Computational Intelligence and Neuroscience

Special Issue on

Recent Advances in Brain Signal Analysis: Methods and Applications

CALL FOR PAPERS

Traditional, recent, and new computational tools are introduced in the literature as accurate and fast alternatives capable of aiding specialists in their decision making, reducing/eliminating errors which originated from their subjectivity related to fatigue, tiredness, parallax, or limitations in the visual field during a medical image analysis, among others. This integration between technology and health field is of utmost importance to discovery of new diseases and better diagnoses, improving the quality of life of patients and proposing new methods of alternative treatments, for example.

In the neuroscience field, it is possible to observe a wide integration of computational methods, such as Neurorehabilitation, in which use is made of controlled virtual environments for the treatment of posttraumatic disorders, cerebral palsy, or traumatic brain injury, for example. Its aim is to promote a recovery of brain function lost due to a lesion through noninvasive brain stimulation (brain modulation) in a more accurate and faster manner than the traditional techniques. Neurorobotics is where artificial limbs are developed in order to act as a real member being controlled from a brain-machine interface. With the advancement of a better understanding of how our brain works, new realistic computational algorithms are being considered, making it possible to simulate and model specific brain functions for development of new machine learning techniques.

A great diversity of computational techniques are applied in the neuroscience field, for example, automation and control, image processing and analysis, virtual and augmented reality, computer graphics, biomedical sensors, multicriteria analysis, and data acquisition devices.

The main objective of this special issue is to bring together recent advances on new methods and applications of one-dimensional brain signals analysis. We invite researchers to contribute original work related to this special issue, in which only works related to the processing of one-dimensional signals are considered. Also, exploiting recent methodology using computational and mathematics techniques.

Potential topics include, but are not limited to:

- Adaptive signal processing
- Passive brain-machine interface
- Brain-to-brain interaction
- Passive brain computer interface
- Neurorobotics

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/cin/brsia/.

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