

ABSTRACT

The use of electricity has become a basic need and has even become an important factor in life, especially in the building and the building sector. Such as in the building sector, the use of electrical energy consumption is certainly quite a lot and the supply of electrical energy is needed almost all the time, so that problems arise, such as wasteful use of excess energy, therefore this is an important challenge for consumers who use electricity.

The purpose of this study is to determine electricity price forecasts that may result in consumers preparing funds that vary in these forecasts. In this study, prediction of the use of electrical energy using the application of deep learning with one of the algorithms used in this study is the Legendre Memory Unit (LMU). This algorithm was chosen because it has good performance to process and predict quite a lot of data and a system will be built that can monitor and predict the use of electrical energy directly through a website.

The model that has been made has been tested by comparing the ratio of division between training data and test data, setting parameters in the LMU algorithm including the number of LMU layers, normal hidden layers, number of neurons, optimization of learning speed (learning rate), and the number of epochs or iterations. To evaluate the model that was built, using Mean Absolute Error (MAE), Mean Squared Error (MSE), Root Mean Square Error (RMSE), R-Square (R^2), Mean Absolute Percentage Error (MAPE), in this study, and getting a MAE of 0.537501, MSE of 0.791079, RMSE of 0.889426, R^2 score of 0.728854 and a percentage of MAPE errors of 4.42% in the data at the Barung Building Telkom University.

Keywords: LMU, Electrical Energy Consumption, Prediction