A Survey : Analysis and Estimation of Share Market Scenario

Devansh Dhote[1] , Piyush Rai[2] , Sunil Deshmukh[3], Adarsh Jaiswal[4], Prof. Yogesh Mali[5]

[1,2,3,4]Student, Department of Computer Engineering, Dr. D. Y. Patil School of Engineering, Lohegoan, Savitribai Phule Pune University, Pune, Maharashtra, India

[5]Professor, Department of Computer Engineering, Dr. D. Y. Patil School of Engineering, Lohegoan, Savitribai Phule Pune University, Pune, Maharashtra, India

ABSTRACT

Share market is a public market for the transaction of business share. It is an organized set-up with a monitoring body and the members who trade in shares are registered with the share market and regulatory body Security Exchange of Board India. Since share market data are highly time-variant and are normally in a nonlinear pattern, analyzing the future price of a share is highly challenging. Analysis provides sophisticated information regarding the current status of the share price movement. Thus this can be developed in decision making for customers in finalizing whether to buy or sell the particular shares of a given share. Many investigators have been carried out for analyzing share market price using various data mining techniques. This work aims at using of Artificial Neural Network techniques to predict the share price of companies listed under index of National Share Exchange (NSE). The past data of the selected share will be used for building and training the models. The results from the model will be used for comparison with the real data to determine the accuracy of the model.

Keywords : Share Market, Analysis, Machine Learning, Supervised Learning Algorithm, Linear Regression, Data Analysis.

I. INTRODUCTION

Analysis of Share market returns is an important issue and very complex in financial institutions. The analysis of share prices has always been a challenging task. It has been observed that the share prices of any company do not necessarily only depend on the financial status of the company but also depends on socio economic situation of the country various technical, fundamental, and statistical indicators have been proposed and used with varying results. However, no one technique or combination of techniques has been successful enough. With the development of neural networks, researchers and investors are hoping that the market confidentialities can be unraveled. A share market is a public market for the trading of company share and results at an agreed price; these are

securities listed on a share exchange as well as those only traded privately. It is an organized set-up with a regulatory body and the members who trade in shares are registered with the share market and regulatory body SEBI(Share Exchange Board India.

The share market is also called the secondary market as it involves trading between two investors. Share market gets investors together to buy and sell their shares. Shares that are in demand will increase their price, whereas as shares that are being heavily sold will decrease their price. Companies that are acceptable to be traded in this market place are called "listed companies". Investors in share market want to maximize their returns by buying or selling their investments at a suitable time. Since share market data are highly time-variant and are normally in a

nonlinear pattern, analyzing the future price of a share is highly challenging. A lot of studies were performed for the analysis of share index values as well as the daily direction of change in the index. There are so many models to predict a price of a share market. To invest money in the share market we need to have an idea whether the prices of shares are going to increase or decrease on the next couple of days. Several computing techniques need to be joint in order to predict the nature of the share market. As the time elapsed, traditional capital market theory has been changed and various methods of commercial analysis have been improved.

II. RELATED WORK

The paper [1] in this paper we investigate to predict the share prices using auto regressive model. The auto regression model is used because of its simplicity and wide acceptability. We have also conducted a study on the effectiveness of auto regressive model. The Moore and Penrose technique is used to estimate the coefficients of the regression equation. We have also studied accuracy of the analysis by comparing the predicted values with the actual values over a period of time.

Advantage: Uses auto regressive model to predict the future price of a share.
Disadvantage: Analyzing the future price of a share is highly challenging.

The main [2] purpose In this paper, by applying linear regression for analyzing behavior of Share &Price 500 index, we prove that our proposed method has a similar and good performance in comparison to real volumes and the shareholders can invest confidentially based on our share pricing movements.
Advantage: Similar and good performance in comparison to real volumes.
Disadvantage: System work only on two variables.

The paper [3] in this paper we applied well known efficient multiple regression approach to predict the share market price from share market data based on three variables. In future the results of multiple regression approach could be improved using more number of variables.
Advantage: This approach to predict the share market price from share market data based on three variables.
Disadvantage: Future share price analysis is highly challenging.

In this [4] paper, we are using four types of deep learning architectures i.e Multilayer Perceptron (MLP), Recurrent Neural Networks (RNN), Long Short-Term Memory (LSTM) and Convolutional Neural Network (CNN) for analyzing the share price of a company based on the historical prices available. Here we are using day-wise closing price of two different share markets, National Share Exchange (NSE) of India and New York Share Exchange (NYSE). The network was trained with the share price of a single company from NSE and predicted for five different companies from both NSE and NYSE.
Advantage: If few more variables are considered as predictors the results will be even more accurate.
Disadvantage: There is increase the load on data mining at server side.

In this paper [5] we are going to present comparison of machine learning aided algorithms to evaluate the share prices in the future to analyze market behavior. Our method is able to correctly analyze supervised algorithms and compare which algorithm performs the best to predict the future share market prices in the market.
Advantage: The use of an ordinal data type for analysis based on ranking system provides a different dimension for analyzing outcomes. Pretty Flexible and easy to train.
Disadvantage: In these paper major disadvantages is data security. Require more no. of tress to predict accurately that makes model slow.

