

Stock Prediction Using Deep Learning Approach

YOGITA SURYAVANSHI¹, MEGHA DHONDE², RASIKA JAMDAR³

^{1, 2, 3} G. H. Rasoni College of Engineering and Management Chas Ahmednagar

Abstract- I am also using data processing Algorithm and we decide which side has an impact The easiest ending to predict the future. Stock market forecast Trying to determine the long-term value of the company Stocks and other financial products change. In the recent trend of Stock Market Prediction Technologies machine learning has integrated itself in the picture for deployment and prediction of training sets and data models.

I. INTRODUCTION

Machine learning (ML) is the scientific study of algorithms and statistical models that computer systems use to perform a specific task. A stock market is public market for the company stock. If the company's profits go up, then we own some of the profit and if they go down, then we lose profits with them. Machine learning algorithms are used in a wide variety of applications, such as email computer vision. The study of mathematical optimization delivers methods, theory and application domains to the field of machine learning. Data mining is a field of study within machine learning, in its application across business problems, machine learning is also referred to as predictive analytics Recently, a lot of interesting work has been done in the area of applying machine learning Algorithm for analyzing price patterns and predicting stock prices and index changes. Most stock traders now a days depend on Intelligent trading system which help them in predicting prices based on various situation and conditions, thereby helping them in marking instantaneous investment decision Stock prices are considered to be very dynamic and susceptible to quick changes because of the underlying nature of the financial domain and in part because of the mix of known parameters and unknown factors An intelligent trader would predict the stock price and buy a stock before the price rises, a sell it before its value declines. Though it is very hard to replace the expertise that an experienced trader has gained, an accurate prediction algorithm can directly result into high profit

for investment firms, indicating a direct relationship between the accuracy of the prediction algorithm and the profit made from using the algorithm an intelligent trader would predict the stock price and buy a stock before the price rises, a sell it before its value declines. Though it is very hard to replace the expertise that an experienced trader has gained, an accurate prediction algorithm can directly result into high profit for investment firms, indicating a direct relationship between the accuracy of the prediction algorithm and the profit made from using the algorithm. Stock price prediction is a classic and important problem. ... The motivated idea is that, if we know all information about today's stock trading (of all specific traders), the price is predictable. Thus, if we can obtain just a partial information, we can expect to improve the current prediction lot. To predict the market, most researchers use either technical or fundamental analysis.

Literature Survey:

- Using Neural Networks to Forecast Stock Market Prices, Ramon Lawrence:

This paper is a survey on the application of neural networks in forecasting stock market prices. With their ability to discover patterns in nonlinear and chaotic systems, neural networks offer the ability to predict market directions more accurately than current techniques. Common market analysis techniques such as technical analysis, fundamental analysis, and regression are discussed and compared with neural network performance. Also, the Efficient Market Hypothesis (EMH) is presented and contrasted with chaos theory and neural networks. Finally, future directions for applying neural networks to the financial markets are discussed

- Stock Market Prediction Using Hybrid Approach, Vivek Rajput, Sarika Bobde:

The objective of this paper is to construct a model to predict stock value movement using the opinion mining and clustering method to predict National Stock Exchange (NSE). It used domain specific approach to predict the stocks from each domain and

taken some stock with maximum capitalization. Topics and related opinion of shareholders are automatically extracted from the writings in a message board by utilizing our proposed strategy alongside isolating clusters of comparable sort of stocks from others using clustering algorithms. Proposed methodology will give two output set i.e. one from sentiment analysis and another from clustering based prediction with respect to some specialized parameters of stock exchange. By examining both the results an efficient prediction is produced. In this paper stocks with maximum capitalization within all the important sectors are taken into consideration for empirical analysis.

Objectives:

1. To identify factors affecting share market
2. To predict approximate value of share price
3. To provide web application
4. Forecasting and predicting the trends of market is the most important application of stock market
5. Many of researches have been done so far in the area of analysing the stock market using data mining

II. METHODOLOGY

- LSTM Algorithm:

Long Short-Term Memory (LSTM) networks are a type of recurrent neural network capable of learning order dependence in sequence prediction problems. It can be hard to get your hands around what LSTMs are, and how terms like bidirectional and sequence-to-sequence relate to the field. LSTMs are widely used for sequence prediction problems and have been shown to be very effective. The reason LSTMs work so well is that they store important information in the past and forget about non-essential information. LSTM has 3 ports.

Input gate: input port that adds information to the cell state

Forget gate: Removes information that is no longer needed by the model.

Output gate: The LSTM output port selects the information to be displayed in the output.

