

Foreword to the SMAP '09 Special Session on Intelligence, Adaptation and Personalization on the Web

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We are currently witnessing the remarkable impact of Web on our society. Web is revolutionizing the way we process, use, exchange and disseminate information. Through this technology revolution, many aspects of our life such as communication, commerce, education, and entertainment are redefined.

Parallel to the growth of Internet and Web, several technologies and protocols are emerging to bring highly intelligent, personalized and adaptive services to the end users. More and more intelligent techniques are applied in Web-based systems and services in order to conform to users' preferences, constraints and limitations and adapt with respect to different content and context features.

Thus, researchers need to explore and study the plethora of challenges that emergent technologies bring to the Web. This special session aims to increase the awareness of researchers in this area, providing an in-depth investigation on several research and deployment issues, regarding the characteristics of various approaches in Web-based systems towards intelligence, adaptation and personalization in the Web, focusing on the development of methods and techniques among different applications. The topics covered are:

- Intelligent Human - Web Interactions
- Semantics and Ontology based Engineering
- Distributed Web Content Creation, Modeling, Retrieval, Filtering, Customization and Adaptation

- Intelligent and Personalized E- Services (e-business, e-commerce, healthcare information systems, e-government, web-based education systems etc.)
- Grid Intelligence and Services
- Web Services
- Intelligent Agent Technology and Multi-Agent Systems
- Web-based Decision support systems
- Social Intelligence and Networking
- Web 2.0, Collaborative Intelligence
- Ubiquitous Computing, Autonomic computing.

For the purpose of the SMAP '09 Special Session on Intelligence, Adaptation and Personalization on the Web, 5 high quality papers authored by 12 researchers from Greece, Spain, Belgium and Slovakia were selected:

- Adaptive Task Scheduling in Grid Computing Environments,
- An Approach to Annotation of Web-Based Learning Texts on Programming,
- A Web Service to Generate Program Coprocessors,
- Semantic Platform for the Composition of Tourism Products and Services and
- Context Aware Help and Guidance for Large-Scale Public Spaces.

The first paper authored by A. Michalas and M. Louta proposes a scheduling architecture semantically enhanced which provides the most appropriate

assignment of tasks to computing resources, given the current load conditions of each computing resource and the network status. The Ant Colony Optimization algorithm (ACO) is adopted to effectively assign tasks to computing resources. First experimental results indicate that the proposed framework produces good results in comparison to other well known schemes considered (e.g. round robin).

The second paper authored by Vladimír Mihál and M. Bielíková presents a method for annotation of learning materials on programming. The main idea is to extend learning materials (e.g., text mixed with programming exercises and code samples) by additional information helping a student to understand the learning subject easier and faster. The proposed approach for annotation texts was tested within an existing learning system in the domain of functional and logic programming.

The third paper authored by M. Dossis et al. describes an intelligent web service to automatically produce non-standard and custom hardware description code, including its memory and system interfaces from abstract, executable specification (unaltered program) code, via intelligent web interface and intelligent human-web interactions. Provably-correct hardware compilations are performed on selected high-level program subroutines by employing logic programming techniques and an intelligent inference engine. The intelligent inference engine is invoked automatically within the processes of the implemented high-level synthesis compiler. The proposed methodology and implemented tools are proven applicable and successful by evaluating results from implementation of linear as well as repetitive, nested-loop – based targeted application source code programs.

The fourth paper authored by S. Bilbao and J. Herrero presents a platform where the combination of ontologies and Semantic Web Services (SWS) allows tourism intermediaries to seamlessly offer customized and diversified services and products that can rapidly satisfy market and end-users' demands. This platform includes an infrastructure to register, catalogue and discover services; a graphical tool for the composition of services; middleware to deploy and execute the composed services, and a Web 2.0-oriented interface generator.

Finally, the fifth paper authored by N. Mahmud et al. introduces developed software prototype U-Help-System (UHS) to demonstrate how using a social network in combination with the user profile and preferences, can help nomadic person to approximate in selecting people that can support the user in a large scale ubiquitous computing environment.

The organizers sincerely hope that this session will

stimulate interesting discussions among the SMAP 2009 attendants as well as the readers of these proceedings.