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## Editorial

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### Shervin Shirmohammadi\* and Abdulmotaleb El Saddik

School of Information Technology and Engineering,  
University of Ottawa, Canada  
E-mail: Shervin@site.uottawa.ca  
E-mail: abed@mclab.uottawa.ca  
\*Corresponding author

**Biographical notes:** Shervin Shirmohammadi, PhD, PEng, SMIEEE, is an Assistant Professor at the School of Information Technology and Engineering, University of Ottawa, Canada. He received a BSc in Electrical Engineering from the University of Ottawa in 1995, graduated with the highest standing among all engineering students, and received an MSc and a PhD in Electrical Engineering from the same university in 1997 and 2000, respectively. His current research interests include telecollaboration systems, multimedia and P2P networking protocols, tele-haptics, and collaborative virtual presence and gaming environments. He has over 60 publications, including book chapters on Teleconferencing and Telepresence. He is also an industry consultant with over a dozen technology transfers to the private sector. He is a licensed Professional Engineer in Ontario, a Senior Member of the IEEE and a Professional Member of the ACM.

Abdulmotaleb El Saddik is an Associate Professor in the School of Information Technology and Engineering (SITE). He is the Director of the Multimedia Communications Research Laboratory (MCRLab) and the Director of Information Technology Cluster, Ontario Research Network on Electronic Commerce (ORNEC). He received an MSc (Dipl-Ing) and a PhD (Dr-Ing) in Electrical Engineering and Information Technology from Darmstadt University of Technology, Germany in 1995 and 2001, respectively. He has authored or co-authored 2 books and more than 70 publications in the areas of software engineering development of multimedia artefacts and collaborative virtual environments. He is a Senior Member of IEEE and a recent winner of the prestigious Canadian Premier's Research Excellence Awards (PREA).

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The ultimate goal of computer communications is to overcome the distance barrier between people, to the extent that one can be virtually 'present' in another place, whether that place is real or virtual and to interact with remote people and objects as in the real world. While technologies such as digital audio and video and the internet have realised this objective to some limited extent, we are still many years away from having the ability of being virtually present in a distant location.

In this Special Issue, we review the current trends and latest developments in the field of collaborative multimedia applications in technology, mainly emphasising the collaboration aspect: the ability for remote users to perform synchronous tasks over the network, as if they were present in the same location.

We start the Special Issue with the paper by Petropoulakis and Flood, where they describe the design and implementation of a general purpose collaborative environment. This is followed by Wolff et al.'s work, which is a review of telecollaboration technologies, specifically from a closely-coupled collaboration

perspective. In the next paper Gorman et al. present a very detailed engineering discussion about using Java to implement synchronous collaborative systems for distributed virtual environments, followed by Liao and Li's discussion about the challenges and solutions for managing voice dialogues, between many users, in collaborative virtual environments. The next paper by Peyton et al. uses collaboration technology to address security issues for accessing sensitive data, followed by the paper by García et al., which presents a collaborative multimedia environment for teaching of chess. We then finish the special issue with three papers that focus on upcoming methods and technologies for collaboration. Rocznik and El Saddik propose the idea of a qualitative reference framework for incentive mechanisms in Peer to Peer networks, while Miners and Basir discuss the concept of expression and using it to increase the quality of teleoperation. Finally, Boukerche et al. use haptics, which is a media that deals with the human sense of 'touch' and 'feel' and propose a prediction-based technique to improve the quality of collaboration in virtual environments.