Abstract

Background/Objectives: Stock Trading is the action of buying or selling the products. In this complex habitat, generating the future trend is such a difficult process. Methods: Methods such as Sentiment survey, Technical survey and Trend based segmentation method are used in this system. The segmentation process, a hybrid model using Support Vector Regression and Naïve Bayes classification is used to extract the intensity levels of the gathered information. Findings: This is the application where the trading decisions can be automatically predicted to gain profit. Based on the reviews and ratings of a product from users, the system concludes whether to invest in that product or not. By using hybrid model, the predictive signals may be accurate. Decision for investors for investing in a better profit earning product is given by the system itself. The previous method uses the sentiments from the news articles and social networks, which is less reliable than getting the feedbacks from the users or the investors of that product. Applications: This framework may be used in real time applications such as trading activities, stock exchange in the stock market, etc.

Keywords: Classification, Sentiment Survey, Stock Trading, Trend Based, Technical Survey

1. Introduction

Over the past period of time, monetary data foretelling such as foretelling future stock costs, trading values and investment is such a general research topic. Researchers tried to develop new models that can modify certain monetary perception trend foretelling that helps the investors to achieve their objective as gaining profit. The monetary market is such a complex habitat and an important thing about the people's feedback. The investor can easily take risks to invest in a product to attain a profit. The first step of product investment forecast relies on effectual information extraction. In this, sentiment survey is used to evaluate the sentiments from the user. It is evaluated using the user review of the products. Additionally the Technical survey is used to define the trading rules. Sentiment survey, Technical survey and trend based segmentation methods apply to the reviews of the product to generate comprehensive features. The Sentiment survey is used to review the base information gathered about certain product. This survey is used to find out the words that are much more important for the user feedback and gather them as a group to make the information useful. Using these values trading signals is generated. A technical survey is an analysis of the product cost for the past and the current to depict a certain profit level. This is an evaluation process of making the investor’s decisions easily based on the statistics of the user knowledge and measures. The segmentation process is used to extract the intensity levels of the gathered information. A hybrid model using Support Vector Regression and Naïve Bayes classification is used to extract the intensity levels of the gathered information. The SVR has high precision and forbearance error rate of learning solutions to complex problems. Using this method, the trading signals, calculate for formulating values. Naive Bayes is used to predict the probability of information belonging to particular products. Based on the trading signals the buy or sell decisions are taken. This research is important to develop a Stock trading system that focuses on developing an efficient trading model. The Manufacturer information and user feedback are used to improve the accuracy of the prediction. Many authors have proposed their own algorithms and methods in order to provide

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the system to make trading decision automatically. It took a lot of effort for the system to support for a social site. Some of the authors and their methods they used by them along with the approaches are listed as. In used Bat Neural Network Multi Agent System (BNN-MAS) to predict product cost. They developed a four sheet multi agent structure to foretell 8 years of DAX product cost in time intervals. Capacity of BNNMAS is assessed by trying the basics, DAX product cost information and contrasting the consequences with the other techniques such as Genetic Algorithm Neural Network (GANN) and Generalized Regression Neural Network (GRNN). BNNMAS is accurate, reliable and is an acceptable tool for foretelling the product cost, especially in a long interval time. The major linguistic is Robustness. The solution for this Quantitative and qualitative data is to generate an important and a tough data set. In predicted the stock returns using the replicas, such as Auto regressive Moving Average, Exponential Smoothing and hybrid. The training data are generated by the contemporary regression replica. Recurrent Neural Network (RNN) produces a satisfactory prediction as compared to a linear model. Optimization is introduced to create optimal weights solved using Genetic Algorithm. The computation time slow. So that the Prediction models are used to avoid it. In focused on the assignment of succeeding worth of product ex-change index. Two representations namely CNX Nifty and S and P Bombay Product exchange. The Experiments are carried out on 10 years data. Here the predictions are made for 1-10, 15 and 30 days. The model consists of two phases. In the first phase, the support vector regression is used as the prediction model and in the second phase ANN, RF and SVR are used as the forecasting model. In Used the Lexicon based approach for the sentiment analysis along with the technical analysis of the Taiwan stock exchange. With that analyzed value the intensities are calculated and generated as trading signals. Support vector regression is used as a prediction model. From that the Investors decisions to buy or sell are predicted for the best profit. The news article for sentiments are used.

2. System Framework

A framework of the proposed stock trading system is shown in Figure 1. So, we have proposed that HMSTS. It consists of three main elements: Extraction, Forecasting model and Decision Prediction.

![Diagram of System Framework](image)

**Figure 1.** Framework of the proposed stock trading system.

### 2.1 Extraction

This extraction is the first part of the Stock trading System. There the information that is gathered from the User and the Manufacturer are extracted as Sentimental survey and Technical Survey. User Review and Manufacturer information: There are two resources that can be used to share information acquisition. User Review can provide signals about the Products usefulness. Example, if a company has created a product is concerned, a few days to go until its possible future role price has. Information such as stock prices and trading volumes of these two resources to be able to offer two types of codes represented in the number variation. In addition, the trade is historical price information can be used to identify the best trading signals. Therefore, the extraction techniques to be able to create a more accurate prediction model to build detailed features.

### 2.2 Forecasting Model

The Forecasting model is delivered as the Second part of this Stock trading system. In this forecasting model, the Intensities are calculated for the Sentiment and Technical survey. The intensity is calculated drawn as graphical by the two Models as Hybrid model namely

- Support Vector Regression
- Naive Bayes
2.2.1 **Support Vector Regression**
Support Vector Regression has high forbearance error rate and high precision for learning solutions to complex problems.

2.2.2 **Naive Bayes**
Naive Bayes is used to predict the probability of information belonging to particular products.

2.3. **Decision Prediction**
The Third part of this stock trading system is Decision Prediction. With this only the Investor is making decisions for their investment for a particular product. Through the above trading signal we are generating decision for trading for better profits.

3. **Results and Discussion**
The home page is the first page of the Stock trading System is shown in Figure 2. From this only Investor, Manufacturer and User can access their account.

3.1 **Manufacturer**
A manufacturer who is manufacturing the product, and upload their products in this system to get the user feedback. After the registration as a manufacturer, we can log in into the account for upload new stock as shown in Figure 3. In the Manufacturer account as shown in Figure 4 to Figure 6, they upload, view own stock, other manufactures product. They can also view the rating based and the historical records.

3.2 **User**
A user who is given the rating for the products. They can view stocks that are available. They can also give
feedback score for the products that are uploaded by the Manufacturers as shown in Figure 7.

3.3 Investor

An investor who is investing the amount for certain product. This system is to make the investor work easy for the decision of Investment. An investor can view the Graphs. The decision in Figure 8, is given in the Investor page for the investment to attain a profit.

4. Conclusion

The Hybrid model for Stock Trading System is for predicting the decisions trading easily and automatically by the system. With this the investor can make their investment in gaining the Better profit. In this the future work can extended as by the data for the product are included from any stock exchanges.

5. References