ABSTRACT

While watching horror movie, human body gives a response in a form of fear. Fear itself can conduce a fluctuation in brain activity and results a certain signal characteristic. The activity of brain waves can be recorded by Electroencephalogram. Based on the signal's frequency, brain signals can be classified into 5, those are delta, theta, alpha, beta and gamma.

In this final project, it is designed a system to compare and classify a different patterns of signals in condition of normal, getting scared, and really scared based on delta and theta signals of someone when given a stimulus of a horror movie scene. The feature extraction that is used in this research is Discrete Wavelet Transform (DWT) and using K-Nearest Neighbor (K-NN) as the classification method.

The result from signal pattern comparison shows that on delta signal the frequencies strat working at the same frequency on every channels, on theta signal the frequencies start working at the different frequency and the highest difference is on PZ channel. The testing results show that the highest delta signal accuracy is one the AF3 and PZ channels with an accuracy of 61.11% and the theta signal is on the T7 and PZ channels with an accuracy of 55.56%.

Keyword: EEG, DWT, K-NN, horror movie