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Proceedings of the 2018 7th International Conference on Computer and Communication Engineering, ICCCE 2018
 16 November 2018, Article number 8539253, Pages 258-263
 7th International Conference on Computer and Communication Engineering, ICCCE 2018; Kuala Lumpur; Malaysia; 19 September 2018 through 20 September 2018; Category numberCFP1839D-USB; Code 142740

Flood Disaster Warning System on the go (Conference Paper)

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Abstract

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Floods are one of the top natural disaster that affects many regions around the world, harming human lives and lessening economy growth. Therefore, it is crucial to build an early warning system that forecast flow rate and water level to reduce the casualties of flood disaster. The objective of this paper is to design a flood monitoring system which integrates both flow and water level sensor and use two class neural network to predict the flood status from stored data in the database. A laboratory experiment was carried out to simulate the system and a pressure gauge was utilized to measure the pressure of inflowing water. A NodeMCU ESP8266 enables transmission of sensor data to Thingspeak channel for real-time visualization and storing the data in database. Furthermore, two class neural network module built in Microsoft's Azure Machine Learning (AzureML) was used to predict flood status according to a pre-define rule. The result of the 2-class neural network showed that using 3 hidden layers has the highest accuracy of 98.9% and precision of 100%. © 2018 IEEE.

SciVal Topic Prominence

Topic: artificial neural network | Neural networks | river flow

Prominence percentile: 98.337

Author keywords

2-class Neural Network Artificial Neural Network Azure Machine Learning Azure Web Service Energy Security
 Flood Forecasting Flood Monitoring System Internet of Things (IoT) NodeMCU (ESP8266) Thingspeak

Indexed keywords

Engineering controlled terms: Data visualization Disasters Energy security Flood control Floods
 Internet of things Learning systems Neural networks Water levels Weather forecasting
 Web services Windows operating system

Engineering uncontrolled terms: ESP8266 Flood forecasting Flood monitoring Internet of Things (IOT) Thingspeak

Engineering main heading: Monitoring

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Funding details

Funding sponsor	Funding number	Acronym
Ministry of Education - Singapore	FRGS16-067-0566	MOE

Funding text

ACKNOWLEDGMENT This work was conducted at the IOT and Wireless Communication Protocols Lab, and is partially funded by the Malaysian Ministry of Education (MOE) research fund No. FRGS16-067-0566.

(2017) International Journal of Applied Engineering Research

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Document Type: Conference Paper
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
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