5th IEEE Global Conference on Signal & Information Processing

November 14 - 16, 2017, Montreal, Canada

http://www.ieeeglobalsip.org/

Symposium on Advanced Bio-signal Processing for Rehabilitation & Assistive Systems

Call for Papers

General Co-Chairs:
Arash Mohammadi, Concordia University
Rajni V. Patel, Western University

Technical Co-Chairs:
Mahdi Tavakoli, University of Alberta
S. Farokh Atashzar, Western University
Mahya Shahbazi, Western University

Based on official statistics, the world's population is aging rapidly and this trend will increase the incidence rate of movement disorders. Improving medical care is likely to increase survival rates and reduce hospital costs. However, it will result in even more patients in need of Assistance, Rehabilitation and Assessment (ARA) services. Patients with age-related movement disorders typically experience permanent or long-lasting disabilities and often require labor-intensive ARA services as early as possible and for extended periods. The result is that, with a system that is under-resourced, more patients are sent home while still suffering from major functional deficits. One potential solution is to develop smart mechatronic technologies that (a) provide safe, optimal, smart, effective and affordable means of neurorehabilitation; and (b) assist and assess patients in performing activities of daily living. Bio-signal processing is considered as the heart of modern mechatronic and robotic technologies, designed for delivering appropriate ARA services. Advanced and real-time processing of physiological signals (such as: EEG, EMG, eye gaze, body movements, and speech) can open new doors to not only enhance the effectiveness of mechatronic rehabilitation, assistive and assessment systems, but also to enable alternative treatments for patients who cannot use conventional technologies and techniques due to the severity of their condition. In this regard, the objective of this symposium is to bring together new techniques/technologies that augment the capabilities of conventional neuro-rehabilitation, assistive and assessment systems using signal processing solutions. Topics of interest include but are not limited to:

- Signal Processing for Rehabilitation, Motor Assessment and Assistive Systems
- Brain-computer Interfaces
- Augmented Haptic Rehabilitation Systems
- Multi-modal Sensing for Mobile and Tele Health
- Signal Processing for Multilateral Rehabilitation
- Signal Processing for Wearable Health Technologies
- Intelligent Robotic & Mechatronic Rehabilitation Systems
- Signal Processing for Cooperative Rehabilitation Therapy
- Signal/Video processing for Tele-rehabilitation
- Machine learning and Intelligent Mechatronic Systems for Motor Rehabilitation, Assessment and Assistance

Paper Submission: Prospective authors are invited to submit full-length papers (up to 4 pages for technical content including figures and possible references, and with one additional optional 5th page containing only references) and extended abstracts (up to 2 pages, for paper-less industry presentations and Ongoing Work presentations) via the GlobalSIP 2017 conference website. Manuscripts should be original (not submitted/published anywhere else) and written in accordance with the standard IEEE double-column paper template. The accepted abstracts will not be indexed in IEEE Xplore, however the abstracts and/or the presentations will be included in the IEEE SPS SigPort. Accepted papers and abstracts will be scheduled in lecture and poster sessions.

Important Dates:

- **May 15, 2017**: Paper submission due
- **June 30, 2017**: Notification of Acceptance
- **July 22, 2017**: Camera-ready papers due

For inquiries please contact: Arash Mohammadi (arashmohammadi@concordia.ca), Farokh Atashzar (satashza@uwo.ca), Mahya Shahbazi (mshahba2@uwo.ca), Mahdi Tavakoli (tavakoli@ece.ualberta.ca), or Rajni Patel (rvpatel@uwo.ca).