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Stock Prices Prediction Using Machine Learning and Deep Learning Techniques

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Abstract - *Stock market is trading platform where different investors sale and purchase shares according to stock availability. Stock market ups and downs effects the profit of stakeholders. If market prices going up with available stock then stakeholders get profit with their purchased stocks. In other case, if market going down with available stock prices then stakeholders have to face losses. Buyers buy stocks with low prices and sell stocks at high prices and try to get huge profit. Similarly, sellers sell their products at high prices for profit purpose. Stock market work as trusty platform among sellers and buyers. Stocks are possibly the most popular financial instrument invented for building wealth and are the centrepiece of any investment portfolio. The advances in trading technology has opened up the markets so that nowadays nearly anybody can own stocks. From last few decades, there seen explosive increase in the average person's interest for stock market. In a financially explosive market, as the stock market, it is important to have a very accurate prediction of a future trend. Because of the financial crisis and re-cording profits, it is compulsory to have a secure prediction of the values of the stocks. Predicting a non-linear signal requires progressive algorithms of machine learning with help of Artificial Intelligence (AI).*

In Stock Market Prediction, the aim is to predict the future value of the financial stocks of a company. The recent trend in stock market prediction technologies is the use of machine learning which makes predictions based on the values of current stock market indices by training on their previous values. Machine learning itself employs different models to make prediction easier and authentic. The paper focuses on the use of Regression and LSTM based Machine learning to predict stock values. Factors considered are open, close, low, high and volume.

Keywords *- Close, high, low, LSTM model, open, regression, and volume.*

I. INTRODUCTION

The rapid progress in digital data acquisition has led to the fast-growing amount of data stored in databases, data warehouses, or other kinds of data repositories. Although valuable information may be hiding behind the data, the overwhelming data volume makes it difficult for human beings to extract them without powerful tools. Easy and quick availability to news information was not possible until the beginning of the last decade. In this age of information, news is now easily accessible, as content providers and content locators such as online news services have sprouted on the World Wide Web. Continuous availability of more news articles in digital form, the latest developments in Natural Language Processing (NLP) and the availability of faster computers lead to the question how to extract more information out of news articles.

Financial analysts who invest in stock markets usually are not aware of the stock market behavior. They are facing the problem of stock trading as they do not know which stocks to buy and which to sell in order to gain more profits. All these users know that the progress of the stock market depends a lot on relevant news and they have to deal daily with vast amount of information. They have to analyze all the news that appears on newspapers, magazines and other textual resources. But analysis of such amount of financial news and articles in order to extract useful knowledge exceeds human capabilities. Text mining techniques can help them automatically extracting the useful knowledge out of textual resources.

Problem definition: Difficult identify STOCK price prediction. has been at focus for years since it can yield significant growth by doing various investment. Predicting the stock market is not a simple task, mainly as a consequence of the close to random walk behavior of a stock time series.

II. METHODOLOGY

In this project, we have demonstrated a machine learning approach (deep learning) to predict stock market trend using different neural networks. Results show how history data has been used to predict stock movement with reasonable accuracy. Also, with T test result analysis we can conclude that LSTM performs better in comparison to Linear Regression. For this implementation, we can conclude that if we incorporate all the factors that affect performance of the stock and feed them to neural network with proper data preprocessing and filtering, after training the network we will be able to have a model which can predict stock momentum more accurately and precisely for the better idea of stock value so that firms may have increased profit ratio as compared to what is might be going currently at that time. This will also lead to more transparency regarding stock as it will be easier for firms to analyze loses and achieve great success.

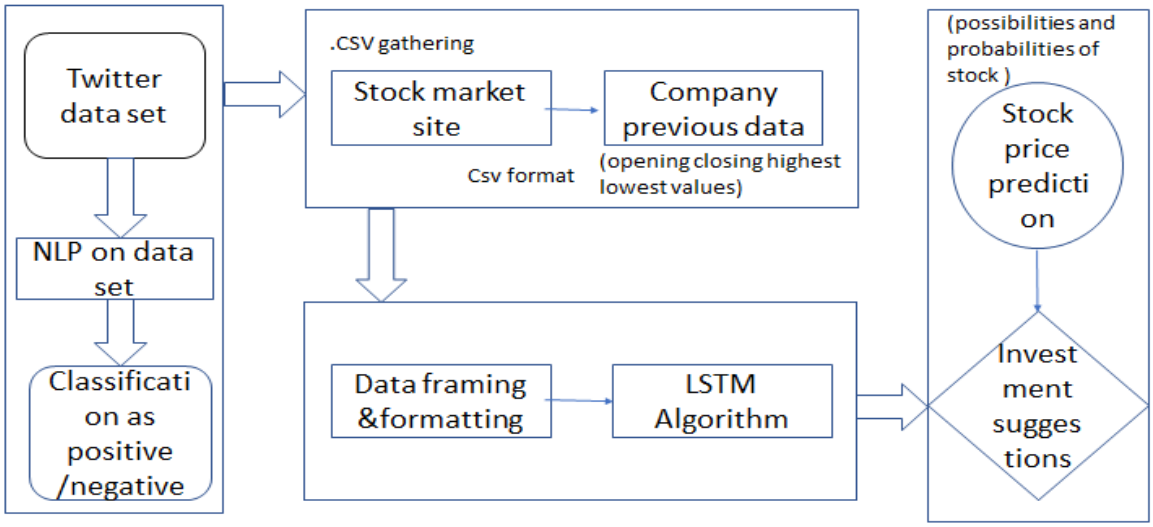

Fig. 1: Working process of the system

III. CONCLUSION

The purpose of this study is to increase the accuracy to forecast the prediction of stock using the combination of sentimental analysis, stock trend analysis and deep learning. The ultimate goal was to increase the yield from the investment. The accuracy was found to lean towards precision with increased data . In conclusion we can say that if we train our system with more input data set, modify the deep learning module to perform more trial and errors tests, it has the potential to generate more accurate and significantly more consistent minimal error predictions.

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