

The Problem:

Advanced tools for making investments are lacking in many major ways. Though many toolsets for sentiment analysis and trend recognition for stocks exist, few effective versions are publically available.

My Solution:

To approach this problem, I will develop models to find the trends I believe are most useful to consider when making an investment. A user will then be able to enter in a stock he/she is considering investing in and my application will be able to display trends and predictions for those trends. Ultimately, the application should also be able to display some of the data it used to determine those trends for the user to consider as well. Time permitting, I will use the trends in a neural net to provide a recommendation (buy or sell) to the user by taking into account the trends it found.

Approach:

Trend 1: Earnings price trend

This will display a chart of stock prices involving only dates close to the time when the company releases earnings. This will enable a view of the company's performance with much of the noise of daily fluctuations reduced.

Trend 2: Sentiment based stock performance

This trend will take into account the sentiment expressed about the company on twitter, and plot the changes in this sentiment with respect to the stock price.

Trend 3: Sentiment relative to price fluctuations

Using this trend, the user will be able to see how closely the sentiment expressed about a stock and the fluctuations caused by that sentiment are correlated.

I will gather the data for the above trends using the yahoo finance api, as well as the twitter api and use matplotlib, numpy and sklearn for the regression models. I will then use flask to use the project as a webapp.