

Abstract

Electroencephalography signal or EEG signal is one of biosignals that currently being hot topic for research. EEG signal has many benefits including detection of epilepsy from patients, sleep disorders, or an input for a computer application. A kind of input that can be used based on EEG signal is eye state. However, An Classification with a suffice performance is needed for that purpose. Therefore, writer will do a research which will implement a new learning method for Artificial Neural Network called Extreme Learning Machine for classifying eye state based on EEG signal. Dataset that will be used for training and testing were donated by Oliver Roesler and combined with dataset from Repository University of California, Irvinel (UCI). There are 7 corpora which consist of EEG records of 4 differents people. Based on system testing, we can draw a conclusion that ELM classififer can be used to classify eye-state based on ELM with good performance. Tested system can achieve 97,95% accuracy and only need 0,81 second of training if the corpus is used separately. However, if all the corpora are used together as one big corpus, ELM classififer can only achieved 78,94% accuracy with 5,71 seconds training time.

Keywords : *Classification, Electroencephalography (EEG), Extreme Learning Machine (ELM).*