

# Journal of Computers

## Special Issue on Embedded and Multimedia Computing

### FOREWORD

Embedded and Multimedia Computing is one of important information technology (IT) in current state of art. It is applied widely in entertainment, education, medicine, healthy caring, communication, networking, transportation, finance, industry, science, and so on. Embedded and Multimedia Computing includes hardware, firmware, software, and mobile app of Information Communication Technology (ICT). It covers theoretical analysis and practical implementation. The development of Embedded and Multimedia Computing will affect the innovation of information technology and the productivity of global industries. It will upgrade the digital life in worldwide. Therefore, we need a forum for researcher and expert to share their experiences in embedded and multimedia computing and to further foster research in these areas.

The objective of this special issue is to present the novel researches and developments in various aspects of Embedded and Multimedia Computing. We hope that this special issue would promote the interested ICT researchers and scientists in finite field professional research area. After a very careful reviewing process, the editorial committee accepts seven outstanding papers to be included in this special issue. The first paper, proposed by Prof. Wen-Chung Tsai et al, from Chaoyang University of Technology, Taiwan, presents a 3D (Three-Dimensional) model for a Bi-directional Network-on-Chip (BiNoC). The second paper, a work by Dr. Lijuan Liu et al., from Beijing Jiaotong University, China, presents the theoretical kernel function of support vector machine used for dealing with high-dimensional data. The third paper, presented by Dr. Hehua Yan and his research team from Guangdong Jidian Polytechnic, China, utilizes the pervasive computing of the wireless sensor network (WSN) to perceive the entire surrounding. The fourth paper, proposed by Prof. Peyman SabouriHamid et al., from Auckland University of Technology, New Zealand, develops a basic border detection algorithm based on ZYNQ-7000 SoC, using VIVADO High Level Synthesis (HLS) tool, which takes the advantage of accelerating an embedded system design on a single SoC. The fifth paper, present by Prof. Shin-Jia Hwang et al., from Tamkang University, Taiwan, reports a new delegation-based authentication protocol, which can remove the exhaustive search problem of the subsequent login authentication to improve the subsequent logic authentication performance. The sixth paper, a collaborative work by Prof. Shih-Ching Yeh from National Central University, Taiwan and Prof. Margaret McLaughlin, et al., from University of Southern California, USA, develop a haptic virtual reality pinch task and to investigate its feasibility and effectiveness for chronic hemiparesis. The pinch task in the virtual environment was accomplished by coordinating two PHANTOM devices that provide haptic feedback. The final paper, reported by a collaborative team of Prof. Bo Shen, from Beijing Jiaotong University, China, and Dr. Kuo-Hsiang Cheng, from Tamkang University, Taiwan, propose a simple, highly efficient intra prediction algorithm to reduce the computational complexity of H.264/AVC High Profile. On behalf of the editorial committee, we would like to express our sincere appreciations to all authors and reviewers for their great contribution to this special issue. We would also like to thank the editorial committee members for their excellent helps. Finally, we are grateful to Professor Der-Jiunn Deng, the Editor-in-Chief, Professor Chun-Cheng Lin, the Associate Editor-in-Chief, and the editorial staffs, for their kind helps. Without all of their great contribution and help, it is impossible to have this special issue.

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