III. EXISTING SYSTEM

In modern commercial market, the most essential problem is to find essential approach to outline and visualizing the analysis in share-markets to be made by individuals in order to attain extreme income by investments. The share market is a transformative, non-straight dynamical and complex system. Share price analysis has always attracted people interested in investing in share market and share exchanges because of the direct financial benefits. It is also an important topic of research in finance. Analysis of share market returns is a very complex issue depends on so many factors such company financial status and national policy etc. These day's share prices are affected due to many reasons like company related newscast, party-political, social economic conditions and natural disasters. The share exchange is a virtual market where buyers and sellers trade in prevailing securities. It is a market hosted by an institute or any such government body where shares, shares, debentures, bonds, futures, options, etc. are traded. A share exchange is a meeting place for buyers and sellers.

IV. SYSTEM OVERVIEW

In this paper our target is supervised Machine learning regression algorithms were used to decide the share market analysis that can predict the share market data. Support Vector Machine algorithm which gives the less accuracy. The proposed algorithm (Linear Regression Algorithm) uses less number of features, while still being able to data.

Fig. 1 shows the proposed system architecture of analysis of share market and estimation scenario. The input data of share is uses for trained dataset with some features. The training dataset contains data preprocessing which includes two steps: Classification, regression and Machine learning technique.
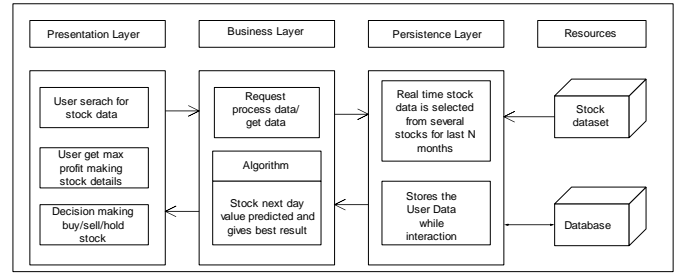

Fig. 1. Proposed System Architecture

Technical architecture is concerned about how large software applications can be or should be organized for better performance and ease of development. The commonly used option is a 3 or n tier architecture which is shown in above fig.1

Presentation Tier (or Client-tier)

It implements the GUI of an application. It is responsible for the presentation of data, receiving user events and controlling the user interface. Most ecommerce applications are web-based. The programming languages used are the combination of HTML, CSS and JavaScript. JSP or ASP is used for dynamic content.

- Decision to Customers/Users System gives decision in the following form

a) Sale- Our system recommends customer to sale a share according to that customer will make the profit
b) Buy- Our system recommends customer to buy a share so in a way that customer will make the profit

c) Hold- Our system recommends customer to hold a share so in way that customer avoid his/her loss

Application Tier

This layer implements the applications' business logic. It is usually powered by a Java Application Server (Web Logic or Web Sphere). There're several sub-layers within the application layer. Analysis Data:
- System performs analysis on share data using 4 algorithms:

a) Moving average algorithm
b) Forecasting algorithm
c) Neural nephron algorithm
d) Regression algorithm.

After applying above 4 algorithms find the most efficient algorithm for calculating predicted value and making decision we called it as filtered algorithm.

- Analysis using Filtered Algorithm:

Once get the filtered algorithm we find the predicted value and decision using this algorithm. Take last month of data analyze it using filtered algorithm according to that put the result to users.

Data Tier

This is the layer that manages the persistence of application information. It is usually powered by a relational database server (Oracle or MySQL).

- Fetch Share Data:

In This System Share portfolio data will fetch from using Yahoo API and perform the analysis on the share exchange data (opening price, closing price, high, low) for the analysis of next day decision.

V. CONCLUSION

Share exchange analysis help the organization and also the stake holder to keep track of the trend of the market. It also helps to decide whether to sell, buy or withheld the share so as to maximize the profit. In this paper, I have made a comparative study of various techniques that are used to predict the share market giving a brief description of each.

VI. REFERENCES

[1]. Dr. P. K. Sahoo, Mr. Krishna charlapally ,"Share Price Analysis Using Regression Analysis", International Journal of Scientific & Engineering Research, Volume 6, Issue 3, March-2015 ISSN 2229-5518.

[2]. Farhad Soleimanian Gharehchopogh, Tahmineh Haddadi Bonab and Seyyed Reza Khaze ,"A Linear Regression approach to analysis of share market trading volume: A case study", International Journal of Managing Value and Supply Chains (IJMVSC) Vol.4, No. 3, September 2013.

[3]. Sachin Kamley , Shailesh Jaloree & R. S. Thakur , "Multiple Regression: A Data Mining Approach fir analyzing the share market" trends based on open, close and high price of the month", International Journal of Computer Science Engineering and Information Technology Research (IJCSEITR) ISSN 2249-6831 Vol. 3, Issue 4, Oct 2013, 173-180 © TJPRC Pvt. Ltd.

[4]. Hiransha Ma, Gopalakrishnan E. Ab, Vijay Krishna Menonab, Soman K.P*," NSE Share Market Analysis Using Deep-Learning Models" International Conference on Computational Intelligence and Data Science (ICCIDS 2018).

[5]. Neha Bhardwaj1, MD Akil Ansari1" Analysis of Share Market using Machine Learning Algorithms" International Research Journal of Engineering and Technology (IRJET) Volume: 06 Issue: 05 | May 2019.