



**SPECIAL SECTION ON**  
**EMBEDDED SYSTEM AND SOFTWARE FOR IPC**  
**GUEST EDITORIAL**

Pervasive computers, networks and information are paving a road towards a smart world in which computational intelligence is distributed throughout the physical environment to provide trustworthy and relevant services to people. This intelligent pervasive computing (IPC) will change the computing landscape because it will enable new breeds of applications and systems to be developed. By embedding digital intelligence in everyday objects, our workplaces, our homes and even ourselves, many tasks and processes could be simplified, made more efficient, safer and more enjoyable. Intelligent pervasive computing composes these many "intelligent objects" to create the environments that underpin the smart world.

The scope of this special issue is on all views of embedded system and software for IPC. This special issue contains 4 technical papers dealing with cutting-edge research and technology related to the design, modelling, and implementation of architectures, algorithms and systems for IPC. Actually, this special issue is compounded of three regular papers and one extended paper selected as best paper of The 2007 International Conference on Intelligent Pervasive Computing. All the received submissions were carefully reviewed by at least three expert reviewers.

Zhigang Gao, et al. propose an energy-saving algorithm under a task model where a task consists of multiple subtasks with different fixed priorities in the manuscript "Energy-Efficient Scheduling for Small Pervasive Computing Devices under Fixed-Priority Multi-Subtask Model". The algorithm exploits the relationship among tasks to set the slowdown factors of subtasks.

In the manuscript "Power reduction in advanced embedded IPC processors," Ubal et al. present a technique to reduce the leakage energy consumption in embedded systems caches. Gated-Vdd technique is combined with the switch-off at some of the bytes of a word whose value is zero. The proposed technique has been evaluated on a model of a contemporary high-end ARM embedded microprocessor used in a number of actual pervasive devices.

The manuscript "An ID-based Blind Signature Scheme with Delegate Proxy for Networked Embedded Systems" by Baokang Zhao et al. addresses the signature generation scheme using both the knowledge of ID and proxy. The new scheme achieved good properties, like strong unforgeability, identifiability, undeniability and verifiability.

Lien-Fa Lin et al. introduce a new data organization and search algorithm, Jump-Rdnn-Tree, in the manuscript "Search Location-Dependent Data in Broadcasting Environment". This technique improves the performance of Location-Dependent Queries for Location-based services.

The organization of this Special Issue is the result of hard and excellent work of many people, including authors, external reviewers, and guest editors. We would like to express our sincere appreciation to all of them for their cooperation in completing the Special Issue under a very tight schedule. We also gratefully acknowledge Prof. Mo Jamshidi, Editor in Chief of the AutoSoft Journal for supporting the Special Issue.

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Guest Editors