

# EEG signal classification for real-time brain-computer interface applications: A review

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## **Abstract**

Brain-computer interface (BCI) is linking the brain activity to computer, which allows a person to control devices directly with his brain waves and without any use of his muscles. Recent advances in real-time signal processing have made BCI a feasible alternative for controlling robot and for communication as well. Controlling devices using BCI is a crucial aid for people suffering from severe disabilities and more than that, BCIs can replace human to control robots working in dangerous or uncongenial situations. Effective BCIs demand for accurate and real-time EEG signals processing. This paper is to review the current state of research and to compare the performance of different algorithms for real-time classification of BCI-based electroencephalogram signals.

**Keywords:** Electroencephalography, Classification algorithms, Feature extraction, Brain computer interfaces, Hidden Markov models, Real time systems, Support vector machines

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