
Editorial

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Biographical notes: Daniela Godoy is a Professor in the Computer Science Department at UNICEN University, Argentina, and researcher at ISISTAN Research Institute. She received her PhD in Computer Science from the UNICEN University in 2005. Her research interests include intelligent agents, machine learning approaches for user profiling and recommendation technologies. See <http://users.exa.unicen.edu.ar/~dgodoy/> for additional information.

In recent years, personalisation and recommendation technologies have emerged as a means to help users to cope with the problem of information overload caused by the explosive growth of resources available at online sources. Examples include adaptive systems, which adapt their behaviour to users' preferences and needs, and recommender systems that predict the relevance of diverse items (e.g., movies, travels, products, etc.) according to users' interests. Efficient intelligent techniques are needed to mine data gathered from user behaviour for actionable knowledge allowing to enhance user experience with diverse applications.

Intelligent techniques to be applied in personalisation and recommendation must address important challenges arising from both the technological and the human perspectives. Thus, the problem requires the involvement of multiple research fields such as user modelling, machine learning, intelligent information retrieval, data and text mining, statistics, computational intelligence, human-computer interaction and intelligent software agents.

The papers contained in this special issue on intelligent techniques for personalisation and recommendation comprise an interesting range of research topics. The first two papers show different approaches for personalisation of information seeking and searching activities through user profiling. Conversely, the systems proposed in the last two papers try to take advantage of the collective knowledge residing in communities for recommendation.

Roman Y. Shtykh and Qun Jin present in their paper 'Dynamically constructing user profiles with similarity-based online incremental clustering' an approach to dynamically construct user profiles for personalisation of information seeking activities. Multi-layered user profiles consisting of four layers, dynamic session, short-term, long-term and, optionally, a static layer, are created using an inference method named High Similarity Sequence Data-Driven clustering (H2S2D). In addition to a complete example of profile

construction for a potential user, the paper reports the results achieved during experimentation with a standard news collection, demonstrating the potential of the approach.

In the paper ‘A personalised query suggestion agent based on query-concept bipartite graphs and Concept Relation Trees’, Yan Chen and Yan-Qing Zhang propose an agent-based approach for personalised query suggestion. This query suggestion agent uses both concept semantic relations and co-occurrence to cluster concepts in order to create concept relation trees. For queries connected to these trees their relationships are calculated so that all queries related to a given query can be later retrieved to generate suggestions. Experimental evaluation conducted with log data of a commercial search engine shows the effectiveness of the new personalised query suggestion agent.

Ángel García-Crespo, Juan Miguel Gómez-Berbís, Ricardo Colomo-Palacios and Francisco García-Sánchez introduce the idea of exploiting the social knowledge that can be extracted from the most accurate tags in the pool of Web 2.0 applications for recommendation systems. A lightweight ontology that conceptualises a particular social domain of a user is combined with a number of features representing pure domain knowledge and used as input to a classification technique based on Support Vector Machines (SVMs) to produce recommendations.

‘Community Adaptive Search Engines’ (CASE), for multimedia object retrieval, are proposed in the paper of the same title authored by Alfredo Milani, Clement Leung and Alice Chan. CASE systems adapt their behaviour according to the collective feedback of users using an evolutionary approach to solve a dealer/opponent game model. In this model the user community plays the role of the dealer which holds a secret consisting in the optimal answer to a query, and the opponent is the system, which tries to discover the answer by submitting tentative solutions and receiving feedback about them.

I want to thank all the authors for their contributions to this special issue on intelligent techniques for personalisation and recommendation technologies. Furthermore, I want to thank the reviewers for their valuable comments which significantly contributed to the high quality of the accepted papers.