Neural Networks Application in Predicting Stock Price of Pharma Companies : A Case Study of NATCO Pharma

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Abstract

Neural networks is a computing paradigm that is modded after the cortical structures of the brain it consists of interconnected processing elements called neurons that work togather to produce an output function. The interaction of the individual neurons in the network define the output and its development. This paper is a survey on the applications of neural networks application in predicting stock price. In this article various domains of applications to neural networks are discussed. The stock market is a complex, non stationary, chaotic and non linear dynamical system. Prediction is the process of estimation in unknown future situations. Predicting stock performance is a very large and profitable area of study. The present study is supported and illustrated by practical application of results. The objective of this project is to understand the performance of pharmaceutical industry in India and also to understand the performance of stocks of particular companies in pharma sector. Suggesting the investor the right time to buy and sell the stocks of these companies.

I. Introduction

NEURAL NETWORKS ARE mathematical models originally inspired by biological processes in the human brain. They are constructed from a number of simple processing elements interconnected by weighted pathways to form networks. Each element computes its output as a nonlinear function of the weighted input when combined in to networks. These processing elements can implement arbitrarily complex, non linear networks which can be used to solve classification, prediction, and optimization problems.

1.1 *Neural Networks*
1.1.1 *Definition of Neural Networks*

A Neural Network is massively parallel distributed processor that has a natural propensity for storing experiential knowledge and making itavailable for use. It resembles the brain in two respects:

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the stock markets of pharma companies. The quality of prediction concept therefore holds relevance in the stock markets of pharma companies.

IV. Conclusions

The hypothesis that there is a considerable improvement in the rate of return by minimizing the risk and maximizing the profit using Artificial Neural Networks in predicting the stock price of pharma companies is accepted.

4.1 *Findings and Suggestions*

i.   In case of Predicting the closing price, the relative error is less than 0.01 for all the three categories and hence closing price of the pharma companies can be forecasted using the neural networks comfortably.

ii. Each of the concepts discussed about neural networks in this paper are of research based and it can be further elaborated in separate studies, thus the discussions in this paper are preliminary and do address only the basic structures and further work that can be carried out.

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