

## Special Session Organizers

### Dr. Arash Mohammadi

Concordia Institute for Information  
System Engineering (CIISE)  
Concordia University, Montreal,  
QC, Canada

**E-mail:**

[arash.mohammadi@concordia.ca](mailto:arash.mohammadi@concordia.ca)

### Dr. S. Farokh Atashzar

Canadian Surgical Technologies &  
Advanced Robotics (CSTAR)  
Western University, London, ON,  
Canada

**E-mail:**

[satashza@uwo.ca](mailto:satashza@uwo.ca)

### Dr. Mahya Shahbazi

Canadian Surgical Technologies &  
Advanced Robotics (CSTAR)  
Western University, London, ON,  
Canada

**E-mail:**

[mshahba2@uwo.ca](mailto:mshahba2@uwo.ca)

### Dr. Mahdi Tavakoli

Department of Electrical &  
Computer Engineering  
University of Alberta, Edmonton,  
AB, Canada,

**E-mail:**

[tavakoli@ece.ualberta.ca](mailto:tavakoli@ece.ualberta.ca)

### Dr. Konstantinos N. Plataniotis

Department of Electrical &  
Computer Engineering  
University of Toronto, Toronto, ON,  
Canada,

**E-mail:**

[kostas@ece.utoronto.ca.ca](mailto:kostas@ece.utoronto.ca.ca)

### Dr. Rajni V. Patel

Department of Electrical &  
Computer Engineering  
Western University, London, ON,  
Canada

**E-mail:**

[rvpatel@uwo.ca](mailto:rvpatel@uwo.ca)



## SMC 2017



## SPECIAL SESSION CALL FOR PAPERS

### BIO-SIGNAL PROCESSING FOR MOVEMENT ASSESSMENT, NEURO-REHABILITATION AND ASSISTIVE TECHNOLOGIES

2017 IEEE International Conference on Systems, Man, and  
Cybernetics, October 5–8, 2017, Banff Center, Banff, Canada

<http://www.smc2017.org>

The population of senior adults worldwide over the age of 60 is expected to more than double by 2050. This trend (i.e. society aging) will increase the incidence rate of age-related movement disorders which typically cause long-lasting disabilities. This category of patients often requires labor-intensive Assessment, Rehabilitation and Assistive (ARA) services as early as possible and for extended periods. This places a significant burden on the healthcare system. One solution is to develop smart mechatronic systems that (a) can intelligently analyze and assess the condition, (b) track movements of patients, (c) provide safe, optimal, effective and affordable means of neurorehabilitation and therapy; and (d) assist patients in performing Activities of Daily Living (ADLs). Bio-Signal Processing (B-SP) is the heart of the above-mentioned mechatronic solution to enhance delivery of ARA services. For example, B-SP is needed to conduct real-time and accurate analysis of the patient's movement and to guarantee compatible, compliant, appropriate, and safe interaction between the human-in-need (e.g., the patient), the mechatronic system (e.g., a robotic system), and the surrounding environment. The objective of this special session is to collect novel techniques that augment the capabilities of mechatronic technologies with intelligent signal processing algorithms to conduct accurate assessment of a patient's performance, analyze the effectiveness of a delivered therapy, intelligent diagnosis of a condition, neurorehabilitation and/or assistance in performing ADLs.

#### Topics of interest to the special issue include but are not limited to

- Bio-Signal Processing for Mechatronic Rehabilitation Systems
- Machine Learning for Motion Assessment, NeuroRehabilitation and Therapy
- Smart Assistive Technologies
- Brain-Computer Interface for NeuroRehabilitation and Assistive Technologies
- Intelligent Movement Assessment, Analysis and Monitoring
- Multimodal Human-robot & Human-telerobot interaction for Health Technologies
- Cybernetics in Rehabilitation and Diagnostic Sciences

#### Important Dates

April 7, 2017	Deadline for submission of contributions to the Special Sessions
May 25, 2017	Acceptance notification for Special Session papers
July 9, 2017	Final camera-ready papers due for Special Sessions
August 5, 2017	Deadline for early registration
October 5-8, 2017	Conference dates

**Note:** Accepted papers that are not **PHYSICALLY** presented at SMC 2017 will be excluded from the IEEE Xplore.