

Project Title: Non-Binary Market Sentiment Prediction Based on the Dynamic Analysis of the News

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Project Description:

A strong passion for finance unites our team. To stay on top of the rapidly changing financial markets, however, one needs to keep track of the news, which is quite time consuming. Fear not, professor, we have a solution for you!

We are creating a Web Application that will scrape and analyze the latest financial news, split it by field, sentiment, and source reliability, run NLP analysis and return a continuous variable predicting the sentiment of the financial market.

Resultantly, users will be able to make informed decisions about which are the most promising stocks and fields to invest in and what time is best.

Business Needs:

- To save time reading the news (text analysis)
- Quick and important decisions regarding the S&P 500 market
- Ultimately hopes are to give profitable signals regarding the market

Functionality:

- Sleek front-end interface with mobile responsiveness
 - Text and other elements should fit the screen in a readable manner
- Filter companies by field (tech, business, etc.)
- Small calculator which user can insert principal and other criteria to receive profit predictions.
 - There will be a field value to enter the dollar amount that the user would want to invest as principal.
 - The program will plug that value and depending on buy or sell signal, will automatically apply the gains return and display it to the user.

Expected Values:

Tangible:

- Users will get a value for certainty of outcome of stocks given prediction to the nearest tenth of a percent
- Users will get a 0 or 1 signal to buy or short a stock
- Calculation of returns given principal amount to the nearest cent

Intangible:

- Users will be able to make informed decisions about S&P 500 stocks
- High-quality user experience
- Users get up-to-date market information

Special Issues and Constraints:

- Consistent flow of financial data
 - What if for a period of time there are no articles to scrape? How will we get our data?
- Market predictability is always uncertain
 - It is impossible to perfectly predict the future, and so our model may not give concrete advice on what to do with stocks.
- Access to and effectiveness of NLP models
 - It may be difficult to access a pretrained NLP models that is effective for our app.
 - Furthermore, even if we did have a good NLP model, being able to translate results to market suggestions will be difficult.