Forecasting Stock Price Using Big Data Analysis

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1. INTRODUCTION

The stock prices in the financial market are dynamically changing and make it challenging to predict stock prices as it consists of a lot of noises and the issue is nonlinear. The prediction of the trend of the financial market is difficult because it depends on too many factors and needs to consider all factors for the forecast to be made [2]. For the high-frequency trading to be performed; banks, traders, financial companies and institutions use big data for generating trade analytics. The detection of illegal activities like financial frauds and money laundering, big data analytics is helpful [1].

The paper described various models to forecast stock price and trend which include Artificial Neural Networks (ANNs), Time Series Model, Regression, etc. The authors have used the last 9 years' stock data of "Nifty 50" to model the system. They have used this stock data as an input to several mathematical models algorithms like Polynomial model, Autoregressive Integrated Moving Average (ARIMA) model, Linear Regression method, Artificial Neural Network (ANN) models, etc. After comparing the results, the writer gave the most efficient and accurate model for prediction [3]. The author used real time data from Yahoo Finance to build a system that analyses US oil stocks to predict daily gains in the US stocks. He has used the machine learning module of Spark to forecast stocks with high daily gains in US oil stocks. To perform this analysis for any type and data scale, he proposed a robust Cloudera-Hadoop based data pipeline [1]. The classification of data mining is predictive and descriptive. The paper utilized clustering and regression, wherein comparison of data mining methods, clustering is descriptive and regression is predictive. The value of data is predicted using regression and the relationship between the data is detected using clustering. The paper used numberai (number.ai) for analyzing and predicting the trends of stocks using regression technique [2].

Section 2 will provide background about each method. Section 3 will provide common similarities between the methods. Section 4 will give details about how each method approaches predicting stock price using different methods. Section 5 will provide summary about method which is not used in other methods. Section 6 will provide conclusion of all three referenced papers.

2. BACKGROUND

3. COMMON THEMES

4. DISCORDANT THEMES

5. NON-OVERLAPPING THEMES

6. CONCLUSION

7. REFERENCES

[1] Z. Peng. Stocks analysis and prediction using big data analytics. In *2019 International Conference on Intelligent Transportation, Big Data Smart City (ICITBS)*, pages 309–312, Jan 2019.

[2] S. Singh and S. Sharma. Forecasting stock price using partial least squares regression. In *2018 8th International Conference on Cloud Computing, Data Science Engineering (Confluence)*, pages 587–591, Jan 2018.

[3] S. Tiwari, A. Bharadwaj, and S. Gupta. Stock price prediction using data analytics. In *2017 International Conference on Advances in Computing, Communication and Control (ICAC3)*, pages 1–5, Dec 2017.