

## Special issue on UIT (Ubiquitous Information Technology) for multimedia systems

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Ubiquitous Information Technology (UIT) has rapidly emerged as a new computing paradigm and it covers the topics of seamless, secure, visible, and intuitive access to provide computing and communication services at anytime and anywhere. There are many issues to stably provide UIT services and much effort and enormous attention have been focused on the UIT environments. The UIT research area poses challenges such as context information, security, reliability, autonomous and intelligent networking, digital and multimedia systems, and so on. The UIT offers an unprecedented opportunity for various modern multimedia applications and systems under convergence of multimedia technology and multimedia visualization. Its main purpose is to solve the various problems of advanced digital and multimedia processing using the convergence of state-of-the-art computer science technology.

In UIT environments, the most important goal is to provide users more realistic and richer ubiquitous services with ultra-modern multimedia technology. In a word, we should try to guarantee and provide trustworthy and constant visual services in anyplace. Most of all, ubiquitous applications and services can be limited by data transmission, view area, and computing power. Therefore, much more attention and effort should be focused on the ubiquitous applications and services in visualization and multimedia environments. For these reasons, the proposed special issue intends to give an overview of the state-of-the-art of issues and guidelines for multimedia systems under the ubiquitous environment requiring wireless communication. In addition, it will provide completing the panorama of current research effort, which is widely inherent to topics of high interest for the computer graphics and multimedia readers.

This special issue includes three excellent papers from the selected papers of 2010 International Conference on Ubiquitous Information Technologies and Applications (CUTE 2010) and from the regular submissions of other excellent researchers related to this special issue topic. The selected papers of CUTE 2010 which were presented on December 16–18, 2010 in Sanya, China are revised and extended from the original version of conference papers. To contain

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high-quality papers, all papers in this special issue are carefully reviewed through a rigorous peer-review process for this SI publication.

This special issue includes the ontology-based multimedia environments for mobile devices. “Multimedia access to mobile environments using indoor semantic maps: Applications for light devices and hand-held computers” by Javier Medina et al. presents a proposal for representing the buildings and indoor spaces on the mobile devices. They designed an ontology for indoor maps, which integrates multimedia resources in the environments and users can view the location of the multimedia resources on the map and accessed them in real time using mobile devices.

“Color laser printer forensic based on noisy feature and support vector machine classifier” by Jung-Ho Choi et al. provides a new color laser printer forensics algorithm to enhance the reliability of digital images among various information in the ubiquitous space. In their experimental results show that 99.3 %, 97.4 % and 88.7 % accuracy for the brand, toner and model identification respectively using 4,800 images from 8 color laser printer models where half of the image is for training and the other half is for classification.

The paper “Speech authentication by semi-fragile speech watermarking utilizing analysis by synthesis and spectral distortion optimization” by Bin Yan and Yin-Jing Guo introduces an improved semi-fragile speech watermarking scheme by quantization of linear prediction (LP) parameters. Their experimental results show that the AbS based embedding algorithm can effectively reduce the difference between the watermarked LP parameters and the extracted LP parameters hence can reduce the minimum required authentication length.

We would like to express thanks to all people who have contributed their immense time and efforts in making this successful special issue. We thank all the authors who contributed their valuable papers for this special issue. Moreover, the paper review process would not have been possible without the kind assistance of the reviewers. Finally, we would like to pay thanks to an Editor-in-Chief the Multimedia Tools and Applications, Prof. Borko Furht, and Springer staff for their encouragement and strong support during the preparation of this special issue.



**Min Hong** received B.S. in Computer Science from Soonchunhyang University in 1995. He also received M.S. in Computer Science and Ph.D. in Bioinformatics from the University of Colorado in 2001 and 2005, respectively. He had worked as an instructor at the Department of Computer Science and Engineering at University of Colorado. Since 2006, he has been with the Department of Computer Software and Engineering, Soonchunhyang University, Asan, Korea, where he is an associate professor, working in the areas of Computer Graphics, Mobile Computing, Physically-based Modeling and Simulation, Bioinformatics Applications, and u-Healthcare Applications. He has published about 40 refereed professional research papers. In present, he is director of Computer

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