**CSE4059 Cognitive Systems**

**DA-3**

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**UNISTOCK**

**Problem Statement:**

The main issue we found, which is currently faced by our youth, is learning how to invest, majorly in the stock market. The stock market is a highly volatile space and lack of proper knowledge and research may lead to heavy losses. A proper, safe and easy to use environment is needed to learn investing.

Apart from this, there are also many emerging start-ups. These start-ups often have the need to get a proper public evaluation, idea credibility report and market value.

**Solution:**

The name of the project is Unistock, and it aims to provide a stock market sandbox for people to simulate and use a virtual stock market and do one of 3 things:

* Evaluate their idea as per current market
* See stock analysis and learn investing
* Learn how different factors affect stocks of particular sectors in the market

**Architecture Diagram:**

**Text

Description automatically generated with medium confidence**

**Dataset:**

The dataset for this is generated using Sentiment analysis as well as normal web scraping. Scraping is used to obtain current price, sector of stock market, while sentiment analysis is used to predict and quantify the growth or loss factor. This is done by evaluating stock news as well as previous graphs.

After the data is pre-processed from these two factors, it is stored in a csv file.

**Algorithm:**

We are using 3 sets of algorithms for the project:

* Naïve Bayes: We switch from KNN to Naïve Bayes algorithm since we got almost 100% increase in accuracy. Naïve Bayes is used to classify the Price and Growth rate of Stocks into their respective sectors.
* We then use LSTM to predict growth trends based on Short Term data and the potential growth factor (Obtained from sentiment analysis)
* We also use Regression models to establish a relation between the Initial price of the stock and the Growth rate. This, along with the classifier, allows us to find growth rate for a given sector stock with some desired initial price, or vice versa.

**Conclusion:**

Thus, we have proposed a cognitive simulated system to analyse and simulated the stock market.

**Future Work:**

Successfully create a proper UI for easier use for everyone. Allow stock evaluation and NLP models to evaluate ideas. Create a proper MVP for the product and deploy it.