IEEE/ASME TRANSACTIONS ON MECHATRONICS

Call for Papers

Focused Section on
Adaptive Learning and Control for Advanced Mechatronics Systems

Mechatronics, as synergistic integration of precision mechanical engineering with advanced sensing, control and computer science and technologies, play an important role in the real world. Much research interest has been attracted to advanced mechatronics systems for their promising application insights in a variety of practical situations. Mechatronics, which cooperate with or substitute human operators to perform a growing variety of tasks, are getting increasingly complex in order to achieve difficult operations with comprehensive utilization of sensors, vision modules, actuators, controllers, etc., and, the intelligent algorithms with learning ability running behind. Nowadays, mechatronics tasks that in a wide range of fields require intelligent and flexible actions in unstructured/fast-changing working environments, which brought great challenges on decision, planning and control of advanced mechatronics systems. On the other hand, the learning-based methods have shown their vitality on perception, recognition, situation understanding, communication and trajectory planning, etc. with a great amount of proved successful applications in all cross disciplines. Therefore, it is expected that mechatronics systems could be greatly improved with full integration of adaptive learning and control techniques, and the challenges brought by various mechatronics applications could also push the development of more powerful adaptive learning and control methods.

The purpose of this focused section is to create a forum for scientists, engineers and practitioners throughout the world to present the latest theoretical and technological achievements in adaptive learning and control for advanced mechatronics systems. Papers presenting newly emerging fields and applications are especially welcome. Topics to be covered in this focused section include, but not limited to, the following:

- Adaptive learning based modelling, identification, optimization and control for advanced mechatronics systems;
- Deep learning based digital control, servo control, sequence and process control for mechatronics systems;
- Reinforcement learning control of mechatronics systems;
- Learning based decision, cooperation, environments and situation understanding;
- Self-organized communication for mechatronics systems based on learning methods;
- Intelligent computation on health monitoring and supervision of advanced mechatronics systems;
- Learning based cooperative control of multiple mechatronics systems.

Manuscript Preparation:
Papers must contain original contributions and be prepared in accordance with TMECH standards. Instructions for authors are available online at: http://www.ieee-asme-mechatronics.org

Manuscript Submission:
Manuscripts should be submitted through the online submission service available at: http://mc.manuscriptcentral.com/tmech-ieee. The cover letter should report the following statement: "*This paper is submitted for possible publication in the Focused Section on Adaptive Learning and Control for Advanced Mechatronics Systems*". All manuscripts will be subjected to peer review process.

Important Dates:

Paper Submission	May 31, 2021
Completion of First Review	August 1, 2021
Submission of Revised Papers	September 15, 2021
Completion of Final Review	November 15, 2021
Submission of Final Manuscripts and Copyright Forms	December 31, 2021
Publication	February, 2022

Lead Guest Editor:

Prof. Huijun Gao
Research Institute of Intelligent Control and Systems
Harbin Institute of Technology, Harbin, China Email:
hjgao@hit.edu.cn

Guest Editors:

Prof. Bin Liang
Department of Automation
Tsinghua University, Beijing, China
Email: bliang@tsinghua.edu.cn

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Department of Mechanical Engineering
University of Victoria, Victoria, BC, Canada
Email: yshi@uvic.ca

Prof. Masayoshi Tomizuka
Department of Mechanical Engineering
University of California, Berkeley, CA, USA
Email: tomizuka@me.berkeley.edu

Prof. Roberto Oboe
Dipartimento di Tecnica e Gestione dei Sistemi Industriali
Universitàdi Padova , Vicenza, Italy
Email: roberto.oboe@unipd.it

Dr. Sen Wang
Institute of Sensors, Signals and Systems
Heriot-Watt University, Edinburgh, United Kingdom
Email: sen.wang@cs.ox.ac.uk