ROBOTICS: SCIENCE AND SYSTEMS

June 8-11, 2005
Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A.
www.roboticsconference.org

Submissions are solicited for a new conference that spans all areas of robotics. The conference will bring together researchers working on algorithmic or mathematical foundations of robotics, robotics applications, and analysis of robotic systems. The conference will include invited talks as well as oral and poster presentations of refereed papers. It will be single track and highly selective. The main conference will be followed by one day of workshops.

INVITED SPEAKERS:

Nicholas Ayache, INRIA   Surgery Simulation with Geometric, Physical, and Physiological Models of Organs

Cynthia Breazeal, Massachusetts Institute of Technology   Socially Interactive Robots that Assist, Entertain, and Learn

Heinrich Bülthoff, Max Planck Society for Biological Cybernetics   Multimodal Sensor Fusion in Man and Machine

Robert Full, University of California at Berkeley   Biological Inspiration in the Design of Legged Robots, Artificial Muscles, and Feet

Geoffrey Hinton, University of Toronto   Learning to Use a Body

Takeo Kanade, Carnegie Mellon University   Computer Vision: Redoing it as a Gigantic Search Problem

Mitsuo Kawato, Advanced Telecommunications Research Institute   Connecting Brain and Humanoids by Computational Neuroscience

Daniel Koditschek, University of Pennsylvania   Programming Work

Erik Winfree, California Institute of Technology   Creating a DNA World

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Submissions:

Papers are solicited in all areas of robotics, including (but not limited to) the following:
- Advanced Mechanisms: Mechanism Design, Legged Systems, Hands, Snakes, Reconfigurable Robots, MEMS/NEMS, Nanobots, Biomimetic Robotics
- Manipulation: Kinematics/Dynamics, Mobile Manipulation, Contact Modeling, Force/Grasping, Control
- Human Centered Systems: Humanoids, Interfaces, Haptics, Tactile, Telerobotics, Human Augmentation, Assistive Robotics
- Planning and Algorithms: Motion Planning, Mission Planning, Assembly Planning, Coordination, Complexity and Completeness, Computational Geometry, Robotics and Molecular Biology, Simulation
- Field Application and Systems
- Perception: Vision, Remote Sensing, Tactile Perception, Range Sensing
- Estimation and Machine Learning: Reinforcement Learning, Bayesian Techniques, Graphical Models, Imitation Learning, Programming by Demonstration, Diagnostics
- Mobile Robotics: Mapping, Localization, Collision Avoidance, Exploration, Mobile Robot Control High-Speed Navigation
- Distributed Systems: Sensor Networks, Multi-Robot Systems, Medical Robotics, Underwater Robotics, Aerial/Space Robotics, Robotics and Art, Robot Soccer

Important Dates:

Deadline for Submission of Papers: January 17, 2005
Deadline for Workshop Proposals: January 31, 2005
Acceptance Announcements: March 31, 2005
Conference: June 8-11, 2005
   - Technical Sessions and Posters: June 8-10, 2005
   - Workshops: June 11, 2005

Review Criteria:

Submissions will be refereed on the basis of technical quality, novelty, significance, and clarity. Each submission will be thoroughly reviewed by at least three program committee members. Submissions will then be discussed at an in-person senior program committee meeting. There will be an opportunity after the meeting to revise accepted manuscripts.

Paper Format:

Submissions may be up to eight pages in length, including figures and references, using a font no smaller than 10 point. All text and figures must fit within a 9 inch by 6.5 inch rectangle on a page formatted in double-column format. Submissions violating these guidelines will not be considered. A LaTeX template will be available at the conference Web site www.roboticsconference.org.

Submission Instructions:

The conference accepts only electronic submissions in PDF format. The conference web site will accept electronic submissions from December 14, 2004, until midnight, January 17, 2005, Pacific time.

General Chair

Sebastian Thrun, Stanford University

Program Co-Chairs

Stefan Schaal, University of Southern California
Gaurav Sukhatme, University of Southern California

Local Arrangement Co-Chairs

John Leonard, Massachusetts Institute of Technology
Nicholas Roy, Massachusetts Institute of Technology

Workshop Co-Chairs

Eric Klavins, University of Washington
Sven Koenig, University of Southern California

Publicity Chair

Oliver Brock, University of Massachusetts Amherst

Senior Program Committee

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Oliver Brock, University of Massachusetts Amherst
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