Preface

Leonard Barolli

Faculty of Information Engineering,
Department of Information and Communication Engineering,
Fukuoka Institute of Technology (FIT),
3-30-1 Wajiro-higashi, Higashi-ku, Fukuoka 811-0295, Japan
E-mail: barolli@fit.ac.jp

Timothy K. Shih

College of Computer Science,
Asia University,
No. 500, Lioufeng Rd.,
Wufeng, Taichung County 41354, Taiwan
E-mail: timothykshih@gmail.com

Jianhua Ma

Faculty of Computer and Information Sciences,
Department of Digital Media Sciences,
Hosei University,
3-7-2, Kajino-cho, Koganei-shi, Tokyo 184-8584, Japan
E-mail: jianhua@k.hosei.ac.jp   E-mail: jianhua@hosei.ac.jp

Biographical notes: Leonard Barolli is a Professor at the Department of Information and Communication Engineering, Fukuoka Institute of Technology (FIT), Japan. He received BE and PhD Degrees from Tirana University and Yamagata University in 1989 and 1997, respectively. He has published more than 300 papers in Journals, Books and International Conference. He has served as a Guest Editor for many Journals. He was PC Chair of IEEE AINA-2004 and ICPADS-2005. He was General Co-Chair of IEEE AINA-2006 and AINA-2008. He is Steering Committee Chair of CISIS International Conference. His research interests include ad-hoc and sensor networks, P2P, and intelligent algorithms. He is a member of IEEE, IEEE Computer Society, IPSJ and SOFT.

Timothy K. Shih is a Professor and the Dean of College of Computer Science, Asia University, Taiwan. He is a Fellow of the Institution of Engineering and Technology (IET), a senior member of ACM, and a senior member of IEEE. He has published over 430 papers and book chapters. He was the founder and co-Editor-in-Chief of the *International Journal of Distance Education Technologies*. He is an Associate Editor (AE) of the *ACM Transactions on Internet Technology* and an AE of the *IEEE Transactions on Learning Technologies*. He was also an AE of the *IEEE Transactions on Multimedia*. He has received many research awards from Taiwan, Germany, Greece, USA, and several best paper awards from international conferences.

Jianhua Ma received his BS and MS Degrees of Communication Systems from National University of Defense Technology (NUDT), China, in 1982 and 1985, respectively, and the PhD Degree in Information Engineering, from Xidian University in 1990. He is a Professor in the Faculty of Computer and Information Sciences in Hosei University since 2000. Previously, he had 16 years teaching and research experience at NUDT, Xidian University (China) and the University of Aizu (Japan), respectively. His research includes networks, multimedia, agents, ubiquitous computing and intelligence.

In the last few years, we have observed an explosive growth of multimedia computing, communication and applications. This revolution is transforming the way people live, work, and interact with each other, and is impacting the way businesses, government services, education, entertainment and healthcare are operating. It is safe to say that the multimedia revolution is already underway. Yet, several issues related to multimedia communication, modelling, Quality of Service (QoS), multimedia specification, high-speed networks, mobile and ad-hoc networks, analysis and design of distributed multimedia systems and intelligent multimedia applications are still challenging to both researchers and practitioners.

This special issue on *Multimedia Networking and Application Systems* covers many aspects of multimedia networking and applications. We received 35 submissions for this special issue. The papers were reviewed and selected based on their quality and suitability to the special issue as well as the journal. Finally, we accepted nine papers.

In this issue, the first paper by Enokido et al. proposes a transactional agent model for distributed object systems. The authors discuss in detail the proposed model and present its implementation and evaluation. The performance evaluation shows that proposed model has a better behaviour compared with the client–server model.

The paper by Koyama et al. deals with performance evaluation of wavelength assignment methods for WDM networks. By keeping the connection request in the node buffer for a specified period of time, the connection set-up delay can be increased. The authors show by simulation that performance of proposed method is better than the conventional forward and backward reservation methods.

The paper by Mitsui and Koizumi proposes and evaluates a remote experiment system, which has individual guidance and report preparation support functions. The authors describe the system implementation and show by experiments that the proposed system is effective for remote experiments when an internet connection is available.

The paper by Ma et al. proposes a pure P2P synchronous collaborative system. Different from other systems, the authors propose a decentralised system that does not use any server. The peers in a group manage the group by themselves. The system is implemented using JXTA technology and is evaluated in a practical test environment.

The paper by Miyakawa et al. deals with factor analysis for human sensitivity using their proposed Digital Traditional Japanese Crafting System (DTJCS). By finding good relation between fittings and people feelings, the system can satisfy users' requirements.

In paper by Sato et al., the redundant Location Servers (LSs) are employed to increase the availability of the proposed Cooperative Search Engine (CSE).

The performance evaluation shows that with 16 LSs when the fault rate of LS is 90%, the fault rate of all the systems is only 20%.

The evaluation of traffic dispersion methods for synchronous distributed multimedia data transmission on multiple links for group of mobile host is carried out in paper by Saito et al. The authors show that proposed 'Multitrack' method achieves high-speed and efficient data transmission between mobile hosts and internet.

The paper by Taguchi et al. proposes a broadcast-type hierarchical group communication protocol. The hierarchical group is composed by disjointed subgroups. The authors discuss how the messages can be causally ordered in subgroups. The evaluation by simulations shows that proposed protocol has a smaller round trip time compared with a traditional flat group.

The last paper by Wong et al. describes the architecture of an object database server for collaborative virtual environment. In the proposed architecture, all objects are decentralised and scattered among three tiers of object databases. The authors show that by limiting the knowledge and refining tasks for each server, the network and processor workload can be reduced.

We hope that this special issue will lead to a better understanding of multimedia networking and their applications. These works, we believe, can be of great interest for the researchers in the multimedia-networking field.

As we conclude this overview, we would like to thank all the authors for submitting their papers, and greatly thank many reviewers for their review work.