ABSTRACT

Classification method capable of recognizing abnormal activities of the brain functionality are either brain imaging or brain signal analysis. The abnormal activity of interest in this study is characterized by a disturbance caused by changes in neuronal electrochemical activity that results in abnormal synchronous discharges. The method aims at helping physicians discriminate between healthy and seizure electroencephalographic (EEG) signals.

Discrimination in this work is achieved by analyzing EEG signals obtained from freely accessible databases. MATLAB has been used to implement and test the proposed classification algorithm. The analysis in question presents a classification of normal and ictal activities using a feature relied on Hilbert-Huang Transform. Through this method, information related to the intrinsic functions contained in the EEG signal has been extracted to track the local amplitude and the frequency of the signal. Based on this local information, weighted frequencies are calculated and a comparison between ictal and seizure-free determinant intrinsic functions is then performed. Methods of comparison used are K Nearest Neighbour with different distance, Euclidean,cityblock,cosine.

The developed system capable of achieving higest accuracy of 95% by using K=5 and distance function of CityBlock. Because CityBlock can detected the out layer. K=5 show the highest accuration because the chart of CityBlock. Next development of this application can cover the feature extraction method and classification to pursue accuracy as closest as possible to 100%.

Kata kunci : *ElectroEnchepaloGraph, EEG, Hilbert Huang Transform, K-Nearest Neighbor*