International Workshop on Multimodal Virtual and Augmented Reality (MVAR 2016)

Motivation

Virtual reality (VR) and augmented reality (AR) are currently two of the "hottest" topics in the IT industries. Many consider them to be the next wave in computing with a similar impact as the shift from desktop systems to mobiles and wearables. The related hype is rooted in technological improvements (such as mass-produced high-resolution mobile displays), which resulted in cheaper, high-performant devices for the common consumer market. Examples include Facebook's Oculus Rift and Microsoft's HoloLens for VR and AR, respectively.

Despite this progress, we are still far from the ultimate goal of creating new virtual environments or augmentations of existing ones that feel and react similarly as their real counterparts. Many challenges and open research questions remain – mostly in the areas of multimodality and interaction. For example, current setups predominantly focus on visual and auditory senses, neglecting other modalities such as touch and smell that are an integral part of how we experience the real world around us. Likewise, it is still an open question how to best interact and communicate with a virtual world or virtual objects in AR. Multimodal interaction offers great potential to not only make this experience more realistic, but also to provide more powerful and efficient means of interacting with virtual and augmented worlds.

Aim and topics.

The aim of this workshop is to investigate any aspects about multimodality and multimodal interaction in relation to VR and AR. What are the most pressing research questions? What are difficult challenges? What opportunities do other modalities than vision offer for VR and AR? What are new and better ways for interaction with virtual objects and for an improved experience of VR and AR worlds?

We invite researchers and visionaries to submit their latest results on any aspects that are relevant for multimodality and interaction in VR and AR. Contributions of more fundamental nature (e.g., psychophysical studies and empirical research about multimodality) are welcome as well as more technical contributions (including use cases, best-practice demonstrations, prototype systems, etc.). Position papers and reviews of the state-of-the art and ongoing research are invited, too. Submissions do not necessarily have to address multiple modalities, but work focusing on single modes that go beyond the state-of-the-art of "purely visual" systems (e.g., papers about smell, taste, and haptics) are suited, as well.

Topics of particular interest include, but are not limited to:
- Multisensory experiences and improved immersion, including audio-visual installations, haptics/tactile, smell/olfactory sensations, taste/gustation (contributions focusing on single, but enhancing senses are welcome), perception of virtual objects, etc.
- Multimedia & sensory input, including affective computing and human behavior sensing for VR/AR, multisensory analysis, integration, and synchronization, speech, gestures, tracking for AR/VR, virtual humans and avatars, etc.
- Multimodal output, including smart and ambient environments, multimedia installations, etc.
- Interaction design & new approaches for interaction in AR/VR, incl. tangible interfaces, multimodal communication & collaborative experiences, social aspects in AR/VR interaction, gesture-based interaction design, 3D interaction, advanced interaction devices, etc.
- System design & infrastructure for multimodal AR/VR, including real-time and other performance issues, rendering of different modalities, distributed and collaborative architectures, etc.
- Applications, incl. use cases, prototypes, or prove of concepts for new and innovative approaches in serious and leisure domains.

Important dates

Workshop chairs

Wolfgang Hürst,
  Utrecht University, Netherlands
Daisuke Iwai,
  Osaka University, Japan
Prabhakaran Balakrishnan,
  University of Texas at Dallas, USA
(contact: huerst@uu.nl)

Submission & other information

Contributions should follow the style template for ICMI 2016 submissions provided on the conference's website and not exceed 6 pages (shorter contributions are welcome and will be considered as well). Submissions have to be uploaded via the ICMI submission site.
Final versions of accepted manuscripts will be published in the ACM Digital Library.
Selected contributions will be invited for publication of a special issue in a suitable journal.
Authors of accepted papers are required to present their work at the workshop.

For more information see http://mvar2016.science.uu.nl

MVAR 2016, 2ⁿᵈ call for papers, July 9, 2016