# Recognition of motor imagery of hand movements for a BMI using PCA features


## Abstract

Motor imagery is the mental simulation of a motor act that includes preparation for movement and mental operations of motor representations implicitly or explicitly. The ability of an individual to control his EEG through imaginary mental tasks enables him to control devices through a brain machine interfaces (BMI). In other words a BMI can be used to rehabilitate people suffering from neuromuscular disorders as a means of communication or control. This paper presents a novel approach in the design of a four state BMI using two electrodes. The BMI is designed using Neural Network Classifiers. The performance of the BMI is evaluated using two network architectures. The performance of the proposed algorithm has an average classification efficiency of 93.5%.