The Background Study for Survey of Stock Market Prediction Using Machine Learning Approach

In recent years, research on the stock market is one of the most important. This paper leads to a developing way of predicting the stock market. And that could help people in a new way.

Objectives and Motivations for the paper: Here research study is to help the stockbrokers and investors for investing money in the stock market. As per the paper, the objective is stock market prices people search for such methods and tools which will increase their profits while minimizing their risks. While developing some tools for that would be easy. As prediction is much difficult for the stock price as price movement just behaves like a random walk and time-varying.

So, developing some tools or methodology by using old data would give much accuracy for prediction and that would be given a great result for Prediction of stock prices.

Methodology: In the paper, they have proposed a method. Employing traditional methods like fundamental and technical analysis may not ensure the reliability of the prediction. To make predictions regression analysis is used mostly. In this paper, the survey of well-known efficient regression approach to predict the stock market price from stock market data based. So, in the future, the results of the multiple regression approach could be improved using a greater number of variables.

Here they discussed 4 regression methods. Many techniques for carrying out regression analysis have been developed. Familiar methods such as linear regression and ordinary regression are parametric.

Contribution of the work: The stock market plays a very important role in fast the economic growth of the developing country like So developing nation’s growth may depend on the performance of the stock market. If the stock market rises, then countries' economic growth would be high. So, this kind of survey and their upcoming results develops a big hope for people to work with the stock market as it reduces the risk. This survey also clears a big doubt about the stock market which is buying and selling shares is not an act of gambling. Prediction plays a

very important role in the stock market business which is a very complicated and challenging process due to the dynamic nature of the stock market. And this survey helps to develop a good prediction by using its methodology.

***Lackings of the work*:** Despite achieving such an improvement in prediction by using regression, there are some lacking. Since the true form of the data-generating process is generally not known, regression analysis often depends to some extent on making assumptions about this process. However, in many applications, especially with small effects or questions of causality based on observational data, regression methods can give misleading results. And that can affect prediction which will greatly impact the business. But the author ignored that cause of the next step. But that was important.

Finally, after going through the paper, I have understood that the author had a great result of the prediction of the stock market by using those methods. I, along with my groupmates, could use this strategy to have a finer and preferable result.

The Background Study for Machine Learning in Capital Markets: Decision Support System for Outcome Analysis

The focus of this paper is to use ML (Machine Learning) techniques to direct the challenges of trading and investment into an optimal dynamic strategy. In recent years, there are a huge amount of data available in the trading field. That data can be used for discovering patterns to make decisions in trading by exploring Artificial Intelligent (AI) methodologies.

Objectives and Motivations for the paper: Their objective is to ensure the key requirements such as transparency and accountability. The model will ensure high interpretability of the capital market providing understandable relevant outcomes. So, they presented a method, DSS-OA, which is very much useful for analyzing the outcome of financial trading data.

Method: DSS-OA has four steps, pre-processing, feature selection, feature encoding, and decision tree. The proposed DSS-OA is: first, by using the dataset of orders, trader's data, and brokers' data, an analysis will be done upon post-trading and pre-trading. This is where the DSS-OA comes in. Using the four stages described earlier, it will give an outcome based on the analysis.

Contributions: DSS-OA system tends to detect the most critical predictions as it is not easy. This analysis could support the short- and long-term forecast of the order flow for financial trading prediction. To analyze financial data, they have established a closed-loop machine learning system based on the DT algorithm as the main part of the DSS-OA system. Their work has made a good impact on the field of data science.

Lakings: There are so many features consecutively to work and if any fails there is no mentionable alternative way in this paper.

As the system has a high-interpretability and predictive performance, I think I could use some of the techniques demonstrated in their paper. I could use the DT algorithm for our project to have a better prediction.