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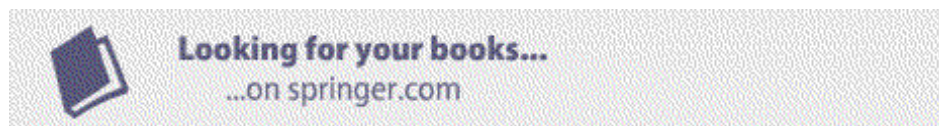
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Abstract

Brain Computer Interface (BCI) provides people with motor disabilities a new channel for communication and control. In this paper, we first introduce a framework of BCI system, consisting of EEG Acquisition, Signal Preprocess, Feature Extractor, Pattern Classifier, Subject Task Generation and Visualization. The system is able to adapt to subjects online and to work in real time condition with high accuracy and short latency. The BCI system is based on analysis of EEG patterns of object's left and right motor imagery. Independent Component Analysis and temporal filter are employed for artifacts removal and noise reduction. Spatial filter and autoregressive model are used as feature extractor, from which feature vectors are classified by SVM. The best classification accuracy of all objects' is up to 99% in offline analysis and 80% in online condition.

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