



ICONIP 2023

November 20-23, 2023, Changsha, China

Invited Session Proposal for ICONIP2023

Title: Computationally Intelligent Techniques in Processing and Analysis of Neuronal Information

Description:

Being part of the Central Nervous System (CNS), the brain specialises in processing information simultaneously from many different sources. The neurons work as basic information processing units in the brain and interconnect with each other to form hierarchical and parallel pathways. The neural pathways are mainly involved in transforming information originating from one or more sources into either action as motor movements or specialised information understood by the brain as cognitive functions. Various computational techniques suggest research on the biophysical basis of brain research and

its information-processing capabilities. There has been a significant increase in research activities in diverse specialities, including neuroinformatics, neuroengineering, computer, electrical and biomedical engineering. And developing computationally intelligent methods capable of deciphering the brain's information processing capability is one of the biggest challenges in these fields.

The focus of this invited session is: (i) to address the recent advances in computationally intelligent techniques in processing neuronal information; (ii) to provide updated information and a forum for the scientists and researchers looking for more relevant information in decoding brain functions using expert and computationally intelligent systems.

Topics include (but are not restricted to):

- Analysis and processing of brain data using brain/bio-inspired methods
- Computationally intelligent techniques for brain-computer interfaces
- Computationally intelligent techniques for neuroscience applications
- Explainable and interpretable method for brain data
- Machine learning methods in brain and cognition research
- Neuronal image processing, analysis, and modelling
- Neuronal signals processing and modelling and neuronal pattern analysis

Proposers:

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