



CALL FOR PAPERS
IEEE Transactions on Multimedia
Special Issue on Interactive Multimedia



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With the advances in broadband networks, networking and QoS standards, audio/video coding and processing techniques and multimedia-capable user devices, multimedia streaming over networks has become a reality. With the popularity of peer-to-peer and social network applications, there has been increasing interest of interactive multimedia applications. An interactive multimedia application refers to live sharing of multimedia contents in terms of video, audio, texts or images among distributed users in a network. An interactive session requires real-time processing of data and media streams, with the support of user interactions at any time. Examples are voice over IP (VoIP), video conferencing, distributed collaborative environments, teleconferencing, online multiplayer games, social games, etc. As enterprises and interpersonal/business communications are increasingly global, such distributed interactive multimedia applications overcome accessibility and co-location barriers by bringing people together, leading to tremendous saving in time, operational and fuel costs.

Distributed interactive multimedia application is one of the fastest growing market sectors. While there are many business opportunities and advancements, the design of a good interactive multimedia system still faces many technological challenges today. Overcoming these challenges requires joint effort of various multimedia communities of system integration and architecture, signal processing, communication/coding and transmission, network design and measurement, standardization, etc. Furthermore, design of good user interfaces for smart interactive systems, and the incorporation of automatic perception of human activity (presence, speech, interaction), remains an important area at its infancy.

This special issue intends to bring together papers from experts in various multimedia areas to address challenges and present effective solutions for interactive multimedia applications, as well as to promote the development of novel interactive technologies. We solicit original contributions in the areas related to, but not limited to, the following:

- Multimedia processing for interactive applications
 - Scheduling and coding techniques for interactive VoIP and multimedia conferencing
 - Congestion control and QoS/error correction to mitigate network anomalies
 - Interactive multimedia messaging protocol
 - Low bit-rate multimedia processing and delivery
- Design of collaborative conferencing networks
 - Novel architecture and optimization for interactive multimedia applications
 - Real-time, low-delay and interactive telepresence networks
 - Interactive technologies and applications over mobile, ad-hoc or infrastructure-based overlay (peer-to-peer) or social networks
- Support of real-time interactivity
 - Session initiation, maintenance and control
 - Quality monitoring and management for multi-party voice and video interactive applications
 - Security and privacy solutions
- Multimodal perception technologies of human activity in the design of smart interactive systems
 - Design of smart spaces for interactive systems
 - Automatic detection of human presence and speech
 - Speech enhancement and transcription, speaker localization and interactive control of audio-visual content
 - User interface design
- Measurements and standards for interactive applications
 - System design, integration, trials and measurements
 - Success or failure experiences for interactive multimedia systems or networks
 - Standardization activities for interactive multimedia

Papers should be formatted according to the IEEE Transactions on Multimedia guidelines for authors (see: http://www.ieee.org/organizations/society/tmm/author_info.html). Mandatory overlength page charges and color charges will apply. Manuscripts (both 1-column and 2-column versions are required) should be submitted electronically through the online IEEE manuscript submission system at <http://tmmieee.manuscriptcentral.com/>. When selecting a manuscript type, authors must click on Special Issue on Interactive Multimedia. A copyright form with the manuscript number on the top of the page is required to be completed, signed and faxed to 1-732-562-8905 at the time of submission.