

## **Prediction of Share Prices in Sri Lanka, using Data Mining Techniques and Machine Learning, With Special Reference to Material Sector Companies Listed on Colombo Stock Exchange**

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Stock market plays a prominent role in every economy and it is understood as a very important section of the monetary segment of an economy. It is also recognized as playing an energetic part in the deployment of capital in numerous of the developing economies. Stock market is the greatest context for an investor to invest in the shares of listed companies, and have attractive revenue of investment which will offer a hedge against possible loss from inflation. In the stock market there is no any clear-cut mechanism to predict the share prices in advance. The main objective of this research study is to identify behaviour of share prices in Sri Lanka and developing a model to identify the stock price using the share price patterns within the target period for Colombo Stock Exchange. Most of the researchers are focused on the statistical process. Statistical approach accuracy is pretty much inefficient when comparing with the advanced machine learning mechanisms. So, in order to minimize this gap data mining base approach were implemented. In the Colombo Stock Exchange, material sector companies are used to this research. By analyzing the 39 number of variables, appropriate variables are selected to research purpose. However, using the machine learning based regression algorithm, the prediction results are generated with high accuracy. OLS Var model used to generate the prediction results. As the final conclusion and the model summary OLS model was selected to forecast the share price in Colombo stock market. RMSE value for that model was 46.50 since R squared value was 0.95. An R-squared of 100% means that all actions are totally clarified by movements in the index. Here it is almost close to 95%. A great R-squared, between 85% and 100%, indicates the share price moves comparatively in line with the index. Stock market prediction is the most difficult activity due to non-linear variations of the factors affecting the stock market. Here the main problem is the stock price does not only depend on the particular company's past stock value but also the external factors such as economic changes, political changes etc. Stock market predicting covers discovery of market trends, preparation asset strategies, classifying the finest period to acquire the stocks and which stocks to buy

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