

ABSTRACT

Electrical energy is very important for the survival of mankind. Almost all activities now require electricity as a source of energy. In order to save energy, many ways have been used to regulate and limit electricity consumption. Including technological developments, it has begun to be used to analyze electricity usage. One of these efforts is to create a prediction system for electricity usage. On this occasion the author will create a system that can predict the use of electricity for the next use. The application of the system uses Machine Learning which can be used to forecast or predict electricity consumption. The algorithms that used for is Support Vector Machine.

This study aims to be able to make an electrical load prediction system using the Support Vector Machine algorithm to be able to predict future electrical loads. This research also find out wich parameter can reduce the error rate of the prediction using Particle Swarm Optimization. Then everything packaged into a website using the flask framework. The results of testing the parameters of the Support Vector Machine algorithm on the electricity usage prediction system, the lowest error values obtained are MAE, MSE, RMSE on the parameters of the PSO optimization results, the SVR parameter value is $C = 1$; $\text{Gamma} = 8.9$; $\text{Epsilon} = 0.001$; produces an error value, $\text{MAE} = 0.00829921$; $\text{MSE} = 0.00602241$; $\text{RMSE} = 0.0776042$.

Keywords : *Support Vector Machine, Particle Swarm Optimization, Prediction, Electircity Usage.*