A Revised Theory of Stock Price Prediction

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Abstract:

Today, technology is very advanced and the application of artificial intelligence (AI) techniques for NIFTY_50 index stock price prediction leads to the voluminous growth of the wealth of the investors. The several predictions as well as the estimations are coming up for all sectors of the NIFTY_50 stocks and the stock price prediction is not possible without excessive data manipulating that is done by effective data mining. The systematic statistical manipulation of data is effective when the suitable business intelligence (BI) and the artificial intelligence (AI) techniques are applied. The reality is that the Indian stock market is running throw the most complex scenario and always needs excessive data mining. The several works regarding NIFTY_50 stock price prediction is done by the advent of data mining techniques. In this paper, I introduce a model for all the fifty stocks (NIFTY_50) price prediction using the data mining techniques and the time series prediction in view of Fuzzy logic.

Keywords: NIFTY _50, BI, AI, Fuzzy logic.

Introduction

India is first growing economy and the largest population in the world. The NIFTY_50 movement are greatly influencing the citizens irrespective of the participation of the people. The foundation knowledge or basic education of the equity market is essential of all the citizens for country's development. The participation of most of the people are added voluminous data of the stock market. The participation of foreign investors or traders makes NIFTY _50 more strong, more energetic. In view of first growing economy, the stock market is tightly tied up. In fast growing economies such as India the growth is tightly tied up with the NIFTY_50 and its movement are also influenced by the whole sale price index (WPI) and the consumer price index (CPI). In a time, the market is very high volatile for that the investors are affected by sudden unexpected profit or losses. Altimetry, the profit and the loses are incurred in NIFTY_50 is affecting the people who are not participated in that market. Therefore, it is cleazed that the India's economic growth is dependent on the NIFTY_50 and its upper price movement. The maximum of India's citizens is uneducated in finance and economics, then the investors are involved in the market with no proper research. The peoples are wrongly thought that the investment is an act of the astrology or the gambling or the luck and bad luck. The several data mining techniques have been broken the myth and generated the suitable predictive patterns with time series prediction in view of Fuzzy logic which are promising the growth of the investor's portfolios.

In the scientific way of NIFTY_50 stocks price prediction techniques are classified in to the mainly five significant types, which are

1. The Fundamental analysis approach
2. The Technical or the charting approach
3. The Variable model
4. The Machine learning algorithm-based methods
5. The Time series prediction

1. The Fundamental analysis approach

This approach is referred to the true price
prediction which is focused on the fundamentals of the NIFTY_50 index stocks (50 stocks) instead of the price movement. It gives the weightage of the true value prediction instead of current market price.

2. The Technical or the charting approach

The technical approach is basically categorized as the charting approach. It deals with the voluminous of the historical data of NIFTY_50 index stocks prices of the concerned NIFTY_50 stocks.

3. The Variable Model

This model is really worked on examining the selected parameters which are analysed to predict the future price of the NIFTY_50 stocks.

4. The Machine learning algorithms

This approach attempts to predict the movement of NIFTY_50 stocks prices based on the training given with the all the past value movements with the application of Fuzzy theory.

5. The Time Series analysis

This approach is considered the time as the important parameter to generate the series of the NIFTY_50 stock price movement with the help of Fuzzy logic.

The significance of data mining techniques

To predict NIFTY_50 stock price movement, several works has been done based on charting historical market price. Most of the investors / traders are failed to deliver promising the results which cannot be accommodated the actual market price. The data mining techniques can be addressed the such issues where the hidden patterns can be discovered by applying artificial intelligence (AI), business intelligence (BI) and machine learning (ML) with the help of Fuzzy theory. It is served with the preliminary stage for gathering the business information to estimate of the future needs. Most of the conventional methods are failed to deliver in the issues. The Data mining techniques are effectively addressed to the challenges in the traditional methods which are failed to deliver the promising results which are

A. The Stock price prediction
B. The Pattern generation with historical data
C. The Effective & utilization of business capital
D. The economic development
E. Investor friendly analysis

