need better hardware, or use an online resource for computations
    - Definitely going to need a GPU