

Automation and Prediction in Share Market

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Abstract—Stock market is very significant in order to determine the financial growth of nation and national assets. It not only provide a better stand for financial growth but also contribute to overall life of market so it has to be perfectly controlled. stock market is predicted by expert human being but in this review paper the goal is to substitute the optimize result by predicting stock market price with artificial neural network (ANN's). Artificial neural network can remember or access any data of number of years and on the basis of this it can predict the features (performance) based on past data. This paper makes use generalized feed forward networks. The network was trained using input data of stock market price between last financial year.

Keywords- *Stock Market, Artifial Neural Network, Feed Forward Network.*

I. INTRODUCTION

Prediction of stock market price is one of the most important issues in finance. Many researchers have been given their idea how to forecast the market price in order to make gain using various techniques, such as technical analysis, statistical analysis, with different methods [1]

Stock market is the place where investors can legally gamble on the values of stocks to gain some kind of benefit or sometimes can lose to the plummeting wave of the highly volatile market. It gives investors the chance to make more money if they know how to play smart in this game of stock market prediction. It has always been a popular field of study in financial data-mining. The objective of prediction research has been largely beyond the capability of traditional AI research which has mainly focused on developing intelligent systems that are supposed to emulate human intelligence. Stock market is highly volatile and is unarguably very difficult to predict accurately based on certain parameters
History of Neural network:

In 1943, W.S.Mcculloch and W. Pitts Established Neural Network and its mathematical model, which was called MP model then they used MP model to put forward the neuron's Formalization mathematical description and network construction method and proved that each single neuron can perform logic function, thereby started a new time of Neural Network research. During more than 60 years development history, the research of Neural Network can be roughly divided into the three stages. Neural Network has been widely used in stock predictions, pattern recognition, economic

management, control and decision making, health and medical community, agriculture and many other fields.

Mizuno and friends had applied the Tokyo stock exchange to forecast buying and selling signals with an overall forecasting rate of 63% by using ANN [2]. Sexton and friends started of learning at random points that indicate in the training process+ [3]Phua and friends had applied ANNs with the genetic algorithm to the stock market value of Singapore and predicted the market value with an accuracy of 81 % [4]. In this paper, we review the ANNs for the important problem of prediction of the stock market and create the ANN to predict the stock market.

II. ARTIFICIAL NEURAL NETWORK

Artificial Neural Networks (ANNs) are most often chosen for its ability to generalize results from unseen data, especially for dynamic systems on real time basis. ANNs are parallel computational models comprised of densely interconnected adaptive processing units. ANNs can identify and learn correlated patterns between input data sets and corresponding actual target values, These networks are fine grained parallel implementations of dynamic systems .Artificial neural networks are an informatiin processing system that was first inspired by generalizations of mathematical of human neuron.

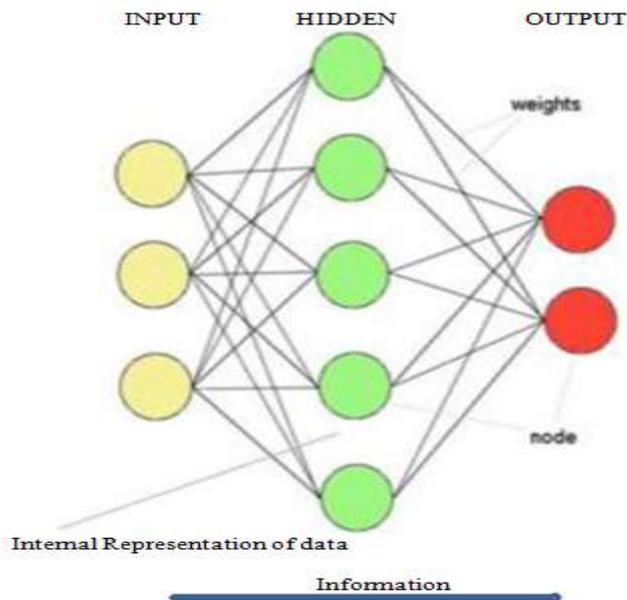


Fig.1 Feed Forward Network

Above figure have three parts of neurons, where one input part, one hidden part and one output part is present. Every neuron employs activation function that fires when total input is more than a given threshold that can lie in one of the category.