The Work Done

The prediction of NIFTY_50 stocks prices are very confusing task. Various Artificial intelligence (AI) and the time series techniques with the application of Fuzzy theory are applied to take decision for trading or investing in the NIFTY_50. The reality is that the identification of the lowest point to buy the stock are needed the hard work with the outstanding research. Haoming Huang is created a generic membership function which name is the Irregular shaped membership function (ISMF) which is also applied with the hierarchical co-evolutionary genetic algorithm that can be used to automatically derive with each input feature in it. The systems are overcome with the buy and the hold at the real world financial data. The Trading signals are generated by the price percentage oscillator (PPO) with the main technical indicator. Chang Liu and Hafiz Malik (2014) introduces a work which is related to the return and the volatility. They are intelligently sort out the low performing sectors which are applicable in the NIFTY_50. They are predicting the investment decisions (buy or sell) which have a strategy for maximizing the investment gains and the resultant of trading decisions leads to the larger profitability of the investors. Xiaoxiao Guo (2014) has focused on the supply chain management under the large cycle. His approach are combined the inventory with information searched on the website to conduct a demand prediction with the optimization of the inventory and back propagation is also used to train the predictive model. The traditional inventory policy is used to find out a normal distribution of the demand by the historical data and the inventory cost is added. The results are promised to the inventory policy lies on demand and the superior in terms of the overall cost of the inventory. Yunus YETISl has used the ANNs with the set of the input parameters in the stock market to predict the stock value which is also applicable to the NIFTY_50 . He has used the feed forward networks and regression technique is applied to confirm the network's performance. He is also generated the plots render the outputs for the training, the validation and the test cases. Anthony J. T. Lee, Ming-Chih Lin, Rung-Tai Kao has proposed that the Hierarchical agglomerative and recursive K-Means clustering (HRK) which predict the short-term stock movements with reference to the financial reports. This method is contained the three phases. At first, the financial reports of the company are converted to the feature vector and the Hierarchical agglomerative and recursive (HRK) method is applied to divide them into clusters. In the second step the K-Means clustering method partitions of each cluster into sub clusters and each sub cluster belongs to the same classes. In the third step each sub cluster of the centroid is chosen with respect to the representative feature vectors which are used for the future movement of the NIFTY_50 stock price prediction. Haoming Huang has applied the hierarchical co-evaluationary Fuzzy system which is applicable to NITTY_50 stocks named HiCEFS of the predictive model. It is employed with a prudent trading strategy as the price percentage oscillator (PPO). The constitution of the precise predictive model which are related to the Irregular shaped membership function (ISMF) and is employed to the hierarchical coevolutionary genetic algorithm (HCGA) are adopted to the automize ISMF for each input in HiCEFS. Dongsong Zhang and Lina Zhou are addressed to need for atomizing the approaches for the effective utilization of the financial data of corporates with planning for every individual and the systematic decision making. It is uncovered the hidden patterns with the future trend of the NIFTY_50 stocks prediction. The benefits of the profit margin are increased with the cheaper of cost and the sound of marketplace with the response. It is analysed the several data mining techniques are proposed for the financial data analysis. Lay-Ki Soon and Sang Ho Lee has compared the numeric and the symbolic data of the NIFTY_50 stock market with respect to similarity. For the normalized dataset of the empirical study is concluded to the numeric of the stock data is more

consistent when compared with the symbolic stock data which are explored the possibility of combining the numeric and the symbolic data with the stock market data on trend of modelling. To incorporate the temporal semantics of the dataset with the growth of casual relationships with the stocks and the time the results are interested. Depei Bao has utilized very high-level representation of the time series which is insensitive to the noise then the intuitive to the humans. The professional investors are gathered knowledge from the technical indicators which are generally depicted the aggregation of the market on the particular time period. To join the high-level representation and the probabilistic model the uncertainty and randomness are reduced to the further levels in that way the prediction of precision is improved. P.K. Sarkar (2023) has introduced a suitable scientific application that the Fuzzy logic and the back propagation algorithm with efficient training and with the appropriate artificial intelligence (AI) technique which is applied on the fundamental approaches should render promising the higher accuracy of the results. Kelvin Sim, Vivekanand Gopalkrishnan, Clifton Phua and Gao Cong have proposed a system based on the graham's investment rules. They propose the 3D subspace for clustering of the rule generation to choose potential of the undervalued stocks.

The method is very effective in dealing with the multi-dimensional financial data which is also adaptive to the new data. The results are not influenced by the human emotions and the human biases. The results are promised 65% more profits than the simply applying grahams' investment rules alone. S. Prasanna, D. Ezhilmaran has proposed an important method to estimate the true value which is also applicable to the NIFTY_50 stock price using the hybrid Mcniven approach. The predictions are introduced for the three categories which are Undervalued, Fair valued, and Overvalued stocks. The process is helped the investors to select the best stocks which are undervalued thus are increasing the profit for the investors and the traders. This method is yielded the better results than the 3D subspace clustering method in the selected cases.

Conclusion

The above improvement is explained the works done for NIFTY_50 stocks price prediction. The observation is very hard for a stock to use the fundamental analysis approach, the technical or the charting approach, the variable model, the machine learning algorithm-based methods and the time series prediction at the same time with the application of the Fuzzy logic and the stocks prices cannot determine with the help of only stock historical data. The NIFTY_50 stocks prices are also influenced by some other factors which are market sentiments, government policy, the news etc. it is needed the data from the different sources.

In this case, data mining will be very complex due to different sources and heterogeneous nature. Therefore, the combination of data from different sources and its heterogeneous nature for NIFTY_50 will be taken in one method and efficiently applied the Fuzzy system to increase more profits of the investors and the traders. The total scientific profitable system is introduced as the science of stock price prediction.

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