

Exacting HRI 2025 workshop

Keynote presentation title, bio, and abstract

Keynote 1: Prof. Takayuki Kanda

Title

Social robots in public space

Bio

[Takayuki Kanda](#) is a professor in Informatics at Kyoto University, Japan. He is also a Visiting Group Leader at ATR Intelligent Robotics and Communication Laboratories, Kyoto, Japan. He received his B. Eng, M. Eng, and Ph. D. degrees in computer science from Kyoto University, Kyoto, Japan, in 1998, 2000, and 2003, respectively. He is one of the starting members of Communication Robots project at ATR. He has developed a communication robot, Robovie, and applied it in daily situations, such as peer-tutor at elementary school and a museum exhibit guide. His research interests include human-robot interaction, interactive humanoid robots, and field trials.

Abstract

Social robots are coming to appear in our daily lives. Yet, it is not as easy as one might imagine. We developed a human-like social robot, Robovie, and studied the way to make it serve for people in public space, such as a shopping mall. On the technical side, we developed a human-tracking sensor network, which enables us to robustly identify locations of pedestrians. Given that the robot was able to understand pedestrian behaviors, we studied various human-robot interaction in the real-world. We faced with many of difficulties. For instance, the robot failed to initiate interaction with a person, and it failed to coordinate with environments, like causing a congestion around it. Toward these problems, we have modeled various human interaction. Such models enabled the robot to better serve for individuals, and also enabled it to understand people's crowd behavior, like congestion around the robot; however, it invited another new problem, robot abuse. I plan to talk about a couple of studies in this line, and some of successful services provided by the social robot in the shopping mall, hoping to provide an insight about what the social robots in public space in a near future will be.

Keynote 2: Dr. Emily Collins

Title

Human Interactions and their Implications for Trustworthy, Ethical and Responsible RAI (Robotics and AI)

Bio

[Dr. Emily C. Collins](#) holds a Dame Kathleen Ollerenshaw Fellowship at The University of Manchester, UK, in the Department of Computer Science. She is an interdisciplinary

Human-Robot Interaction (HRI) researcher, and a British Psychological Society Chartered Psychologist. Dr. Collins specialises in discipline agnostic robotics, with her expertise spanning biomimetic, brain-based, therapeutic, and industrial nuclear robotics; HRI methodology development; and ethical and theoretical consideration of Robotics and AI (RAI). Her key research themes include trustworthiness and verification; responsibility and accountability; and the centrality of human psychology and socio-political factors to effective RAI deployment in the real world.

Abstract

Increasing deployment of advanced technology in daily lives - from embodied robotics to AI algorithms - continues to raise ever more complex questions about the ethical implications of their use, and what that means in practical terms for trustworthy autonomous systems' deployment.

One approach is to frame the debate around what we mean by Responsible Robotic and AI (RAI) use. In this talk, Dr. Collins will argue that we need to place an understanding of human interactions as central to our understanding of RAI use in order to best understand the consequences of their short or long-term use. Who are the users? Who are the employers of those users? Who deploys the technology? And what do these mediating relationships have to do with who is ultimately responsible for what happens when we use technology in real-world, applied settings? Asking these practical questions get us closer to understanding what we mean by trustworthy, ethical and responsible RAI.

Dr. Collins will discuss practical experimental examples highlighting the need for trustworthy RAI in a variety of disparate environments. This will be framed around her novel approach to studying RAI, which alongside engineering testing and validation, also factors for the human relationship with the person, employer, or government, that has facilitated the RAI use.

Keynote 3: Dr. Navinda Kottege

Title

Human-Robot Teaming in Extreme Environments at the DARPA Subterranean Challenge

Bio

[Dr Navinda Kottege](#) is the Research Director of the Cyber-Physical Systems Research Program, responsible for R&D in Robotics, Computer Vision and Distributed Sensing Systems at CSIRO's Data61. He was the Principal Investigator for the CSIRO Data61 team that competed and won the US\$1million second place prize at the DARPA Subterranean Challenge finals in September 2021. Navinda is a senior member of the IEEE, a member of the ACM and an Adjunct Professor at both Queensland University of Technology and The University of Queensland.

Abstract

In this talk, I will introduce the DARPA Subterranean Challenge that was setup as a global robotics competition to deploy robot teams into previously unknown and challenging subterranean environments. I will then describe how Team CSIRO Data61 prepared for this challenge and competed under constrained condition during the COVID-19 pandemic. Through this, I will be highlighting how successful human-robot teaming under extreme

conditions helped Team CSIRO Data61 tie for the top score and go on to win the second-place prize ahead of some of the top robotics labs in the world.

Keynote 4: Dr. Bahar Irfan

Title

Long-Term Human-Robot Interaction in the Real World: Aligning Robots to Expectations

Bio

[Dr. Bahar Irfan](#) is a Postdoctoral Researcher at KTH as a Digital Futures fellow. Her research focuses on creating personal robots that can continually learn and adapt to assist in everyday life.

She has a diverse background in robotics, from personalization in long-term human-robot interaction during her PhD at the University of Plymouth and SoftBank Robotics Europe as a Marie Skłodowska-Curie Actions fellow, to user-centred task planning for household robotics, and motion and behavior planning for robot football during her MSc in computer engineering, and building educational robots for BSc in mechanical engineering at Bogazici University.

Abstract

Long-term human-robot interaction in the real world presents unique challenges, from maintaining user engagement to ensuring robots remain useful over time. This talk will explore these challenges and present strategies for building lasting, meaningful interactions, with a focus on adaptation and the potential of foundation models. I will share insights from a 2.5-year deployment of cardiac rehabilitation robots that led to significant health improvements, as well as findings on older adults' expectations for conversational robots in daily living. By combining practical lessons with recommendations for integrating foundation models, this talk will explore directions towards shaping robots into valuable long-term companions.