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Special Issue on Multimedia Streaming

The penetration of broadband residential access and high-speed wireless access has dramatically increases the demands for multimedia content. As the broadband access rates increase, multimedia streaming applications are embedded in more and more hardware devices, e.g., TVs, cars, and cell phones. In the past decade, multimedia streaming has evolved from simple client-server applications to large-scale Peer-to-Peer (P2P) applications. Hundreds of sites, including CNN, MSN, and Yahoo, have joined the parade of multimedia streaming. Furthermore, sites like YouTube also provide the Video-on-Demand services that allow users to view the video clips from any playback points. In addition to video and audio streaming, the advances in multimedia streaming also stimulate the emerging Internet telephone and television services.

Multimedia applications are significantly different from other conventional networking applications. In particular, multimedia applications are very sensitive to end-to-end delay and bandwidth fluctuation, but are tolerable to occasional data loss. The quality of the video highly depends on the available bandwidth in across the network. Endeavor has been made by researchers and application developers to improve the QoS (Quality of Services) in multimedia streaming from all aspects. On the application end, various codec and compression techniques have been proposed, e.g., MPEG and H.261, to reduce the bandwidth demand while maintaining the quality of the multimedia content. In communication networks, protocols and algorithms have been proposed and analyzed, including RTSP, RTP, RTCP, and SIP. From the network architecture point of view, we have the client-server setup and the Peer-to-Peer infrastructure. YouTube is by far the most successful client-server approach to video streaming with the cost of high bandwidth demand at the content source. In contrast, the Peer-to-Peer (P2P) approach invited peers (end hosts) to contribute their upload bandwidth and computational resources, resulting in better scalability, flexibility, and less demand on the servers. The success of P2P multimedia streaming has been demonstrated by systems like Octoshape and UUSee. Despite the advantages and the disadvantages of the existing solutions and technologies, there is no doubt that multimedia streaming is growing at a phenomenal rate.

This special issue solicits original high-quality research related to delivering multimedia content over the Internet. The goal is to provide an overview of the research in this area from both theoretical and practical aspects, to highlight current problems and solutions in multimedia streaming, and hopefully to enlighten new research directions. Topics of interest include, but are not limited to:

- Audio and video streaming
- Peer-to-peer multimedia streaming
- On-Demand multimedia streaming
- Interactive video and audio systems
- Enabling technologies for high-quality multimedia streaming
- Video codec for multimedia streaming
- Multimedia streaming for wireless networks
- Multimedia streaming ad-hoc networks
- Energy-efficient designs for multimedia streaming
- Practical multimedia streaming systems
- Security issues in multimedia streaming
- New multimedia streaming applications

Submission

Prospective authors are invited to submit original, high quality papers that have not appeared, nor are under considerations, in any other journals. Submissions should follow the author guidelines set out by Journal of Communications. The complete instruction for authors can be found at http://www.academypublisher.com/jcm/forauthors.html. Should you have further questions, please contact the corresponding guest editor (Mea Wang, meawang@ucalgary.ca).

Important Dates

Submission Deadline:	Jan. 31, 2011
Author Notification:	April 30, 2011
Final Manuscript Due:	May 31, 2011
Publication Date:	Q3, 2011

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