

ABSTRACT

Today, electrical energy has become a necessity for humans. Almost all activities use electrical energy, ranging from the industrial world to household needs. Every year the need for electrical energy continues to grow. Excessive consumption of electrical energy can reduce the quality of the electrical energy. Users of electrical energy need to have a monitoring system for the use of electrical energy so that excessive consumption of electrical energy does not occur.

Convolutional Neural Network (CNN) is an algorithm for identifying the type of electrical load on household electronic devices. With this system, it can help users find out which electronic devices are using a lot of power.

Testing of the electrical load type identification system was carried out on 3 types of electronic devices, namely water heaters, irons, fans. Then the 3 types of electronic devices will be combined so that they become 7 classes. The test results obtained that the system can identify the 3 types of electronic devices and their combinations with an accuracy of 97.83%, precision of 98.29%, recall of 97.30%, F1 Score of 97.73% using the Convolutional Neural Network method formed, with the average time required for the system to recognize less than 1 second.

Keywords: Identification, electrical load type, dataset, Convolutional Neural Network.