



# AIUB DSpace Publication Details

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## Abstract

The accurate prediction of stock prices in the financial domain has always been a challenging task. While the Efficient Market Hypothesis declared that it is impossible to predict stock prices accurately, research has shown that stock price changes may be predicted with some degree of certainty with predictive models if appropriate and suitable variables are chosen. This work presents a robust and accurate model using statistical and Long Short-Term Memory (LSTM) techniques. Daily stock price data of a particular company was collected from the Yahoo Finance database which served as the primary source for the analysis. The Long Short-Term Memory (LSTM) technique was mainly used to forecast the stock market closing price on a particular day. The accuracy of this model was evaluated through multiple matrices which included Mean Squared Error (MSE), Root Mean Squared Error (RMSE), Mean Absolute Error (MAE), R-squared, and Directional Accuracy. This provided a clear and comprehensive assessment of the accuracy and performance. This study not only predicted the stock price using the proposed LSMA model but also analysed its accuracy by comparing it with popular conventional methods such as Simple Moving Average (SMA) and Exponential Moving Average (EMA) providing insights into the effectiveness of the LSMA model.

