

CALL FOR PAPERS
2009 Special Issue of Neural Networks
Brain Machine Interface

Recent developments of interfaces that enable a direct communication between the brain and machine are expected to extend the applicability of systems neuroscience and will foster a variety of innovative advances in neuro-technology. Brain Machine Interfaces (BMI), or Brain Computer Interfaces (BCI) will allow humans to operate computers, robotic arms, wheelchairs, prosthetic devices and other instruments by using only the signals of their brain. This neuro-technology may help severely disabled but cognitively intact patients to communicate and interact with outside world. At the same time, this technology will lead to innovative modalities of interaction for the healthy. Developing new algorithms to decode the cognitive signals from the individual brain signals and learning how the brain adapts to novel environments when interacting directly with the computer will also lead to better understanding of the brain. Thus, in the near future BMI/BCI research will bring about major advances in brain science and information technology.

BMI/BCI research is multidisciplinary in nature. This work is firmly based in the basic and computational neurosciences, disciplines like signal processing, machine learning, robotics, rehabilitation engineering, electrode hardware engineering and ethics play a pivotal role in the advancement of this young field. The interest in this field of research has grown tremendously during the last decade. Thus, publishing a special issue to integrate multidisciplinary studies on BMI is very timely for catalyzing further development in this active field of research.

This Special Issue will focus on recent advances in the studies of BMI/BCI, and will incorporate papers from broad range of disciplines e.g. invasive and noninvasive BMI/BCI, techniques for decoding brain-derived signals, neuroethics and applications of neuro-technology.

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Submission

Please access our on-line submission system:
<http://ees.elsevier.com/neunet/>
Deadline for submission: September 30, 2008
Notification of final acceptance: May 15, 2009
Deadline for submission of final papers: June 15, 2009
Format: as normal papers in the journal

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