EEG Classification based on Machine Learning Techniques

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

Volume 128 - Number 4

Year of Publication: 2015

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10.5120/ijca2015906515

Abstract

The main issue to build applicable Brain-Computer Interfaces is the capability to classify the electroencephalograms (EEG). During the last decade, researchers developed lots of interests in this field. The purpose behind this research is to improve a model for EEG signals analysis. Filtration of EEG Signals is essential to remove artifacts. Otherwise, wavelet transform was used to extract features. Mean, Maximum, Minimum and Standard Deviations values of wavelet coefficients for the EEG signals were chosen as a feature vector. This paper compares the classification results by the use of Neural Network, K-Nearest Neighbor and Support Vector Machine classifiers. It has been illustrated from results that the K-Nearest Neighbor classifier outperforms a better performance than Neural Network and Support Vector Machine.

References


Index Terms

Computer Science Software Engineering

Keywords

Brain Computer Interface; Support Vector Machine; Neural Network; K-Nearest Neighbor; Wavelet Transform; EEG.