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Karachi Stock Exchange Price Prediction using Machine Learning Regression Techniques

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Abstract

Accurate stock market returns are quite difficult for the company because of the unpredictable and non-linear nature of the financial stock markets. With the development of artificial intelligence and increased computer power, programmed prediction approaches have demonstrated that they are increasingly effective in predicting stock values. In this study, the Artificial Neural Network, LSTM, and LR techniques were used to predict the closing price for the following day for five companies belonging to different business sectors. In today's economy, the stock market or equity market has a profound influence. The prediction of stock prices is quite complex, chaotic, and it is a big challenge to have a dynamic environment. Behavioural finance means that investors' decision-making processes are affected by emotions and attitudes in response to particular news. In order to help investors' judgements, we have supplied a technology for the analysis of the stock exchange. The method combines historical price prediction. For predicting, LSTM (Long Short-Term Memory), ANN and LR are employed. It includes the latest information on trade and analytical indicators. Financial data: Open, high, low and close stock prices are used to build new variables needed for model input. The models are validated with standard strategic indicators: RMSE and MAPE. The low values of these two variables indicate that the models are cost-effective.

Keywords: LSTM, LR, Machine Learning.

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1. Introduction

A stock market forecast relates to determining a stock of a firm or future values for other financial entities which tend to be traded through exchanges [1]. Effective predictions of stock market rates are essential because they can provide substantial profit [2][1]. The concept of efficient markets shows that already accessible information reflects inventory prices and does not reliant on new information and is therefore unexpected [2]. In this study, we proposed a stock market prediction model using the Neural Network [3]–[6]. The technique uses seven different features as training input parameters and provides the inventory as its "closing price" output. Neural networks are widely used for prediction, as they can learn from known instances and detect nonlinear and hidden dependency, even when noise is high in training.
The currency is a part tool utilised as a money exchange device in the national budgetary exchange. It has a real impact on and promotes global financial perspectives. Of general trade, the consideration in fiscal principles can be unique, since a basic rule of monetary structures are needed that can be used throughout [4]. It is called Forex outside exchange or generally. Forex was intended as a market for exchanges [3], [7], [8].

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