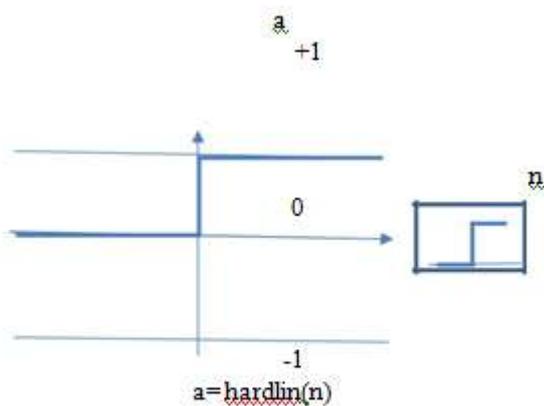


Fig. A

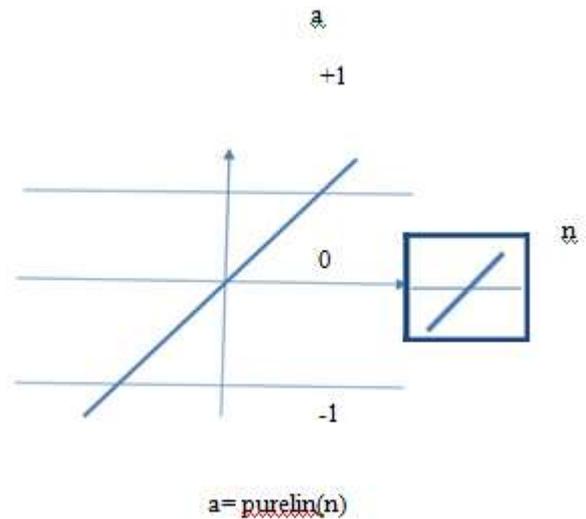
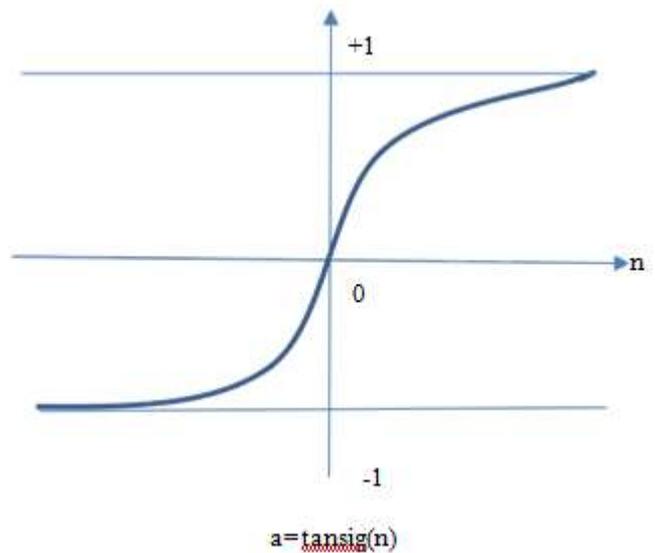
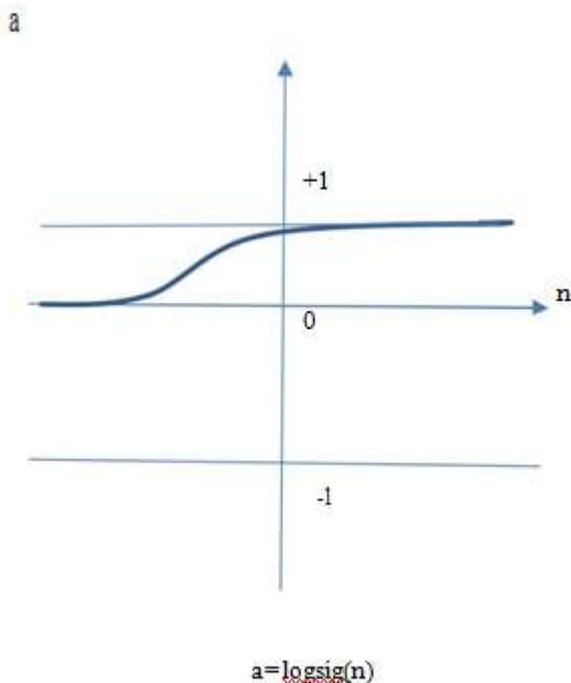


Fig. B

So, there is no linear relationship between input and output in stock market prediction so here learning functions hardlim and purelin are rarely used.





III. METHODOGY

The work was classified into three parts

1. Training process
2. Experimental Result
3. Comparison and conclusion.

A. Training Process

It is the process where network is in learning phase during which network stores knowledge. This knowledge is used by the system to predict future output based on input data. Here weights and biases related to each neuron are changed iteratively to converge to suitable value. It can be performed by two ways – Incremental mode: Here after applying every training sample +1 weights and biases are updated. • Batch mode: Here weights and biases are updated after n applying a set of training samples. It is more time efficient than incremental mode. We have used this mode for training. There are many learning algorithm to perform training. Learning is of two types-

1. Unsupervised learning.
2. Supervised learning.

- Unsupervised learning-

Here target class or values are not known, network makes cluster on the basis of similarity of training items. Here concept of clustering is used to trace target class.

- Supervised learning.

Here target class or values are known. On the basis of input parameters using network, output is determined and comparing it by target, error is calculated. Then network

property is changed to minimize error by updating weights and

IV. CONCLUSION:

The experiment conducted in this paper uses simple and efficient approach to stock prediction using Back-Propagation with Feed Forward Network. The Accuracy of the network recorded was 99% in case of trainlim. The Accuracy of the network recorded was 98% in case of traing dx. Forecasting stock market changes is an important issue for many researchers and investors. Moreover, it is one of the challenging tasks of nowadays time series analysis.

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