MLND 2022

Special Session on Machine Learning Prediction of Neurodegenerative Diseases Progression

at the 14th Asian Conference on Intelligent Information and Database Systems (ACIIDS 2022)
Almaty, Kazakhstan, June 6-9, 2022
Conference website: http://www.aciids.pwr.edu.pl/

Special Session Organizers

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Objectives and topics

We are not able to precisely follow information processes in the brain, but they seem to be like computations in the deep artificial neural networks (DNN). Even if the development and applications of DNN, recently show many similarities to brain processes, we are not capable to build artificial systems comparable in reliability and plastic properties to the brain. However, these brain advantages sometimes have opposite consequences. Many years of pathological processes in the brain are so effectively compensated, that the most patients are not aware of them. When they notice the first disease symptoms, it is too late for any cure as we do not know how to revive the dead neurons in the brain. There is only one way to help, by finding intelligent biomarkers that may sense very early these pathological brain processes.

As the neurodegeneration is problem related to brain computations, in the MLND 2018 Special Session at the 14th Asian Conference on Intelligent Information and Database Systems (ACIIDS 2022) we propose to address classification, prediction, and clustering methods as intelligent biomarkers that potentially might be more sensitive than standard neurological tests. We want to offer an opportunity for researchers and practitioners to identify new promising research directions as well as to publish recent advances in this area.

The scope of the MLND 2018 includes, but is not limited to the following topics:

- Machine learning and data mining methods in brain research
- Machine learning algorithms in objects recognition and their neurological meanings
- Data mining methods to assist in brain surgery (like Deep Brain Stimulation in Parkinson's diseases)
- Machine learning in motor symptom progressions in neurodegenerative diseases (ND)
- Data mining in brain imaging: CT, MRI, DTI, and fMRI
- Estimation of different therapies efficiencies by means of data mining
- Computer assisted diagnosis and treatment
- Machine learning in brain mapping
- Different Data Mining methods as a tool to study cognitive or emotional brain
- Brain plasticity and machine learning algorithms
- Diagnostic data mining emotions classification in speech and music
- Eye movements properties as important biomarker of ND
- Time series analysis in research for the elderly and those at risk of neurodegenerative diseases
- Analysis of human movement

Important dates

Submission of papers: **January 15, 2022 (EXTENDED - HARD)**
Notification of acceptance: **March 1, 2022**
Camera-ready papers: **March 15, 2022**
Registration & payment: **March 15, 2022**
Conference dates: **June 6-9, 2022**

Program Committee (to be invited)

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Adam Świtoński, Silesian University of Technology, Gliwice, Poland
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Dominik, Slezak, Institute of Mathematics, Warsaw University, Poland

Submission

All contributions should be original and not published elsewhere or intended to be published during the review period. Authors are invited to submit their papers electronically in pdf format, through Easy Chair. All the special sessions are centralized as tracks in the same conference management system as the regular papers. Therefore, to submit a paper please activate the following link and select the track: ***MLND 2022: Special Session on Machine Learning in Neurodegenerative Diseases.***

https://easychair.org/conferences/?conf=aciids2022

Authors are invited to submit original previously unpublished research papers written in English, of up to 13 pages, strictly following the LNCS/LNAI format guidelines. Authors can download the Latex (recommended) or Word templates available at Springer's web site. Submissions not following the format guidelines will be rejected without review. To ensure high quality, all papers will be thoroughly reviewed by the MLND 2022 Program Committee. All accepted papers must be presented by one of the authors who must register for the conference and pay the fee. The conference proceedings will be published by Springer in the prestigious series LNCS/LNAI (indexed by ISI CPCI-S, included in ISI Web of Science, EI, ACM Digital Library, dblp, Google Scholar, Scopus, etc.).