Abstract

Activity refers two activities and in this work to classification between two activities is achieved with the help of statistical feature extraction technique. The term silent activity refers to the two processes in which we are proposing a method to predict Cognitive and Non cognitive tasks performed by the human brain. Electroencephalogram (EEG) is the electrical signal of brain which contains valuable information. In this work EEG and its frequency sub-bands have been analyzed to detect silent activity signal. The electroencephogram (EEG) contains information about brain hence the sub band decomposition of EEG is used for analyzing many brain diseases. The sub-band decomposition means to extract various brain waves with different frequency bands such as alpha, beta, delta, theta and gamma from EEG signal to get more information from it. The work was carried out to extract various brain waves using discrete wavelet transform. The EEG signal is decompose into five sub bands alpha, beta, gamma, theta, and delta. A wavelet transform has been applied to decompose the EEG into its sub bands. 

Statistical features Standard deviation, Covariance is calculated for each sub-band. The effective classification of EEG used for brain computer interface and can be used for silent communication or for recognizing different mental tasks.
Statistical Feature based Activity Classification

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Index Terms

Computer Science 
Information Sciences

Keywords

Sub-band Decomposition EEG Wavelet Statistical features Standard Deviation
Variance