

IMPLEMENTATION OF ARTIFICIAL NEURAL NETWORKS FOR RAINWATER QUALITY DETECTION PROTOTYPES IN WATER SHOP USING THE BACKPROPAGATION METHOD IN BUWENG VILLAGE

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ABSTRACT

Water is an important codimen in fulfilling daily life, especially for human beings, one of the uses of water in daily life is as drinking water. The use of this water must be of good quality so as not to cause disease when consumed. Water quality is a parameter that determines the water can be consumed or used in accordance with its provisions. Villages usually have water reservoirs for backup or water containers. Water is obtained from buying a water tank or from rainwater. In this study, a tool has been designed to detect the quality of rainwater in Buweng Village. In the manufacture of this tool used turbidity sensors, tds sensors, and pH sensors that interpret physical parameters and parameters in water by applying the backpropagation neural network method. The results of this study tds sensor and pH sensor on the prototype produce the percentage error and accuracy values. The tds sensor error value is 46% with an accuracy of 54% and the pH sensor error value is 19% with an accuracy of 81%. After the data collection process was carried out, the rainwater classification process was continued on the prototype. From this process, the accuracy, precision, sensitivity, and specification values are quite good, namely 100%. The information obtained is displayed on a 20X4 LCD so that it can be seen by the user.

Keywords: Rainwater, water quality, water classification, artificial neural network, backpropagation.