

The ITEE Committee, EA Queensland, and IEEE-CS/R&A Chapter
present:

Robots and RT Systems in Human Environments

Date: 26 October 2006

Time: 6:00pm (Refreshments will be provided from 5:30 pm)

Venue: Hawken Auditorium, Level 1, 447 Upper Edward Street, Brisbane.

Note: the Lecture will be followed by the ITEE AGM. You are all invited to attend.

More than 45 years have passed, since robots have been introduced for industrial applications as industrial robots. Robotics technology or RT, which has been matured enough to be applied to several systems in our daily life, is expected to be one of the key technologies for the aging society. In this presentation, we consider how the robotics technology has been and will be utilized in human environments.

The word “robotics” means both the robot science and the robot engineering, although emphasis has been put on the scientific part in academia. Actually, the engineering part has also contributed a lot to produce many systems in our daily life. Recent home appliances, automobile technologies, power assisted devices, etc. will be introduced as examples of systems with robotics technology inside. These examples show how the robotics technology has brought us new attractive but relatively simple applications. The human-robot interaction is one of the key issues to bring the robotics technology into human environments further.

We introduce a mobile robot helper and distributed robot helpers as examples of human-robot interaction and coordination for handling an object. A walking helper and a wearable walking helper are introduced as robotic assistive devices.

RT walker is introduced as an example of a passive realization of robotic walking assist systems. Finally, a dance partner robot, which plays a role of a female dancer, is introduced as a research platform for advanced human-robot interaction and coordination. The ballroom dance includes a lot of challenging problems. The dance is usually led by a male dancer, and a female dancer has to estimate the following step through the physical interaction with the male dancer in order to continue to dance. The dance partner robot has knowledge of a dance, estimates the next step led by a male dancer, and generates the step in coordination with the male dancer. The research on the dance partner robot will bring us new ideas of human-robot interaction and coordination. Some of the recent results will be introduced to show how the robotics for the dance partner robot is important for future robotic systems.

Speaker: Kazuhiro Kosuge, Department of Bioengineering and Robotics, Tohoku University, Japan.

Kazuhiro Kosuge is a Professor in the Department of Bioengineering and Robotics. He received the B.S., M.S., and Ph.D. in control engineering from the Tokyo Institute of Technology in 1978, 1980, and 1988 respectively. From 1980 through 1982, he was a Research Staff in the Production Engineering Department, Nippon Denso Co., Ltd. (current DENSO Co., Ltd.). From 1982 through 1990, he was a Research Associate in the Department of Control Engineering at Tokyo Institute of Technology. From 1989 to 1990, he was a visiting scientist, Department of Mechanical Engineering, Massachusetts Institute of Technology. From 1990 to 1995, he was an Associate Professor at Nagoya University. From 1995, he has been at Tohoku University. For more than 25 years, he has been doing research on robotics and various robot control problems. He has over 200 technical publications in the area of robotics and its applications to the real world. Currently he is an AdCom member of IEEE Robotics and Automation Society, and the Editor in Chief of Advanced Robotics. He was a Vice President of IEEE Robotics and Automation Society (1998-2001), a member of the board of the trustees of the Robotics Society of Japan (1993-1994, 2001-2002), and a member of the board of trustees of the Society of Instrumentation and Control Engineers (1999-2000). He also served several academic meetings, which include the 1995 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'95) as a Program Co-chair, ICRA'95 in Nagoya as a Steering Committee Vice-Co-chair, a Program Co-chair of the IROS'98, SMC2001 as a Program Co-chair, ICAR2003 as a Program Co-chair, and AIM2003 as a Program Co-chair, and as the General Chair of IROS2004. He received the JSME Awards for the best papers from the Japan Society of Mechanical Engineers in 2002 and 2005, the RSJ Award for the best papers from the Robotics Society of Japan in 2005, the Original Paper Award, FANUC FA and Robot Foundation in 2004 and 2006, the Best Paper Award of IROS'97, and the Outstanding Scientific Achievement Award from the Robotics and Mechatronics Division of the Japan Society of Mechanical Engineers in 1999. He is an IEEE Fellow and a JSME Fellow.

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Yes, I will be attending “Robots and RT Systems in Human Environments”
On 26 October 2006.

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- Registrations can be made online at www.qld.engineersaustralia.org.au/events
- Fax your registration to (07) 3832 2101
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