

IEEE Signal Processing Magazine

Special Issue on Immersive Communication

The vision of immersive communication is to enable natural experiences and interactions among people, objects, and environments as if they were co-located, although they may be geographically distributed. In recent years, various research communities have been developing technologies for capturing, processing, analyzing, transmitting, and rendering remote people, objects, and environments (such as room reverberation and lighting) across space and time. For example, we are on the verge of moving from traditional teleconferencing systems to telepresence systems, which is a form of immersive communication enabling effective remote collaboration through realistic audio-visual reconstruction of participants and their environments. Additional future promising applications of immersive communication include education, entertainment, health care, and industrial design.

The goal of this special issue is to bring together well-written tutorial-style papers, of a broad nature, on various aspects of signal processing with demonstrated application to immersive communication. An additional aim is to highlight the potential and special character of immersive communication, and encourage its further research as a rich field of great import in signal processing.

Scope of topics:

- Immersive video
- Immersive audio
- Signal processing and rendering to expand and enhance user experience (e.g., eye-gaze correction, virtual placement of participants using spatial audio and visual scene synthesis)
- Immersive interaction interfaces and sensors
- Multimedia network communication for immersive communication
- Systems for immersive communication

Submission Procedure:

Prospective authors should submit white papers at <http://www.ee.columbia.edu/spm/> according to the timetable below. White papers should include the authors' vision of immersive communication and the challenges they address, and should clearly articulate the relevance of the work to the theme of immersive communication. The white papers should also contain an outline, brief history, and key references, and should be no more than 2 pages in the IEEE single-space double-column format.

Schedule (all deadlines are firm, no exceptions):

White paper due:	August 1, 2009
Invitation notification:	September 15, 2009
Manuscript due:	January 15, 2010
Acceptance notification:	July 1, 2010
Final manuscript due:	September 1, 2010
Publication date:	January 1, 2011

Guest editors:

Yucel Altunbasak, Georgia Institute of Technology (yucel@gatech.edu)
John Apostolopoulos, HP Labs (john_apostolopoulos@hp.com)
Philip A. Chou, Microsoft (pachou@microsoft.com)
Fred Juang, Georgia Institute of Technology (juang@gatech.edu)