Intelligent Hypermedia for the Adaptive Web
Foreword to the SMAP '08 Special Session

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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 hypermedia technologies and protocols are emerging to bring intelligent, personalized and adaptive services to the end users. More and more techniques are applied in Web-based recommendation systems, interactive IP-based multimedia systems, and agent negotiation protocols in order to adapt to users' preferences in applications with different content and context features.

Thus, researchers need to explore and study the plethora of challenges that emergent intelligent hypermedia technologies bring to the Adaptive 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 impact of intelligent methods on this new form of Web. In addition, this special session examines the performance characteristics of various approaches in Web-based systems, while it focuses on the development of intelligent methods among different hypermedia applications.

The topics falling within the scope of the SMAP '08 Special Session on Intelligent Hypermedia for the Adaptive Web and covered by the special session papers are:

- Intelligent hypermedia applications for the Adaptive Web (web-based educational systems, e-government, e-commerce),
- Design and presentation of adaptation for intelligent hypermedia (web-based environments adaptable to user's abilities and/or disabilities)
- Security and privacy, ethical considerations and social impact,
- User-adapted interaction to content, structure, navigation and/or presentation of information (blogs, wiki-based applications) and
- Intelligent content authoring and delivery.

After a thorough review process, for which the session organizers are indebted to the reviewers for their careful and timely work, 7 high quality papers authored by 23 researchers from Greece, Spain, UK, Czech Republic and Slovakia were selected:

- A Speech-Enabled Assistive Collaborative Platform for Educational Purposes with User Personalization,
- Adaptive Test Question Selection for Web-based Educational System,
- Enhancing User Privacy in Adaptive Web Sites with Client-Side User Profiles,
- An Intelligent Mechanism for Adaptive Peer User Modeling in Web-based Environments,

978-0-7695-3444-2/08 $25.00 © 2008 IEEE
DOI 10.1109/SMAP.2008.43

- CAE-L: An Ontology Modelling Cultural Behaviour in Adaptive Education,
- Experimental Adaptive Web Portal with Semantic Data Store and
- Personalizing e-Commerce by Semantics-enhanced Strategies and Time-aware Recommendations.

The first paper authored by V. Kolias et al. focuses on the design and implementation of an assistive collaborative platform for educational purposes that can be accessed by heterogeneous hardware platforms such as PCs, PDAs, mobile or traditional phones. The system main purpose is to provide a platform for collaboration between university students and teachers in a way that enhances students' access to educational resources and their overall learning experience. This is achieved by personalizing its content at least to some degree. Furthermore, acoustic/vocal characteristics may also prove valuable for learners with visual or kinetic impairments.

The second paper authored by O. Vozar and M. Bielikova present a method to select test questions adapting to individual needs of students in the context of web-based educational system. The system combines three methods. The first one is based on course structure focusing on the selection of the most appropriate topic for learning, while the second uses the Item Response Theory to select k-best questions with adequate difficulty for particular learner. The third one is based on usage history prioritizing questions according to specific strategies. The authors describe how these methods evaluate user answers to gather information concerning their characteristics, for more precise selection of further questions.

The third paper authored by C. Kolias et al. describes an architecture that enhances user privacy during interaction with adaptive web sites. This architecture enables users to create and update their personal privacy preferences for the adaptive web sites they visit, by holding their profiles in the client side instead of the server side. By doing so, users are able to self-confine the personalization experience the adaptive sites offer, thus enhancing privacy.

The fourth paper authored by I. Giannoukos et al. introduces a novel technique that incorporates feed forward neural networks to determine the optimal reviewers for a specific author during a peer assessment adaptive procedure. The proposed method seeks to match author to reviewer profiles based on feedback regarding the usefulness of reviewer comments as it was perceived by the author. The method was tested on educational e-learning data and the preliminary results were quite promising.

The fifth paper authored by K. Chandramouli et al. introduces the CAE-L ontology for modeling stereotype cultural artefacts in adaptive education. The ontology design is based on the user study gathered from the respondents to the CAE (Cultural Artefacts in Education) questionnaire, which determines the cultural artefacts that influence a learner's behaviour within an educational environment. The authors present a brief overview of the implementation and discuss the stereotype presentation styles from three different countries, namely China, Ireland and UK.

The sixth paper authored by M. Balik, I. Jelinek presents a general model of an adaptive system with semantic data store. For evaluating their theoretical results, the authors developed a prototype of an adaptive system performing in parallel several experiments with promising results.

Finally, the last paper authored by Y. Blanco-Fernandez et al. investigates a new recommendation strategy that offers time-aware suggestions to e-commerce users, by enhancing reasoning techniques from the Semantic Web, using item-dependent time functions. Their approach has a positive impact in personalization issues, leading to suggestions adapted to the particular needs of each user, at any given moment.

The organizers sincerely hope that this session will stimulate interesting discussions among the SMAP 2008 attendants as well as the readers of these proceedings.