SINGLE−TRIAL EEG CLASSIFICATION FOR BRAIN−COMPUTER INTERFACE USING WAVELET DECOMPOSITION (MonAmOR2)

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Abstract :

A classification system for EEG signals using wavelet decomposition to form the feature vectors is developed. Single−trial analysis loses the benefit of averaging to remove non−task related brain activity and makes it more difficult to pick out key features determining the execution of a task. Wavelet analysis is used here to localise the BP of voluntary movement. Classification of a self−paced typing experiment was made using wavelets for the feature selection and SVMs for the classification of feature vectors. Results of up to 91\% classification accuracy were obtained, proving that wavelets are an effective tool, and the use of wavelets will be considered in more complex work.

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