Collaborative Robotics:
Communication and Social Acceptance

Seminar presentation and Workshop
When: Thursday 15th March: 1-2pm and 2-3pm
Where: 75TR 3114 Continuum Meeting Rm, 75 Talavera Road, Macquarie Park, NSW 2113
(Next to the Macquarie University Hospital)

This project aims to lay the foundation for interdisciplinary collaborative opportunities between Macquarie University and Kyoto Institute of Technology (Japan) concerning communication robots with AI capabilities. The focus of research is on cross-cultural differences in the social reception of robots' communicative performance, especially with regard to Japan and Australia, and on strategies toward developing AI functionality for a communication robot in cross-cultural situations. Professor Natsuki Oka, a computer and robotics scientist and a human sciences researcher at Kyoto Institute of Technology, will present the findings from his social robot experiments and conduct a workshop for discussion. It is an exploratory event to gather feedback from the audience and participants, hosted by the MQ Mechatronics Group (led by Professor Subhas Mukhopadhyay, School of Engineering) in conjunction with the Department of Media, Music, Communication, and Cultural Studies. All are welcome.

1. Seminar presentation and discussion (1pm-2pm)

Experimental Study on Social Acceptability of Robots in Japan

Professor Oka will introduce experiments on the social acceptability of robots that his team have done so far and discuss the possible impact of Japanese culture and society on robot acceptance. The experiments and the results include: (1) **Social acceptance of erroneous robots:** Participants felt familiarity with a robot that failed. However, the failed robot did not necessarily get more cooperation. (2) **Synchronizing telepresence robot:** A telepresence robot was designed to autonomously move in sync with the music presented to the operator. The synchronized motion strengthened the following two senses of the operator: (A) the feeling that the movement of the robot is the movement of the operator himself/herself; (B) the feeling that the operator is in the same room as the robot. (3) **Robot selectively reacting to Infant-directed speech:** Talking to a robot with a high-pitched voice, which is one of the features of infant-directed speech, tended to improve impressions of the robot.

2. Workshop (2pm-3pm)

Social Acceptance of Erroneous Robots: Making a Plan for Psychological Experiments

In this workshop, Professor Oka will introduce his research on the interaction between an erroneous robot and a human, referring to Anki Cozmo, an AI toy robot. The basic principles for psychological experiments, in terms of hypotheses, control conditions, psychological index, physiological index, and behavior index, will be presented. Participants will consider ways to devise an interaction experiment using the robot.

Biography

Professor Natsuki Oka teaches in the Faculty of Information and Human Sciences, Kyoto Institute of Technology in Japan. He received the B. E. degree in mathematical engineering and information physics from the University of Tokyo in 1979. After working at Shimadzu Corporation, he was appointed an assistant professor at the University of Tokyo in 1983 and since then has consistently engaged in research on artificial intelligence and cognitive science. He was employed at Panasonic Corporation in 1984 and went to Institute for New Generation Computer Technology (ICOT) from 1985 to 1990. He was awarded a doctorate degree in engineering from Nagoya Institute of Technology in 2000. He joined Kyoto Institute of Technology as a professor in 2003. His current main research interest is in human-agent interaction, especially in robots that learn through daily interaction with people. He is an editorial member of the Japanese Cognitive Science Society and has been appointed general chair of Human-Agent Interaction 2019.

For inquiries about this event, please email Dr Yuji Sone (yuji.sone@mq.edu.au) or Prof. Subhas Mukhopadhyay (Subhas.Mukhopadhyay@mq.edu.au).

*This project is supported by the Japan Foundation, Sydney through a local grant.

MACQUARIE University
SYDNEY·AUSTRALIA

IEEE INSTRUMENTATION & MEASUREMENT SOCIETY®

JAPANFOUNDATION
BRINGING JAPAN TO YOU