

EPILEPSY DETECTION USING EEG SIGNALS

Amer Salam¹, Muhammad Nomani Kabir^{2*}, Abdulghani Ali Ahmed², Khalid Farhan²

¹Taiz University, Taiz, Yemen, Email: amer.sallam@gmail.com

²Faculty of Computer Systems & Software Engineering, University Malaysia Pahang, 26300
Gambang, Pahang, Malaysia.

*Corresponding Author: Email: nomanikabir@ump.edu.my

Abstract

In the field of medical science, one of the major recent researches is the diagnosis of the abnormalities in brain. Electroencephalogram (EEG) signal is a neuro signal which is generated due the different electrical activities in the brain. These signals can be captured and processed to get the useful information that can be used in early detection of some mental and brain diseases. Suitable analysis is essential for EEG to differentiate between normal and abnormal signals in order to detect epilepsy which is one of the most common neurological disorders. Epilepsy is a recurrent seizure disorder caused by abnormal electrical discharges from the brain cells, often in the cerebral cortex. This research focuses on the usefulness of EEG signal in detecting seizure activities in brainwaves. Feature extraction of EEG signals is core issue to carry out brain analysis. In this research, feature extraction has been performed using wavelet transform. These features have been applied to Neural Networks for EEG classification.

Keywords: Electroencephalogram; brain computer interface; Artificial Neural Networks; Discrete Wavelet Transform