Abstract

Floods cause economic losses, even cause loss of life. To anticipate floods and the impacts, flood prediction including early warning systems should be developed using appropriate techniques. The aim of this research is to apply the back propagation neural network algorithm for water level prediction and produce web-based flood prediction information system. The system is built using a back propagation neural network algorithm. This algorithm has 3 stages in the training process, which are forward feed, calculation, and back propagation. The used data is derived from the physics laboratory of Diponegoro University. This study concludes that the application of back propagation neural network algorithm for flood prediction can produce an accurate prediction. Therefore, this can be a reference for predicting floods significantly based on water levels in certain places. In this study obtained MSE at the first iteration of 0.0142, the smallest MSE that meets the limit of threshold of 0.000002420 and data accuracy of 98.66%. This means that generally, the back propagation neural networks application produce accurate water level prediction, which is close to the actual data.
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Index Terms

Computer Science Algorithms
Keywords

Artificial neural network, backpropagation, prediction, water level, flood, early warning.