HYBRID SOCIETIES

Session (1):
Socially-Interactive Interfaces: Challanges and Perspectives

Date

Thursday,
July 15, 2021

Lecturer

Elisabeth André

Affiliation

Human-Centered Artificial Intelligence, Faculty of Applied Computer Science, Augsburg University, Germany

ABSTRACT

In recent years, considerable efforts have been made to improve the expressive behaviors of artificial interactive agents that encounter human users in the role of animated virtual agents, as anthropomorphic robots, or as digitally enhanced everyday objects. However, experience has shown that impressive animations in conjunction with a realistic appearance are not enough to create sustainable affective bonds with the human user. Artificial interaction partners with anthropomorphic behaviors initially benefit from the novelty effect. However, they tend to lose their appeal to the user after a short time. The desire to establish long-term relationships between machines and human users is one driving factor to simulate socially interactive behaviors in devices. In my talk, I will present an overview of the state of art in socially interactive agents. To this end, I will focus on three essential properties of socially interactive interfaces: Social Perception, Socially-Aware Behavior Synthesis, and Learning Socially-Aware Behaviors. Examples from various international and national projects from social coaching and health care will illustrate the talk. I will also analyze the limitations of current approaches and discuss directions for future development.

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Session (2):

Neuroergonomic Approaches to Human-Cyber-Physical System Integration

Date

Thursday,
July 15, 2021

Lecturer

Jochem Rieger

Affiliation

Applied Neurocognitive Psychology,
Carl von Ossietzky University of Oldenburg, Germany

ABSTRACT

A hallmark of today's human-machine interaction with 'smart' machines (aka cyber physical systems, CPS) is that most CPS are pretty inflexible when knowledge about current human states is required. While this feature may be in many cases only an annoyance, it can be become a live threatening risk in safety critical systems like (semi-) autonomous cars. However, integrating humans with CPS into H-CPS, for example by informing CPS in a beneficial way about human states and intentions, is a challenge, in particular in complex realistic settings. It requires a multifaceted and multidisciplinary approach. I will present some of our work on this question with a focus on driving. In our approach we combine human behavioral with (neuro)cognitive measurements and machine learning to gain time resolved information about human cognitive and emotional states. In a parallel line of research we work on implementing cognitive models as instantiations of psychological theory and proxies for human users. In a third research line we work on using the prediction models to inform CPS about human states, e.g. to improve the safety of the combined H-CPS. I will argue that the approach can contribute to both, our understanding of brain function in complex realistic tasks and to address the engineering problem of human-machine integration.

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HYBRID SOCIETIES

Session (3):

The Moral Element in Human-Robot Interaction

Date

Thursday,
July 15, 2021

Lecturer

Bertram Malle

Affiliation

Cognitive, Linguistic & Psychological Sciences,
Brown University, Providence, Rhode Island (USA)

ABSTRACT

Robots of the very near future will occupy roles in human communities that require them to abide by social and moral norms. I will review initial insights we have gained in preparing for and designing such norm-competent robots, present a number of psychological and technical challenges, and discuss paths to meet these challenges. I will discuss topics of norm learning, blame, justification, trust, and community and cultural variation.

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HYBRID SOCIETIES

Session (4):
Impulse Workshop: Scientific Writing

Date

Friday,
July 16, 2021

Lecturers

Anja Strobel,
Olfa Kanoun,
Martin Siefkes, Wolfgang Einhäuser-Treyer

Affiliations

Professorship for Personality Psychology and Assessment, Faculty of of Behavioural and Social Sciences

Professorship for Electrical Measurements and Sensor Technology, Faculty of Electrical Engineering and Information Technology

Professorship for German Linguistics, Semiotics and Multimodal Communication, Faculty of Humanities

Professorship for Physics of Cognition, Faculty of Natural Sciences

Chemnitz University of Technology

ABSTRACT

We invite all CRC young scientists (PhD students, associated members, PostDocs, scholarship holders) to this workshop. Four experts from different research areas will share their experiences on scientific writing and publishing, in particular under less than ideal conditions (e.g., time pressure, multi-tasking, home office, problems coordinating with co-authors etc.). They will also talk about their strategies in responding to reviewers' comments and discuss aspects of scientific writing in different fields and their implications for interdisciplinary research. Furthermore, they will highlight the perspective of journal editors when dealing with submitted papers. Questions and issues raised by the CRC young scientists will be discussed in plenary and/or smaller groups. The workshop aims to inspire your own ongoing writing, to help you with existing problems, and to fine-tune your strategies for further publications.

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HYBRID SOCIETIES

Session (5):
PhD Students Roundtable / Q & A

Date

Friday,
July 16, 2021

ABSTRACT

All young CRC researchers (PhD students, PostDocs, scholarship holders, associated members) are invited to the roundtable / Q & A session. Members of the MGK and project Z will be there as well to answer question you might have regarding the CRC, PhD theses, career expectations or related issues. This session can of course also be used to talk and exchange ideas among young scientists.

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HYBRID SOCIETIES

Session (6):

Trust and trusting vehicle automation in hybrid societies

Date

Friday,
July 16, 2021

Lecturer

John D. Lee

Affiliation

Industrial and Systems Engineering, University of Wisconsin-Madison (USA)

ABSTRACT

The rapid advance of computer and sensor technology is transforming work and society. A hybrid society is emerging where technology will transform approximately 50% of jobs. This technology may also transform leisure by dissolving the boundaries between work and rest. Nowhere are these transformations more prominent than in driving. Cyber-human interactions on the road are a microcosm of the broader hybrid society. Here I focus on two cyber-human relationships of a hybrid society: how drivers share control of a a semi-self-driving car and how pedestrians share the road with automated vehicles. Trust mediates these relationships and many others that comprise hybrid societies. Trust concerns people's attitudes about whether others will help them achieve their goals. When sharing control, automation capability is variable. When sharing the road, the goals of automation and pedestrian goals might not align. Variable capability and misaligned goals can lead to inappropriate trust and degraded interactions. Semiotics can maintain appropriate trust by revealing capability and aligning goals. Semiotics is the study of how meaning is communicated, which guides the process of trusting. Semiotics suggests control actions produce information and signal intent. This semiotic framing of control can guide designs to help drivers share control and to support pedestrians in sharing the road. More broadly, the semiotics of trusting can enhance cyber-human relationships of a hybrid society.

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