Brain-Computer Interfaces and Their Applications in Rehabilitation, Robotics, and Control of Human Brain States

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Message from the Guest Editor

Brain-computer Interface (BCI) is a technology that has been introduced to improve the quality of life for people with disabilities or difficulties in their daily lives. BCI studies are not limited to the EEG signals, indeed other biosignals such as EMG, ECG, and GSR are beneficial in BCI applications. BCI has the potential to be used in many applications based on biosignals.

This topic focuses on mathematical solutions based on signal denoising, feature extraction, and machine learning algorithms. This collection aims to highlight mathematical innovations as well as new ideas for designing tasks to induce the brain to generate distinctive neuronal patterns. We welcome manuscripts on the following subtopics:

- Decoding brain neuron activities by developing mathematical methods for identifying patterns within the EEG signals automatically
- Identifying EEG patterns relative to human actions and decisions automatically
- Analyzing the patterns generated in a designed task to find out which method is more beneficial, for example, wavelet, chaotic methods, common spatial patterns, or reinforcing methods.
- The development of classifiers to automate the identification procedures

Special Issue

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Message from the Editor-in-Chief

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