

A Systematic Review and Comparative Study of Stock Market Prediction and Algorithmic Trading via Machine Learning

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Abstract. Predictions about Stock prices are more common than ever. Due to its being so volatile, the stock market is impossible to predict. To forecast what will happen to the stock market in the future, there are no guidelines to follow. Since the market trend is always shifting based on a variety of factors, making accurate predictions is extremely difficult. The aim of this utilizing machine learning techniques, to forecast stocks and maximize profit. The influence of numerous factors on stock prices makes stock prediction a challenging and extremely complex task. To overcome these issues, machine learning techniques linear regression, SVR (Support Vector Regression), K Nearest Neighbour, Random Forest, Artificial Neural Network, Recurrent Neural Networks and Long Short-Term Memory (LSTM) have been used in this work to anticipate stock prices. In this research previous studies regarding stock market predictions have been analysed, to find the best-suited machine learning algorithm to predict stock prices. As a result of this study, it was found that the best-suited algorithm for predictions and automated trading, is LSTM due to its accuracy, less time-consuming nature, and ability to handle large data sets.

Keywords: *Algorithmic Trading, Stock Predictions, Long Short-Term Memory (LSTM)*