Analysis and Classification of EEG Signals Related to Arithmetic Operations

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 134
Number 15

Year of Publication: 2016

Authors:

Abstract

The advancement in computer hardware and digital signal processing made possible use of brain signal for the communication between human and computers. The electroencephalogram contains the information of brain signals. This paper focuses on mental tasks classification from electroencephalographic (EEG) signals. The four arithmetical mental tasks considered are calculation, counting, reminding along with relaxation. The database of four subjects was collected and used as training dataset. The features have been extracted from the delta, theta, alpha and beta of EEG bands in frequency domain. These features were analyzed and classified using the Linear Discriminant Analysis (LDA) classifier. Cluster Pattern indicates that these four mental tasks can be classified and recognized using EEG signals.

References


Index Terms

Computer Science  Signal Processing

Keywords

EEG, Mental Tasks, LDA Classification