Special Issue

Recent Trends, Applications, and Challenges of Brain–Machine Interfaces

Message from the Guest Editors

The brain–machine interface (BMI), also referred to as the brain–computer interface (BCI), has practical applications to many disciplines, such as brain research, medical rehabilitation, neuroergonomics and smart environment, security and authentication, etc. This involves a range of diverse data acquisition techniques recording brain signals from the scalp, subdural, subcortical, and deep brain structures. These signals include electrocorticograms (ECoG), intracortical signals such as local field potentials (LFP), multi- and single-unit activities (neuronal spikes) for the invasive category, electroencephalograms (EEG), magnetoencephalograms (MEG), functional magnetic resonance imaging (fMRI), and functional near-infrared spectroscopy (fNIRS) for the non-invasive category. These signals require sophisticated processing before they can be used in the application area of BMI/BCI. There are numerous challenges in the pipeline from signal acquisition to application. This Special Issue aims to collate cutting-edge original research as well as reveiw articles targeting recent trends, applications, and challenges of BMI/BCI.

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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