

A survey Paper on Decision Supporting System for Stock Market Price Prediction

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Abstract:

The usage of Neural networks has determined a variegated area of packages in the present world. This has caused the improvement of various fashions for economic markets and funding. This paper represents the idea the way to predict share market fee the use of artificial Neural community with a given enter parameters of share marketplace. The proportion marketplace is dynamic in nature approach to expect percentage fee could be very complex method by using trendy prediction or computation method. Its predominant motive is that there is no linear relationship between market parameters and target last price. Since there is no linear relationship between input patterns and corresponding output patterns, so use of neural network is a desire of hobby for share market prediction.

Keywords — Share, Sensex, Inventory market, Prediction, Past data

I INTRODUCTION

Share market is an important part of economy of a country. It plays an important role in growth of an industry that eventually affects economy of a country. Stock market is common platform for companies to raise funds for company by allowing customers to buy shares at an agreed price. Many methods have been applied for stock market prediction ranging from times series forecasting, statistical analysis, fundamental analysis and technical analysis. But due to non-linear nature of stock market prediction is very difficult task. Machine learning techniques like artificial neural networks (ANN) has ability to map nonlinear nature and hence can be used effectively for time series analysis such as Stock market prediction. But to have considerably good prediction ability it is important to train network properly with sufficiently large data so that on exposing it to real world considerable accuracy can be achieved. A neural network is a processing tool, both a set of rules and an actual hardware. The computing world has a lot to benefit from neural networks, additionally called artificial neural network or

neural network. Neural network in education phase learns about situations affecting proportion market fee in a given surroundings. And this learnt understanding stored in given network is used for predicting future marketplace rate. Artificial Neural community can recall records of any variety of years and it could expect the characteristic primarily based at the past records. This paper makes use feed ahead structure for prediction. The community turned into trained the use of one year information. It shows a great performance for market prediction. According with the present monetary circumstance we are able to quite efficiently point out the stock marketplace as one of the maximum dynamic structures to be in existence in ultra-modern international. The concept of forecasting stock market goes back has turn out to be fairly popular perhaps because of the reality that if the destiny market price of the stocks is effectively anticipated, the buyers can be better guided. The profitability of making an investment and buying and selling within the inventory market to a large extent depends on the predictability of the system which in flip prepares the investors of their come upon with their future insecurities and dangers related to the marketplace.

II BACKGROUND AND RELATED WORK

In the Literature survey we are analyzing four papers which contains different methods or models like moving average, Forecasting, Neural network and Regression algorithm. We are trying to cover all these methods or algorithms to obtain better accuracy than existing systems.

A. Artificial Neural Networks for Forecasting Stock Price (2008):

In line with this paper the objective is to be able to develop a long term pricing dating among stocks and earnings. Statistical arbitrage techniques have constantly been famous on the grounds that the advent of algorithmic buying and selling. Especially, trade traded fund (E.T.F.) arbitrage has attracted a whole lot attention. Trading houses have attempted to replicate ETF arbitrage to different shares. As a consequence, the goal is to be able to increase a long term pricing relationship between shares and make the most of their divergence from this courting. In this paper, we have developed a possible trading strategy in this idea. Artificial neural networks were deployed to model the pricing relationship between factors in a quarter. All prices have been taken into consideration on the same immediately, thereby permitting us to make buying and selling selections according with our predictions. Supervised studying algorithms were used to teach the community. This paper comes under the domain ANN and algorithms advised in paper are ANN and Supervised mastering algorithms. the key features of the paper are Statistical arbitrage techniques are considered and All fees have been taken into consideration on the same on the spot, thereby permitting us to make buying and selling choices according with our predictions. Eventually we will finish that An ANN can examine pricing courting to high degree of accuracy and deployed to generate income.

B. Stock Market Prediction Using Artificial Neural Networks (2012) :

In keeping with this paper the authors, the goal of this mission is implementation of neural networks

with back propagation set of rules for stock marketplace. Borrowing from biology, researchers are exploring neural networks - a brand new, non algorithmic technique to records processing. A neural network is a powerful information-modelling device this is able to seize and represent complicated enter/output relationships. The motivation for the development of neural network technology stemmed from the desire to expand an synthetic gadget that could perform "wise" tasks just like those performed with the aid of the human mind. This paper comes below the domain records Mining and set of rules cautioned in paper is ANN set of rules. the key features of this set of rules is A neural community is a powerful information-modeling tool this is able to capture and constitute complex input/output relationships and synthetic Neural Networks are being counted because the wave of the destiny in computing. Sooner or later we will conclude ANN have shown to be an effective, trendy cause approach for pattern reputation, category, clustering and especially time series prediction with a high-quality degree of accuracy.

