ABSTRACT

Water is one of the important natural resources for the life of living things, especially for the survival of fish. However, if the water is polluted, then the water can be dangerous for fish. In this research, proposing an Internet of Things (IoT) based system to predict water pollution in Jatiluhur Reservoir and be able to monitor changes in the value of water quality. Water quality data is obtained from several sensors and a microcontroller. Data is transmitted into Thingspeak and used for training by ANNs (Artificial Neural Networks) which are used to predict fresh water pollution in the Jatiluhur Reservoir. The results of the data that has been transmitted, are displayed through Thingspeak. In testing ANNs are divided into two, namely testing of training variables with regard to the accuracy of each variable and ANNs prediction performance using training variables with the highest accuracy. The highest accuracy training variable was obtained with Epoch = 600; Learning Rate = 0.1; Momentum = 0.1; and Training Data Percentage = 85%. ANNs prediction testing is based on the training variable with an average accuracy value of 97.67%. This proves that ANNs modeling in this research is good enough in predicting data.

Keywords: *water pollution, artificial neural networks, internet of things, freshwater fish, thingspeak, prediction, monitoring.*