- CNN Algorithm

A Convolutional Neural Network is a Deep Learning algorithm which can take in an input image, assign importance (learnable weights and biases) to various aspects/objects in the image and be able to differentiate one from the other. CNN offers better performance than traditional machine learning algorithms that exist in these areas. It mainly consists of multiple convolutional layers, a composite layer and a fully connected layer. CNN is a kind of direct transmission neural network, which has excellent performance in natural language processing and image processing, so that it can be effectively applied to time series prediction. Local awareness and weight-sharing on CNNs can significantly reduce the number of parameters, thus improving the efficiency of model training. CNN is made up of two main parts: the convolutional layer and the pooling layer.

- NLP algorithms:

NLP algorithms are typically based on machine learning algorithms.

Instead of hand-coding large sets of rules, NLP can rely on machine learning to automatically learn these rules by analysing a set of examples (i.e. a large corpus, like a book, down to a collection of sentences), and making a statistical inference.

- A Sentimental analysis using NLP:

We do the sentiment analysis of the selected stock and then suggest whether to buy, sell or hold. It is done using the inbuilt package of python nltk for natural language processing.

III. RESULT AND DISCUSSION

Here we used 2 Modules

1.Login Module 2. Registration Module In this Project any unknown user does not know any information of any company. Then Twitter Which is an updated and latest format using for to collect all the information related to our company can be updated easily and then this information upload it. Then Unknown user is directly goes to prediction part which is shown in graphical representation. We take TCS Company Example: If company get the profit then our graphical representation is shows increase our stock and if

company get the loss then our graphical representation directly shows decrease.

CONCLUSION

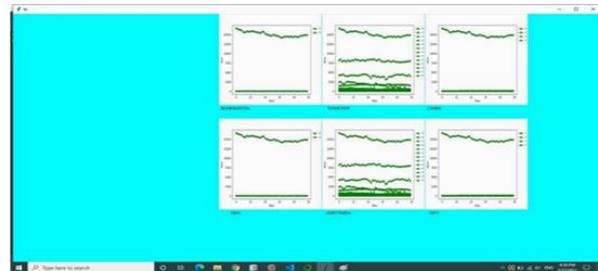
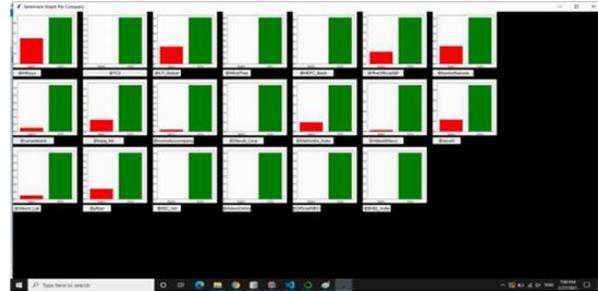
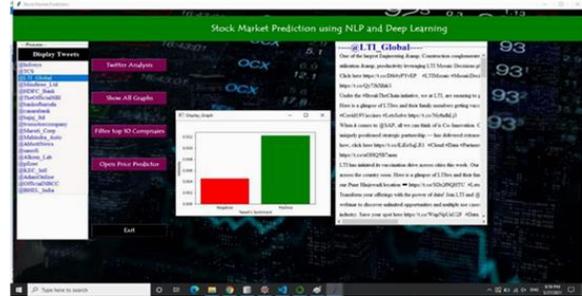
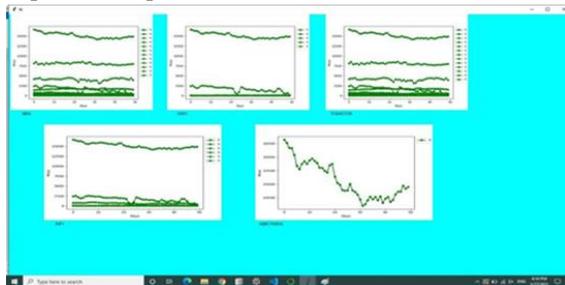
Determining the stock market forecasts is always been challenging work for business analytics.

Thus, Project applies the data mining technology of neural network to stock prices forecasts and receives a preferable result, which will provide the research of the stock market prediction development a new thought and we attempted to make use of huge textual data to predict the stock market indices.

REFERENCES

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- [2] Combining of Random Forest Estimates using LS boost for Stock Market Index Prediction Nonita Sharma Akanksha Juneja 2017 2nd International Conference for Convergence in Technology (I2CT).
- [3] Literature review on Artificial Neural Networks Techniques Application for Stock Market Prediction and as Decision Support Tools Muhammad Firdaus Swelandiah Endah Pratiwi.

Expected Output:



Here we can see the different picture or output as well as input of the final implementation and result as we see the here price and days are always change according marketing .and tweets are negative and positive the tweets are managed by the intensity of the graph they can detect the tweets and take sentiment analysis of that they can check all graph and check top most 10 companies and then they can predict the stock market shares will be increase or not.