



# 6<sup>th</sup> IEEE International Conference on Automation Science and Engineering

August 21-24, 2010, Toronto, Ontario, Canada



## Call for Papers

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### Important Dates

**Jan. 15:** Special session proposal submission due

**Feb 1:** Special session acceptance notification

Tutorial/Workshop proposal submission due

**Feb 12:** Paper submission deadline

**March 1:** Tutorial and Workshop acceptance notification

**May 15:** Paper acceptance notification

**May 30:** Conf registration opens

**June 15:** Final paper submission deadline

**August 21:** Tutorials & Workshops

**August 22-24:** Main conference events

The 6<sup>th</sup> annual IEEE Conference on Automation Science and Engineering (IEEE CASE), sponsored by the IEEE Robotics and Automation Society (RAS), will be held on **August 21-24, 2010 in Marriott Eaton Centre Hotel, Toronto, Ontario, Canada**. CASE is the flagship automation conference of the IEEE RAS. It constitutes the primary forum for cross-industry, multidisciplinary research in automation. The goal of the conference is to provide a broad coverage and dissemination of foundational research in automation among researchers, academics, and industry practitioners.

The theme of the conference is on the **partnership for automation**. With the rapid advances of processing, communication, and sensing technologies, the science and engineering of automation is finding expanding ranges of applications. This conference will aim to emphasize the partnership, connection, and synergy between **industrial applications** (e.g., semiconductor manufacturing, life science automation, aerospace automation, renewable energy, biomedical systems, and micro and nano systems) and **algorithmic and analytic foundation** (planning, scheduling, manipulation, sensing and localization, and application domains). Strong industrial participation is sought to highlight the diversity and commonalities of industrial automation needs and solutions. Special sessions will be organized in both thematic algorithmic and application areas. Topics of interest include, but are not limited to:

#### Manufacturing Automation

- Green automation
- Information based manufacturing
- Industrial robotics, material handling
- Distributed manufacturing

#### Design Automation

- system modeling and simulation
- multidisciplinary design optimization
- model reduction for complex systems
- optimal sensor/actuator placement

#### Information Automation

- Data analytics
- Logistics and supply chain
- Web, Data and Text Mining
- Intelligent Search

#### Algorithm and Theory

- Discrete-event and hybrid systems
- Planning, coordination and scheduling
- Machine learning
- Multi-agent & distributed control
- Image processing and machine vision
- Distributed sensor/actuator network
- Robust manipulation and assembly
- Services science and engineering
- Fault analysis, detection, mitigation

The technical program of IEEE CASE will consist of plenary talks, paper presentations, special sessions, and workshops/tutorials on cutting edge and industry oriented topics, workshops and tutorials. **Best Conference Paper, Best Application Paper, and Best Student Paper** will be selected by the CASE 2010 Awards Committee, based on the reviews received and the presentation in a special award finalist session.

For submission of papers and proposals, please, follow the link:

<http://ras.papercept.net/conferences/scripts/start.pl>

Author(s) should submit full papers electronically in double column PDF format. All papers will be peer-reviewed, and the selected ones will be published in the CD-ROM Proceedings to be indexed by Elsevier databases Engineering Index (EI) and Compendex. Six pages are allowed per paper.

CASE is the companion conference of the *IEEE Transactions on Automation Science and Engineering*. High quality CASE papers will be recommended for publication in the journal.

#### Life Science Automation

- High throughput screening & drug discovery
- Automated cell culturing
- Forensic science Bioinformatics

#### Precision Automation

- MEMS/NEMS
- Optomechatronics systems
- Micro and nano-assembly
- Thermal management

#### Biomedical Automation

- Hospital and medical robotics
- Automated diagnosis & treatment
- Robotic surgery
- Health care management

#### Applications

- Semiconductor manufacturing
- Aerospace manufacturing
- Composite manufacturing
- Fuel cell, battery, photovoltaic
- Military and security
- Service robotics
- Financial engineering
- Construction automation
- Agricultural automation