

Special Session on

“Advances on Learning and Control for Intelligent Robots”

Organized by

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Call for Papers

With the ability of cooperate with or substitute human operators to perform a growing variety of tasks, robots are getting increasingly intelligent and 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 are playing an increasingly important role. Nowadays, robot 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 robot systems. On the other hand, the learning-based methods have shown their vitality on perception recognition, recognition, situation understanding, communication and trajectory planning, etc., with a great amount of proved successful applications all cross disciplines. Therefore, it is expected that intelligent robots could be greatly improved with fully integration of learning and control techniques, and the challenges brought by various robot applications could also push the development of more powerful learning and control methods.

In an effort to disseminate current learning and control advances for intelligent robot applications, a special issue in this area is proposed, which will provide a platform for scientists, engineers and industrial practitioners to present their latest theoretical and technological advancements in the design/development of intelligent robot systems, learning based methods for robot control, modelling, planning, perception, decision, and various related applications of these techniques.

Topics of the Session:

The topics of this special issue include, but are not limited to the following areas:

- Modelling, planning, parameter identification for intelligent Robots;
- Learning based perception, recognition, guidance, navigation, mapping and localization;
- Intelligent decision, cooperation, environments and situation understanding;



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- Self-organized communication for robots based on learning methods;
- Robot optimal control, adaptive control and system optimization;
- Intelligent computation on health monitor and supervision of complex robot;
- Fast, reliable and low-cost intelligent computation and engineering applications for robots