Fall 2021: CSEE5590/490 – Special Topics
Python and Deep Learning
Project – Phase I

Team name: print("Hello Pythonians!")

Team Members Names:

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Scope or domain of the project

This project is focused on predicting the accurate stock prices and compares different company stocks using Historical daily prices and volumes of all U.S. stocks and ETFs. Also aims to find the trending stocks in a given timeframe.

Objective

Viewing Stocks prior to Covid-19 (Dec 2020) & after Vaccinations were made mandatory (March 2021 - current). Predict what stocks will look like 1 or more years from now. This can help investors to sell or buy depending on the predictions.

Problem Statement

To make investment decisions investor should be aware of how stock market works. If investors invest in a well known company stock at a bad time, He may face consequences of that, Investing in a ordinary stock at the right time can bear profits. The problem that investors are facing to trade, as they do not have good understand to which stocks to buy or to sell in order to get good profits.

As the stock prices fluctuates on hourly basis so predicting long term value can be uncomplicated.

End users of the application

We believe that the end users of this project are business leaders and also it helps company employees to check the company stocks while switching to different companies.

Our competitors

Currently there is no proper solution to check which company stock is trending more. We will try to analyze it by building an accurate neural network model. Existing projects used machine learning models such as SVM, Decision tree etc. we try to add more layers and hyperparameters to the LSTM model to predict highest accuracy.

The novelty of our solution

By predicting accurately in the future what the stocks will look like, we can prevent a plummet in the stock market such as the aftermath in the 1920s-1930s. Also, we try to implement a better model with highest accuracy possible and create an application that is easy for business leaders and other people to make good decisions in investing in stocks.

Technology

Python, Microsoft SQL Server Management Studio (Backend), Visual Studio (Middle), 2-Tier project. AWS for database hosting. Tkinter for GUI.

Algorithms: We will be using the deep learning model LSTM.

Libraries: Pandas, Numpy, keras, seaborn, matplotlib etc.

Dataset:

We will be using a dataset from the kaggle website. Dataset consists of stocks of different companies and ETFs tickers.
https://www.kaggle.com/borismarjanovic/price-volume-data-for-all-us-stocks-etfs

References

Budiharto, Widodo. "Data Science Approach to Stock Prices Forecasting in Indonesia during COVID-19 Using Long Short-Term Memory (LSTM)." *Journal of Big Data*, Springer International Publishing, 11 Mar. 2021, https://journalofbigdata.springeropen.com/articles/10.1186/s40537-021-00430-0.

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