

ABSTRACT

The electrical energy sector is one of the most needed energy, electrical energy is used in household appliances, offices, security and others, in household electricity needs the number of tools that use electrical energy as the main energy source does not rule out the possibility of electrical energy consumption getting longer is increasing, this causes the payment of electricity costs will continue to increase, especially for household electricity needs.

Recurrent Neural Network (RNN) method to monitor the use of single-phase electricity in household appliances. can identify electrical devices based on the type of electrical load, this method can reduce the increase in electricity cost payments by identifying the electrical devices used based on the type of electrical load used.

The data is retrieved using the help of hardware. System testing detects the type of electrical load carried out on three household electrical devices, namely fans, water heaters and irons. This research begins with collecting data related to the device to be tested. After the data is taken, the preprocessing process will be carried out. After the data has gone through the preprocessing stage, it will be tested using several methods, namely comparison of the dataset and train data, learning rate, batch size, and the last is epoch testing. Based on the test results, the process of identifying the type of electrical load that is being used will be carried out. From the results of testing the system can identify the three devices with an accuracy, precision, recall, and f1-score is 97.90%, 98.39%, 97.39%, and 97.83% using the RNN method.

Keywords: *Household Electricity, Identification of Electrical Load, RNN.*