

## The effect of noise removing on emotional classification

### Abstract :

This paper explains the issues of study that was designed to evaluate the effect of denoising algorithm to detect emotional expression through Electroencephalogram (EEG). This research led to classify the EEG features due to emotion which was induced by the facial expression stimulus include of happy and sad and neutral cases. Event-related potential (ERP) method was selected to probe the ability of Independent components analysis (ICA) and principal components analysis (PCA) as denoising mathematical tool which is used for data preprocessing. The features were extracted by common spatial patterns (CSP) to decrease the dimensions of data. After that extracted components was classified by support vector machine (SVM) to show the effect of noise removing on data classification. The results show that ICA could provide the most accurate result for classifying emotional states in brain activity than other methods. However, the PCA was not shown a very different and inaccurate classification results.