Abstract
The development of the medical world today always has a connection with technology, as well as medical devices that have changed from manual or analog to digital. Nowadays, doctors still analyze disorders of human organs by using medical devices that only provide information on the condition of the body. This medical instrument has not been able to analyze and determine what disorders occur in the human body. That fact is interesting to be used as research. One of human's vital organs is the heart. At this time, heart activity can be recorded using an Electrocardiogram tool. The Electrocardiogram (ECG) is computerized to detect Premature Ventricular Contractions (PVC) disorders. To be able to identify the interference, the data is processed using the Artificial Neural Network method. The Artificial Neural Network architecture used in this research is Multi-Layer Perceptron (MLP). To be able to optimize the Multi-Layer Perceptron method, the Firefly algorithm and the Backpropagation algorithm are used. In this experiment, a comparison between the use of the Firefly algorithm and the Backpropagation algorithm is made to get the best algorithm. The results of this study indicate that the use of the Backpropagation algorithm provides better accuracy compared to the Firefly algorithm with an average accuracy of 99.48%.

Keywords: elektrocardiogram, premature ventricular contractions, multi layer perceptron, firefly algorithm, backpropagation