ABSTRACT

Muhammad Rama. 10120776

IMPLEMENTATION OF RANDOM FOREST REGRESSION MODEL FOR STOCK PRICE PREDICTION OF PT ADARO ENERGY INDONESIA TBK BASED ON HISTORICAL DATA

Thesis. Department of Information Systems, *Faculty of Computer Science and Information Technology, Gunadarma University*, 2024.

Keywords: Adaro, *Data Mining, Machine Learning, Prediction, Random Forest Regression, Stocks, Visualization.*

(xiii + 52 + *Attachments*)

Stocks are a form of financial instrument that shows the ownership of a person or a certain body towards a Company. Stocks are one of the most popular investment instruments by many investors because of the high profit potential. However, stock investment also has a very high risk due to stock price fluctuations. Stock analyze generally uses technical analysis and fundamental analysis. Along with the development of technology, various machine learning models are now applied to analyze stock prices. In this study, the Random Forest Regression model was applied. The purpose is to help and provide convenience for investors in predicting stock prices, especially ADRO stocks. The dataset was taken using the secondary data method. The model that has been created and predicted will be evaluated using three metrics, namely R-Squared, Root Mean Squared Error, and Mean Absolute Error. The results of the model evaluation with R-Squared obtained a value of 99.89%, Root Mean Squared Error obtained with a value of 1.44%, and Mean Squared Error obtained with a value of 1.01%. The results of the prediction visualization show that the predicted stock price is very close to the actual stock price. The feature that greatly influences the model in predicting stock prices is the high feature. From the evaluation results, the Random Forest Regression model in predicting ADRO stock prices has good and accurate performance with a low error rate, so it can help investors in analyzing stock prices, especially ADRO stocks.

Bibliography (2019-2024)