

Elbow movement detection using brain computer interface

Abstract

This paper investigates effectiveness of using a non-invasive Electroencephalographic (EEG) activity for Brain Computer Interface, to analyze the brain activity and translate human elbow movement into the movement of an artificial actuator. Simple time domain statistical features (mean, variance, skewness, kurtosis, energy, inter quartile range and median absolute deviation) are extracted to detect left to right and right to left elbow movement by using a linear discriminant function based classifier. A robotic arm is used to mimic human elbow movement and its movement was controlled by the classifier's output. An overall accuracy of 73% is achieved in the classifications of two elbow movement using EEG signal.