Synopsis

Stock Price Prediction Project

Abstract :

It has never been easy to invest in a set of assets, the abnormality of the financial market does not allow simple models to predict future asset values with higher accuracy. Machine learning, which consists of making computers perform tasks that normally require human intelligence is currently the dominant trend in scientific research. This article aims to build a model using Machine learning Model using Deep Learning especially Long-Short Term Memory model (LSTM) to predict future stock market values. The main objective of this paper is to see in which precision a Machine learning algorithm can predict. Predicting stock market prices is a complex task that traditionally involves extensive human-computer interaction. This will provide more accurate results when compared to existing stock price prediction algorithms. The network is trained and evaluated for accuracy with various sizes of data, and the results are

tabulated. This paper is to predict stock market prices to make more acquainted and precise investment decisions.

Introduction:

Stock (also known as equity) is a security that represents the ownership of a fraction of a corporation. This entitles the owner of the stock to a proportion of the corporation's assets and profits equal to how much stock they own. Units of stock are called "shares."
A stock is a general term used to describe the ownership certificates of any company.

Stock prices change everyday by market forces. By this we mean that share prices change because of supply and demand. If more people want

to buy a stock (demand) than sell it (supply), then the price moves up. Conversely, if more people wanted to sell a stock than buy it, there would be greater supply than demand, and the price would fall.

Understanding supply and demand is easy. What is difficult to comprehend is what makes people like a particular stock and dislike another stock. This comes down to figuring out what news is positive for a company and what news is negative. There are many answers to this problem and just about any investor you ask has their own ideas and strategies.

That being said, the principal theory is that the price movement of a stock indicates what investors feel a company is worth. Don't equate a company's value with the stock price. The value of a company is its market capitalization, which is the stock price multiplied by the number of shares outstanding. For example, a company that trades at $100 per share and has 1,000,000 shares outstanding has a lesser value than a company that trades at $50 but has 5,000,000 shares outstanding ($100 x 1,000,000 = $100,000,000 while $50 x 5,000,000 = $250,000,000). To further complicate things, the price of a stock doesn't only reflect a company's current value–it also reflects the growth that investors expect in the future.

So, why do stock prices change? The best answer is that nobody really knows for sure. Some believe that it isn't possible to predict how stocks will change in price while others think that by drawing charts and looking at past price movements, you can determine when to buy and sell. The only thing we do know as a certainty is that stocks are volatile and can change in price extremely rapidly.

Understanding the Problem Statement

We'll dive into the implementation part of this Project soon, but first it's important to establish what we're aiming to solve. Broadly, stock market analysis is divided into two parts – Fundamental Analysis and Technical Analysis.

- Fundamental Analysis involves analyzing the company's future profitability on the basis of its current business environment and financial performance.
- Technical Analysis, on the other hand, includes reading the charts and using statistical figures to identify the trends in the stock market.

As you might have guessed, our focus will be on the technical analysis and visualization part. We'll be using a dataset from Google stock Price test and train.

Implementation:

1. Using Scikit Learning(Machine Learning model)
2. Data Preprocessing using dataset
3. Visualization of Dataset
4. Feature Scaling
5. Preparing the Datasets for training
6. Reshaping the datasets
7. Model development
8. Implementation of sequential, dense, LSTM and dropout.
9. Preprocessing the Data
10. Predicting the Output

11. Result visualization

Research Paper:

Project is totally based on research papers as project predict output using LSTM based deep learning models

https://arxiv.org/abs/2009.10819

https://www.aclweb.org/anthology/W19-6403.pdf

https://www.sciencedirect.com/science/article/pii/S1877050920304865

https://ieeexplore.ieee.org/document/9257950