C. Performance Analysis of Indian Stock Market Index using Neural Network Time Series Model (2013):

In keeping with this paper, A time collection is a set of observations made chronologically. the nature of time series records consists of: huge in information size, excessive dimensionality and essential to replace continuously. Forecasting based on time collection data for stock costs, foreign exchange rate, fee indices, and so forth., is one of the lively research areas in lots of field viz., finance, arithmetic, physics, gadget gaining knowledge of, and so on. Initially, the hassle of economic time sequences evaluation and prediction are solved through many statistical models. at some stage in the beyond few many years, a huge wide variety of neural community models were proposed to solve the hassle of financial records and to obtain accurate prediction result. The statistical version incorporated with ANN (Hybrid version) has given better end result than the use of single model. This

work discusses a few fundamental thoughts of time series statistics, want of ANN, importance of inventory indices, survey of the previous works and it investigates neural community models for time series in forecasting. This paper comes beneath the domain ANN and set of rules suggested in paper is blunders again propagation learning set of rules. the important thing functions of this set of rules is that this version can are expecting time series perfectly, if the supply statistics with less noise time period, and the prediction worsen while the noise variation is multiplied. Subsequently we are able to finish stock marketplace index is studied by neural community model and measured aggregation where found.

D.Forecasting of Indian stock market using time-series ARIMA Model (2014) :

In line with this paper software of ARIMA version based totally on which we expect the destiny stock indices which have a strong affect at the overall performance of the Indian economic system. The Indian inventory market is the centre of hobby for plenty economists, investors and researchers and therefore it's miles pretty important for them to have a clear understanding of the prevailing status of the marketplace. To establish the version writer implemented the validation technique with the determined records of sensex of 2013.This paper comes beneath the domain ANN .the important thing features of this set of rules is The evaluation includes monthly records at the final inventory indices of Sensex for six consecutive years and the dilemma is In case of sudden political turbulence or any kind of drastic trade within the authorities rules the model will bring about higher fluctuation in Sensex. In that context, predicting Sensex the usage of this model may not be capable of seize the effect of financial variables. Ultimately we will conclude stock market index is studied with the aid of neural network version and measured aggregation wherein observed.

III SYSTEM OVERVIEW

Inventory market prediction is an act to decide future stock fee (proportion fee). This prediction takes region by means of taking the past share values in to consideration. For this the present machine uses algorithms together with [5]ANN (artificial Neural network), [3] ARIMA model, Time collection prediction and so forth. Efficiency of these algorithms is much less as evaluate to the proposed machine algorithm. There is no this kind of device which makes use of four algorithms in one gadget. Therefore that leads the present systems to be much less green. We use artificial neural network methods along with Forecasting, Linear regression, and Moving averages. In forecasting method the system is taking the three days and the current year stock portfolio closing price from the predicted date and performs calculations on it for predicting the stock portfolio price. Moving averages method, system is take the ten days stock portfolio closing price form the predicting date and calculate the stock price.

Moving average algorithm

In statistics, a moving average (rolling average or running average) is a calculation to analyze data points by creating a series of averages of different subsets of the full data set. It is also called a moving mean (MM) or rolling mean and is a type of finite impulse response filter. Variations include: simple, and cumulative, or weighted forms.

Regression algorithm

A regression is a statistical analysis assessing the association between two variables. It is used to find the relationship between two variables.

Forecasting algorithm

Forecasting is the process of making predictions of the future based on past and present data and analysis of trends. A commonplace example might be estimation of some variable of interest at some specified future date. Prediction is a similar, but more general term. Both might refer to formal statistical methods employing time series, cross-

sectional or longitudinal data, or alternatively to less formal judgmental methods. Usage can differ between areas of application: for example, in hydrology, the terms "forecast" and "forecasting"[11] are sometimes reserved for estimates of values at certain specific future times, while the term "prediction" is used for more general estimates, such as the number of times floods will occur over a long period.

Neural neuron algorithm

Neural network consist of millions of artificial neurons called units. Some of them are input units are designed to receive various forms of information from the outside world. Other units are sitting on the opposite side of the network called as output units. In between input and output units one or more layers of hidden units which does processing. These hidden units trained for specific manner and using these units expected output is calculated.

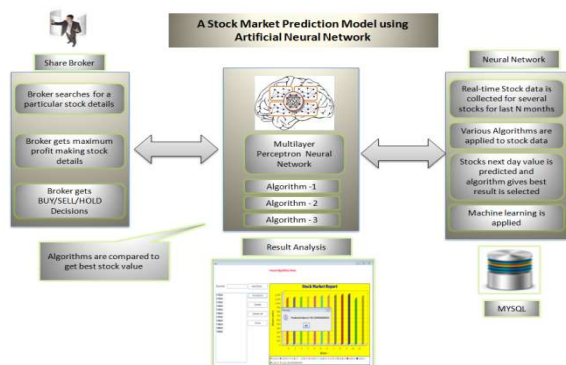


Fig 1:-Stock Market Prediction System Working

Intended audience and reading suggestion are stock agent or broker and his customers who actually buy shares.

V. PROS and CONS

Pros

- a. Dynamic in nature.
- b. High Accuracy.

c. Noise Tolerance.

d. Ease of maintenance.

e.Share broker can increase his/her and customer's profit by predicting stock value.

Cons

a. Problem in updating of data.

b. Previous systems cannot predict the share market values efficiently.

VI. CONCLUSION

This paper shows that the stock value prediction could be build using relatively easy and efficient combination of algorithms. This main contribution of this research is providing prediction system with seamless operation of the system by offering new experience for users. However, detailed configurations of the system could be performed remotely via web. User could use computer, laptop, table or even smartphone as long as it has web browser. In addition, it may be more autonomous, more practice, and progress in the areas of technology.

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