Foreword of Part 1

With the proliferation of wireless technologies and electronic devices, there is a fast growing interest in Mobile and Ubiquitous Computing (MUC). MUC enables to create a human-oriented computing environment where computer chips are embedded in everyday objects and interact with physical world. Through MUC, people can get online even while moving around, thus having almost permanent access to their preferred services. With a great potential to revolutionize our lives, MUC also poses new research challenges. This special issue is composed of six papers, which are closely related to the various theories and practical applications in MUC. Especially, four of them are extended versions of the best papers presented at the International Workshop on Interactive Multimedia & Intelligent Services in Mobile and Ubiquitous Computing (IMIS 2007). We hope that this issue will be a trigger for further related research and technology improvements in this important subject.

In the paper "An Energy-Efficient Sensor Routing with low latency, scalability for Smart Home Networks," H. Oh and K. Chae present a novel energy-efficient sensor routing scheme in wireless sensor networks, namely EESR (Energy-Efficient Sensor Routing). The authors show that the proposed scheme provides energy-efficient data delivery to the base station with low latency, scalability

The paper "Novel Mechanism to Defend DDoS Attacks Caused by Spam" written by D. Nagamalai, C. Dhinakaran and J. Lee introduces a multi layer approach to defend the DDoS attack caused by spam mails. This approach is a combination of fine tuning of source filters, content filters, strictly implementing mail policies, educating user, network monitoring and logical solutions to the ongoing attack. The experimental results show that there is 60% of reduction in spam traffic after implementing the defense mechanism.

F. E. Sandnes and Y. Huang, in the paper "From Smart Light Dimmers to the IPOD: Text-Input with Circular Gestures on Wheel-ontrolled Devices", present a uni-stroke text input strategy for wheel input controls. The presented uni-strokes are based on circular motions that follow the contour of the wheel. While spatial mnemonics based on the shape of the alphabetic characters are used to minimize the time and effort learning the uni-strokes, an approximate distance based method is used for robust character recognition of uni-stroke patterns.

In the paper "A CPU Usage Control Mechanism for Processes with Execution Resource for Mitigating CPU DoS Attack," T. Tabata, et al. propose an access control model for CPU resources based on an execution resource. The proposed model can control the usage ratio of CPU resources appropriately for each user and each program domain. Through the results of experiments employing the Apache web server, the authors show that the proposed method can mitigate DoS attacks and does not have bad effects upon the performance of a target service.

The paper "Sentry@Home - Leveraging the Smart Home for Privacy in Pervasive Computing" written by S. A. Bagüés, et al. introduces a new infrastructure component for smart homes: A privacy proxy, named Sentry@HOME, as part of our User-centric Privacy Framework (UCPF). Its main task and responsibility is to take care of privacy-related data when accessed from the outside. Based on a set of privacy policies defined by the user it controls and enforces privacy for individuals roaming freely in pervasive computing environments.

In the paper "User Authentication Using Neural Network in Smart Home Networks," S. Z. Reyhani and M. Mahdavi present a new authentication scheme based on the Radial Basis Function (RBF) neural network. This scheme can produce the corresponding encrypted password according to the entered username, and it could be used to replace the password table or verification table stored in the common authentication systems.

Finally, we would like to extend special thanks to all authors as well as reviewers for their enthusiasm and dedication, which have made this issue a reality.

Guest Editors of Part 1

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Foreword of Part 2

Recent advances in computer and communication technologies have offered people an unprecedented level of convenience of living, making life more comfortable and enjoyable. To allow people to better perform their daily living activities, improve the quality of life, and enjoy entertainment and leisure activities, one must first understand the services that are in demand in a smart living environment, and then develop key technologies for supporting such demands. This special issue contains four selected papers from the 2007 International Workshop on Smart Living Space and is to focus on emerging technologies and innovative solutions for intelligent living spaces.

We strongly believe that the selected papers make a significant contribution to researchers, practitioners, and students working in the areas of the smart living space. We are grateful to authors for their research contributions in this special issue. Our special thanks go to the IJSH editorial board and Dr. Jong Hyuk Park for his supports throughout the whole publication processes. Finally, the Guest Editors wish to gratefully acknowledge all those who have generously given their time to review the papers submitted to the workshop as well.

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