Embodied Communication of Goals and Intentions

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1 Abstract

This workshop aims to bring together researchers from different fields working on robots that communicate with humans. The focus is on human-robot interaction and on embodied communication of goals and intentions. It is assumed that there is a strong influence of action performance, gazing behaviour, spatial arrangement and spatial flow of action to infer goals and intentions from humans. Learning and understanding in a social context should not be considered as an one-sided process. Thus, it is interesting to study situations from the perspective of both the learner's and the teacher's perspective. In this workshop, the intention is to investigate the challenges posed by such complex interaction systems from different research perspectives. Therefore, we will host talks given by researchers with different backgrounds. The aim is to report on the state-of-the-art and promote the exchange of ideas on how to enable a robot to interact with a human in a more natural way so that it can directly learn from human instruction.

2 List of topics

- Goal extraction
- Embodied communication
- Mutual Gaze
- Face-to-Face Communication
- Turn-taking in HRI
- Human-aware navigation
- Spatial prompting
- Human robot spatial interaction

3 Organisers

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4 Intended audience

We aim to bring together an audience which represents multiple relevant disciplines in robotics, artificial intelligence, natural language processing. This would include people building interactive robotic systems; people developing approaches to human-robot interaction; and people studying the impact and role of feedback and verbalisation on learning and interaction. Our goal is to establish an exchange of ideas between scholars and practitioners in the field, also encouraging PhD students to present their work to a specialist audience. The members of the program committee will ensure a high standard for the accepted papers.

5 Submissions

The workshop program will consist of invited keynotes, oral presentations of peer-reviewed papers and a video session, along with time for discussions. Potential participants are invited to submit full papers with 6 pages, short position papers with 2-4 pages or video submissions with a 2-page description). Submissions will be accepted in PDF format only, using the ICSR formatting guidelines (http://www.icsr2013.org.uk/paper.php) and including author names. Authors should send their papers to icsr2013w2@gmail.com. All submissions will be peer-reviewed. Authors of selected papers will be invited to submit extended versions of their paper in an upcoming journal special issue.

6 Invited speakers

- *Kerstin Dautenhahn* (University of Hertfordshire)
  Collaboration and interaction with socially interactive robot companions: The talk will discuss the role of embodied communication and interaction in human-robot interaction scenarios in an assistive context. Examples of research on robot companions will be presented, including two concrete application scenarios: companion robots in robot-assisted play for children with autism and home companion robots meant to assist people in their own homes. The emphasis of the talk will be on modes and modalities of interaction in order to create engaging scenarios.

- *Marc Hanheide* (Lincoln University)
  Enabling a robot to move among humans is not only a question of safety, but also of non-verbal communication of intentions and goals. The spatially interacting partners (humans and robots) continuously monitor and signals these by means of motion trajectories, body orientation, facial expressions, and gaze. In my talk, I will present our research in this area covering the understanding of communicative signals, qualitative reasoning about trajectories and our ideas on long-term adaptation of navigation patterns in human-robot spatial interaction.

- *Frank Broz* (University of Plymouth)
  Mutual gaze is an important part of face-to-face communication, both for creating feelings of social engagement and for helping to structure turn-taking in conversation. In this talk, I'll illustrate how the relationship between mutual gaze and speech can be studied using automated methods. I'll also discuss the design of a robot gaze controller that uses multimodal input to engage in mutual gaze with a human interaction partner.

7 Program committee members

- *Christian Dondrup* (Lincoln University)

- *Sascha Grifith* (Technische Universität München)

- *Lorenzo Natale* (Istituto Italiano di Technologia)

- *Ali Paikan* (Istituto Italiano di Technologia)

8 Important Dates

31 August 2013, Full/short paper submission
20 September 2013, Notification of acceptance
27 October 2013, Workshop at ICSR 2013