

Share Market Prediction Using Deep Learning Approach

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Abstract- This paper develops algorithm for predicting market direction more accurately. This paper is useful for various business or market. This model depend on past data or historical data and current data. Firstly the model analyse past data and current data and then it predict the future data i.e. prices of stock. This paper represent various technology to represent the price of stock. In this paper deep learning process is used. Deep learning is used for analysis of past data and then it predict future data. Deep learning is functioning of the same as human brain i.e Neural network.

Keywords- Data Mining ,ShareMarket, Predictive Modelling, Stock Market Strategy,R language,Deep learning.

I. INTRODUCTION

Stock price is the price of one of single stock sold in company. In the company there are number of stock co-related with each other. Original owners of the company initially sell the stocks to get additional investment to help the company grow. This initial offering of stocks to the public is called Initial Public Offering (IPO)[1]. Individuals, researchers, investors, financial professionals, are continually looking for a superior system which will yield them high returns. One of the best known concepts in finance is that markets are efficient. An efficient market adjusts prices. It map the price of number of stock.

Machine learning is the science of getting computers to act without being explicitly programmed.[2]. It is the practice of parsing data, learning from it and then making decisions based on what the algorithm has learned from the data. Deep learning is the number of layer in neural n In this project, we will be using multiple artificial neural networks like Convolutional Neural Network (CNN), Recurrent Neural Network (RNN), Deep Neural Network (DNN/NN) and Long Short Term Memory (LSTM) and will analyze their performance on several applications. These algorithms will be used in the project for data science problem like classification, image classification, object detection, and natural language processing.

It is used for analyzing the past data briefly and then it predict present and past data.

The most serious problem of these traditional analysis models is that assume the share price change is linear[3]. The efficient market hypothesis was associated with the idea of a "random walk". Since the idea of the random walk research have attempted to find ways to improve the predictability of the market. In Beyond the Random Walk, Singal [4]. the Random Walk hypothesis including the frequency of the mispricing, the financial instruments that can be used, and the number of transactions per year. Kim Suk-Joong and McKenzie[5]. considered the relationship between stock market autocorrelation, the presence of international investors and the stock market volatility. First, this research examines and analyses the use of market-wide lagged correlation analysis as a forecasting tool. Specifically the ability of one stock to predict the future usually short term future trends of a closely correlated another stock.

II. METHODOLOGY

A. Data collection

The daily Australian Stock Exchange, stock market data were downloaded from <http://www.float.com.au/scgibin/prod/dl.cgi> for the period covered by the research. The data for each day comprises of Stock name, Date, Open price, Close price, Daily highest price, Daily lowest price and the volume of stock traded on that day. store historical Stock Market data, perform the necessary data transformation and analyse the data.

B. Selection of Data

For this analysis daily stock market data were used for all companies which has daily data between 01/07/2005 and 29/07/2008. If a company had started after 01/07/2008 that company was excluded from the analysis for lack of historical data. Since the investment strategy being researched is a short term strategy, if the company was not trading on the 29/07/2008 (the date the analysis was carried out) that company was also excluded.

C. Data pre-processing

The data that are redundant is observed. Then those data filtered and removed noise from it so that it become structured and consistent.

If ambiguity present in data then it is removed and then replaced by linear interpolation technique.

D. Data Transformation

This research being a market-wide analysis and emphasis is on the direction of the movement of stock prices it was necessary to perform the correlation analysis on an index of the daily closing price rather than the raw daily price of the stock. The SSA tool was programmed to perform the analysis after transforming the data of each company to an index.

III. ANALYSIS

A. Correlation Analysis.

Correlation analysis measures the inter-relationship between the stock prices of two companies. SSA can use the stock price of company A as the dependent variable and the stock prices of all other listed companies as the independent variables to calculate correlation coefficients.

The correlation coefficients are calculated based on an index of price movements rather than the actual price of the stock. This allows comparison of high priced and low priced stocks possible.

IV. LITERATURE SURVEY

“stock price prediction by using deep learning” in this paper deep learning is used for analysis of past data deeply and then it predict the present and future data. Stock price is the price of one of single stock sold in company[1].

“Interacting segmentation and tracking of overlapping object from an image sequences. This paper told us Machine learning is the science of getting computers to act without being explicitly programmed[2].

“Prophency of share market price by using black scholes”. It told us The most serious problem of these traditional analysis models is that assume the share price change is linear[3].

V. RELATED WORKS

In this section, other works which are related to this paper are introduced. The distribution is done by researchers who come from the field of traditional economics and artificial intelligence. The prediction of share price trend is the goal of investors and economists. In order to achieve this goal, people

create many analytical methods and prediction models. Traditional analytical methods are multitudinous.

VI. CONCLUSION

This paper developed an algorithm for predicting the market direction more accurately when two stocks are strongly correlated to each other. This will identify the stocks that are closely related, display the daily price movements and its direction side by side and forecast the direction of the price movement for the dependent stock.

Determining the stock market forecasts is always been challenging task for business analysts. The purpose of this study is to compare the performance of the three prediction algorithms Multiple Linear Regression, Support Vector Machine, Artificial Neural Network in the stock market.

A prediction model has been built that uses social media, big data analytical capabilities analytics and machine learning to periodically predict the trend about stock markets. Model shows that sentiment analysis of the social data complements proven to the technical analysis methods such as regression analysis.

It's shows that the future performance and volatility of the markets of the system is affected by the political and economic news and influence of the social media.

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