

ABSTRACT

To find out if someone or not can be done from direct observation, therefore we can do it using the Electroencephalogram (EEG) for more. Electroencephalograph or EEG which becomes an instrument of electrical activity or brain signal due to ion fluctuations in brain neurons. Activities that occur in the brain can be recorded by Electroencephalograph or EEG which is an electrical activity recording device on brain signals due to ion fluctuations in brain neurons. There are 5 types of human brain signals namely alpha, beta, theta, delta, and gamma which have their respective frequency ranges.

This final project aims to determine whether there is a change in brain activity when people truth and lies by looking at human brain wave form from alpha signal with frequency range (8–12) Hz, from theta signal with frequency range (4-8) Hz and from delta signal with frequency range (0,5– 4) Hz. Data retrieval is done by interviewing correspondents which are divided into 2 general and personal question sessions, each session consisting of 5 questions.

This final project used the feature extraction is discrete wavelet transform or DWT with the use of daubechies wavelet and the classification system used is artificial neural network backpropagation method. The result of this final project is a system that is able to classify alpha, theta and delta signals based on honest conditions and lie someone with the best accuracy results for alpha signal is 75%, theta signal is 75% and delta signal is 70%. This proves a change in brain activity when someone is honest and lying.

Keywords: *Electroencephalography, Brainwave, Backpropagation, Wavelet.*