Modern University for Business & Science

A Master Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Computer Science

Effectiveness of deep Learning in anticipating future trends of stock markets

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Abstract

Forecasting stock prices is one of the most difficult instruments for market analysis. Forecasting is contingent upon a number of variables that contribute to variance in delivery and demand. Predicting the value of a ratio is a significant complication in machine learning. With the aid of time series data and neural networks, we can deduce study trends from historical records. Forecasting the prices of financial market indices is crucial for investment decision-making since it provides investors and speculators with the tools necessary to maximize profits or avoid expected losses. The goal of this project is to use nonlinear forecasting models to forecast the Google financial market index.

This statistic is derived from yahoo finance a daily database spanning the period January 3rd, 2005 to December 30th, 2021.The study found a conclusion that the artificial neural networks model (LSTM), It has a great ability to predict the stock market by relying on the mean squared error (MSE).

Keywords: Recurrent Neural Network, Long Short-Term Memory, Stock Market, Prediction.