

Prediction of Market Closing Price for India Financial Market

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Abstract— Closing prices of the financial stock market change daily at the end of each session. These changes happen because of many factors that affect the prices of the stocks. This study attempts to accurately predict closing prices by applying a data mining approach and investigate and identify the most influential factors of Indian Financial Stock Market prices. The main objective of this study is to help investors plan their future investment opportunities well. We will be working on human sentiments by using unsupervised algorithm namely the Hidden Markov Model.

Key words: India Financial Market, Market Closing Price

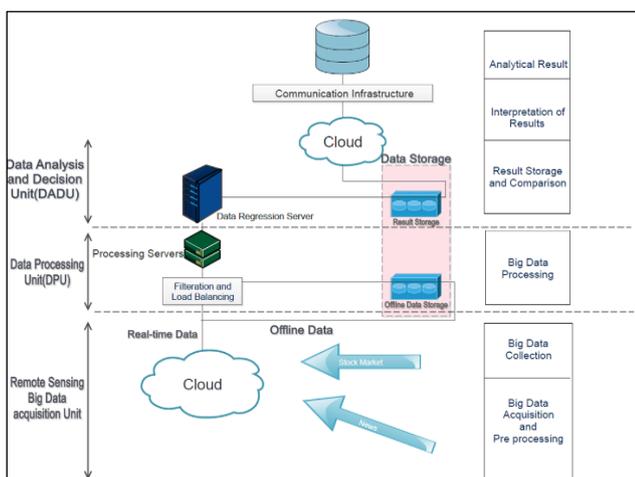
I. INTRODUCTION

This study involves analyzing the market closing process using two types of data mining analysis techniques, which are supervised classification algorithms and unsupervised regression algorithms. This study builds a model for predicting the closing market value for the SENSEX (BSE) based on the HMM. In addition, this study assists investors in predicting the closing pricing in the future. This proposal is still open for future work to improve the prediction accuracy; that might be achieved by continuous data sampling, monthly or daily, and testing the data against the model. Model accuracy might also be enhanced by using more classifiers in the classification algorithm.

II. LITERATURE REVIEW

Noura AIDarmaki and Noura AIMansouri in [1] used supervised and unsupervised learning algorithms to predict the closing price of the Dubai Financial Market. Poonam Somani, Shreyas Talele and Suraj Sawant in [2], used machine learning algorithm to predict sentiments of character strings using Hidden Markov Model. Pankaj Kumar and Dr. Anju Bala in [3], made use of Cloud Computing for stock data prediction using predictive data mining techniques. Yunus Yetis, Halid Kaplan and Mo Jamshidi in [4], made use of Artificial Intelligence for stock market prediction with the help of an Artificial Neural Network.

III. ARCHITECTURE DIAGRAM



IV. PROPOSED SYSTEM

We are taking input in two formats – i) Historical Data of companies listed in SENSEX. ii) Live RSS feeds from different news websites. This news data is then filtered and stored in MongoDB. Using MeaningCloud API, we perform sentiment analysis on this data. By doing this, we are able to classify the news as either ‘Positive’,

‘Negative’ or ‘Neutral’. This means the news has either a positive, negative or neutral effect on the stock market.

Combining this data with the historical data of the company, we get the prediction of the stock price of that particular company.

Algorithm I. Data Acquisition and Filtration Algorithm

Input: Live Data Feed process data set

Output: filtered data in key value pair and send this to processing Mechanism

Steps:

- 1) Filter related data i.e. processed data. All other unnecessary data will be discarded.
- 2) Divide the Data into Appropriate Key Value Pair.
- 3) Transmit unprocessed data directly to aggregation step without processing.
- 4) Assign and transmit each distinct data block of processed data to various processing steps in Data Processing Unit.

Description: This algorithm takes live RSS Feed Data and then filters and divides them into segments and performs approximation algorithm.

In step 1, related details filtered out.

In step 2, filtered data are the association of different key value pairs and each pair is different numbers of sample, which results in forming a data block. In Next steps, these blocks are forwarded to processed by Data Processing Unit.

Algorithm II. Processing and Calculation Algorithm

Input: Filtered Data

Output: Normalized News data into Numerical comparable form Along with Historical Values.

Steps:

- 1) For each event data, relevant Historical Data is extracted.
- 2) Normalize this for all the live feed.
- 3) Persist the data into data store and forward it.

V. CONCLUSION

The developed system can seems to work acceptable. Our Experiments will try to show that obtained forecasts could have about 70 percent accuracy this result can be seen as satisfying for such difficult task. Majorities of the wrong forecasts can obtained only because changes on the Stock Exchange are too slow, taking into account defined criteria, but the directions of changes are adequate. It is very significant feature of the system, because quite wrong forecast can cause big financial loss for potential users. In all experiments, only 14 percent forecasts are quite wrong, that means, they bring potential investors losses. The system has big possibilities to analyze and to present obtained results.

The program will be ready for use by potential investors, but the authors shares not invested in the Stock Exchange and do not take responsibility for profits and losses of potential users.

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