



# Summer School on Virtual Characters & Computer Game Technologies



Game technologies  
Character animation and perception  
Mobile and multi-agent systems  
Virtual and augmented reality  
Project design and prototyping  
Blog and presentation, ethics, gender

## KEYNOTES

Keynote: **Agents, robots and situated Intelligence**

Speaker: **Sean Andrist, Microsoft Research**

My goal is to enable natural language-based interactions with embodied technologies (robots and virtual agents) that can both perceive and appropriately respond to human conversational verbal and nonverbal social cues. To accomplish that goal, I explore techniques to improve an agent's awareness of the social context around it and couple that enhanced representation with behaviors that can improve the agent's task and social capabilities, user acceptance, rapport, and in general enable these technologies to be better "citizens" of the environment they are embedded within.



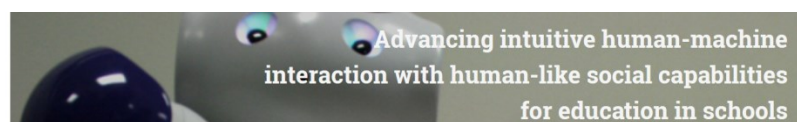
Keynote abstract:

In this keynote, I'll describe my efforts designing, building, and evaluating socially interactive technologies that are physically situated in the open world, particularly embodied virtual agents and robots. I will also describe the open-source platform I've been working on with others here at MSR, called the *Platform for Situated Intelligence*.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 765955

<http://www.animatas.eu/>



## Keynote: **Virtual characters and human perception**

Speaker: **Carol O' Sullivan, GV2, Trinity College Dublin**

Carol O'Sullivan is the Professor of Visual Computing in Trinity College Dublin, and Head of the School of Computer Science and Statistics. From 2013-2016 she was a Senior Research Scientist at Disney Research in Los Angeles, and spent a sabbatical year as Visiting Professor in Seoul National University from 2012-2013. She joined TCD as a lecturer in 1997 and served as the Dean of Graduate Studies from July 2007 to July 2010. Her research interests include graphics and perception, Computer Animation, Crowd and Human simulation. She has managed a range of projects with significant budgets during that time and successfully supervised many doctoral and post-doctoral researchers. Prior to her PhD studies, she spent several years in industry working in Software Development. She was elected a fellow of Trinity College for significant research achievement in 2003 and of the European Association for Computer Graphics (Eurographics) in 2007.



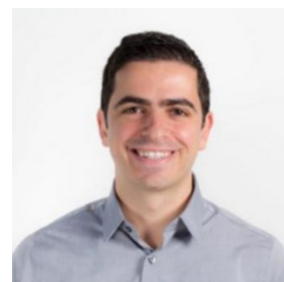
### Keynote abstract:

In the field of computer animation, a major goal is to create virtual characters with emotion, personality and individual style using a variety of methods. What insights can we use from studies of human perception to help with this task? And in return, how can realistic virtual characters be used to study the perception of real humans? In this talk, I will present past and current research on that have addressed these questions.

## Keynote: **Interactive technologies for embodied social agents**

Speaker: **André Pereira, KTH**

André Pereira is an Artificial Intelligence and Human-Robot Interaction researcher at KTH Royal Institute of Technology. Before joining KTH, André led the software team at Furhat Robotics, was a Senior Research Associate at Disney Research and a Postdoctoral Associate at the Yale Social Robotics Lab. André started his professional career at INESC-ID, IST Technical University of Lisbon where he finished his Ph.D. and worked as a Research Assistant on the topic of improving social presence in human-agent interaction. As a game designer and co-founder of *Tabletip* Games, he also designed and published several board games for different International markets. His passion is to design, develop and evaluate novel interactive experiences involving embodied social agents.



### Keynote abstract:

Virtually embodied agents and robots can already interact with humans in limited contexts but can still benefit from the usage of additional interactive technology to solve some limitations of operating in rich social environments. Tangible interfaces, game engines, multi-touch tables, mobile devices, virtual reality, and augmented reality headsets are examples of technologies that have been explored to complement interactions with embodied agents. This talk presents research that uses these technologies to promote long term engagement between people and embodied social agents.

Keynote: **Virtual reality and interactive systems**

Speaker: **Julien Castet, Head of Research, Immersion SA**



Keynote: **Developing social robotic applications with Furhat**

Speaker: **Gabriel Skantze, Furhat Robotics/KTH**

Gabriel Skantze is co-founder and chief scientist at Furhat Robotics. He is also Professor in speech technology with a specialization in dialog systems at the Department of Speech Music and Hearing at KTH, where he is leading several interdisciplinary research projects related to modelling turn-taking, joint attention and grounding in human-robot interaction.



Keynote abstract:

Furhat Robotics is developing a software and hardware platform for social robotics, with customers such as Disney Research, Honda and Merck developing social robotic applications for public spaces, health care, recruitment and entertainment. In this presentation, I will talk about what makes Furhat special compared to other social robots, and how social robotic applications can be developed with our SDK.

# ROUND TABLE CHAIRS

**Bilge Mutlu** is an Associate Professor of Computer Science, Psychology, and Industrial Engineering at the University of Wisconsin–Madison. He directs the Wisconsin HCI Laboratory and organize the WHCI+D Group. He received my PhD degree from Carnegie Mellon University’s Human-Computer Interaction Institute. His research program builds human-centered methods and principles for designing robotic technologies that help people communicate, work, and pursue personal goals and draws on a transdisciplinary design research process that combines aspects of design, computer science, and social and cognitive sciences.



**Ginevra Castellano** is an Associate Professor of in Intelligent Interactive Systems at the Department of Information Technology of Uppsala University, Sweden, where she leads the Uppsala Social Robotics Lab. Her research interests relate to intelligent interactive systems, and include social robotics, human-robot interaction and affective computing. By adopting an interdisciplinary approach grounded in principles from the social sciences, she aims to develop computational social abilities that allow robots to behave in a socially intelligent way in natural interaction with humans.





# PRESENTERS

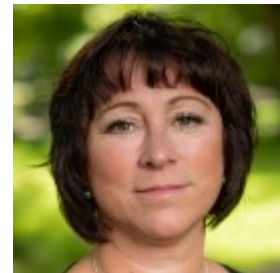
**Annika Engström** is senior communication advisor at KTH Royal Institute of Technology. Her work is devoted to enhancing communication, marketing and collaboration opportunities with academia, society and business, both nationally and internationally.



**Björn Thuresson** is the director of the Visualisation Studio VIC at KTH Royal Institute of Technology, a leading resource and collaborative centre for teaching, research and business opportunities in advanced graphics, interaction and visualisation techniques and their application domains.



**Åsa Cajander** is a professor of human computer interaction. Her research is primarily in the field of IT, learning and didactics and she has a background in leading gender equality work at the Department of Information Technology, Uppsala University.



**Karim Jebari** is a researcher at the Institute for Futures Studies with interests in issues related to political philosophy, bioethics and the philosophy of science, including work in applied ethics considering how we should relate to the risks and opportunities of technological innovation.

