**IJCNN Special Session on Artificial Intelligence and Advanced Machine Learning for Biomedical Signal Processing**

**IEEE International Joint Conference on Neural Networks (IJCNN)**

**July 19-24, 2020, Glasgow, Scotland (UK)**

**Scope and Aim**

Biomedical signal processing involves the analysis and treatment of the physiological electrical activities measured using sensors placed on a living thing, in order to provide useful information on which decisions can be made. Recently, Artificial Intelligence (AI) and Machine Learning (ML) have received a great attention to solve difficult and complex problems related to biosignals analysis and processing; where the traditional signal processing and conventional machine learning techniques have shown their limitations to solve such problems. Indeed, the recent advances in this area have brought an impressive progress to solve several practical and difficult problems in many fields including medicine, e-health, healthcare, neuroscience, brain-computer interface (BCI), neurofeedback, robotics, robotic exoskeletons and biometrics, etc. In this context, the advanced learning techniques such as deep learning, reinforcement learning, deep reinforcement learning, statistical learning have shown their effectiveness to resolve various problems of detection, classification, clustering, segmentation, control, diagnosis, etc.; and thus becomes useful solutions to be investigated more for other open problems.

The aim of this special issue is to bring together researchers and scientists in the fields of biomedical signal processing, AI and ML, to present and discuss the recent advances on learning methods and intelligent approaches for biomedical signal and image processing.

**Topics**

The main topics that are of interest to this session include, but are not limited to:

- AI for biomedical signal processing and analysis
- ML for biomedical signal processing and analysis
- Advanced ML for biomedical data processing (e.g. deep learning, reinforcement learning, deep reinforcement learning, statistical learning...)
- Biomedical data processing in Big Data
- Advanced biomedical signal and image processing methods with application in medicine, e-health, healthcare, neuroscience, BCI, neurofeedback, robotics, robotic exoskeletons, biometrics, etc.
- Related applications

**Important Dates**

- Paper Submissions: **January 15, 2020**
- Paper Acceptance Notifications: **March 15, 2020**
- Camera Ready Submission of Accepted Papers: **April 15, 2020**
- Conference: **July 19-24, 2020**

**Submission Guidelines**

- This special session will be held in 2020 International Joint Conference on Neural Networks-IJCNN (wcci2020.org/ijcnn-sessions/), as part of 2020 IEEE World Congress on Computational Intelligence (https://wcci2020.org) (Glasgow, Scotland, United Kingdom, July 19-24, 2020).
- All papers should be prepared according to the IJCNN 2020 policy and should be submitted electronically using the conference website (https://wcci2020.org/).
- To submit your paper to this special session, you will choose our special session “SS9. Artificial Intelligence and Advanced Machine Learning for Biomedical Signal Processing” on the submission page https://ieee-cis.org/conferences/ijcnn2020/upload.php
- All papers accepted and presented at IEEE IJCNN/WCCI 2020 will be included in the conference proceedings published by IEEE Explore, which are typically indexed by EI.

**Journal Special Issue**

A selection of accepted papers will be invited for publication in a special issue of a SCOPUS indexed journal (to be announced).

**Organizers**

- **Larbi Boubchir** (Lead Organizer)
  *Associate Professor, LIASD research Lab., Department of Computer Science, University of Paris 8, France*
- **Boubaker Daachi** (Co-organizer)
  *Full Professor, LIASD research Lab., Department of Computer Science, University of Paris 8, France*

**Contact and information**

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