Call for Papers

International Joint Conference on Neural Networks 2023

Special Session: Advances in deep and shallow machine learning algorithms for biomedical data and imaging

Aim and Scope:

Deep learning is one of the most important revolutions in the field of artificial intelligence over the last decade. It has achieved great success in different tasks in computer vision, image processing, biomedical analysis and related fields. Researchers in deep and shallow machine learning including those working in computer vision, image processing, biomedical analysis and related fields when tied with experienced clinicians can play a significant role in understanding and working on complex medical data which ultimately improves patient care. To develop a novel deep or shallow machine learning algorithm specific to medical data is a challenge and need of the hour. Healthcare and biomedical sciences have become data-intensive fields, with a strong need for sophisticated data mining methods to extract the knowledge from the available information. Biomedical data contains several challenges in data analysis, including high dimensionality, class imbalance and low numbers of samples. Although the current research in this field has shown promising results, several research issues need to be explored as follows. There is a need to explore novel feature selection methods to improve predictive performance along with interpretation, and to explore large scale data in biomedical sciences.
This special session aims to bring together the current research progress (from both academia and industry) on novel machine learning methods to address the challenges to biomedical complex data. Special attention will be devoted to handle feature selection, class imbalance, and data fusion in biomedical and machine learning applications. It will attract medical experts who have access to interesting sources of data but lack the expertise in using machine learning techniques effectively.

Topics:

The topics relevant to the special session include (but are not limited to) the following topics:

- Computer aided detection and diagnosis
- Machine learning methods applied to biomedical data
- Deep learning for neuroimaging
- Biomedical image classification
- Evolutionary computing in bioinformatics
- Pattern recognition for imaging and genomics
- Big data analytics on biomedical applications
- Improved algorithms for multimodality neuroimaging data fusion systems
- Clustering and classification algorithms for Healthcare.

Guest Editors:

Mohammad Tanveer, Indian Institute of Technology Indore, India,
Email: mtanveer@iiti.ac.in, Homepage: http://people.iiti.ac.in/~mtanveer/
Yu-dong Zhang, University of Leicester, UK
Email: yudong.zhang@le.ac.uk, Homepage: https://le.ac.uk/people/yudong-zhang
P. N. Suganthan, Qatar University. p.n.suganthan@qu.edu.qa

Paper Submission

Papers submitted to this Special Session are reviewed according to the same rules as the submissions to the regular sessions of IJCNN 2023. Authors who submit papers to this session are invited to mention it in the form during the submission. Submissions to regular and special sessions follow identical format, instructions, deadlines, and review procedures. Please, for further information and news refer to the IJCNN website: https://2023.ijcnn.org/

To submit to this special session, please use this link:

https://edas.info/newPaper.php?c=30081&track=116093