Identification of epilepsy utilizing hilbert transform and SVM based classifier

ABSTRACT

Epilepsy is a persistent neurological condition of the brain in which the activity of the brain goes out of normal state. Classification and Analysis of EEG signal is the early approach for epilepsy diagnosis. During this paper, we have a tendency to propose an EEG signal classification approach based on Support Vector Machine (SVM) classifier. In extracting features from the raw EEG data we applied the Hilbert Transform method and used its coefficients. Then, after the PCA dimension reduction a two-class SVM classifier is used for EEG signals automatic classification, one class for healthy subjects and another for subjects with epilepsy. In SVM classifier we need to divide the EEG signals into a training dataset and testing dataset for classification. We have used five sets of EEG signals which are publicly accessible on EEG time series database. The evaluation and comparison of SVM based classifier with two other classification methods such as KNN and LVQ based classifier was done.