Recommender Systems

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Recommender systems are web-based applications that aim at helping customers in the decision making and product selection process (Resnick & Varian, 1997). The most prominent example is the online bookstore *amazon.com*, where collaborative filtering techniques are used to exploit similarities in the user profile which is based on the navigation and buying history: The main idea is to identify users who presumably have similar preferences and recommend those items which were bought by other users with a similar interest profile. Another technical approach is *content-based filtering* which builds on the hypothesis that the preferred items of a single user can be extrapolated from her preferences in the past, thus recommending "more of the same". The third principle approach is to use deep domain knowledge and to base the recommendations on a thorough understanding of the user's current needs, comparable to real-life sales situation. Knowledge-based recommender systems elicit user preferences explicitly, i.e. they provide dynamic personalized and potentially persuasive sales dialogues (Burke, 2000), (Jannach, 2004). The recommendations are the result of a reasoning process on the domain knowledge which also forms the basis for explaining to the user why an item is proposed. Furthermore, hybrid approaches (Burke, 2002) are used to overcome some of the shortcomings such as cold start problems for new users and new products when using collaborative filtering, lack of serendipity for content based filtering applications or a high knowledge acquisition effort when employing an explicit model of the domain (Adomavicius & Tuzhilin, 2005).

Within this special issue we can only give an incomplete overview on the research carried out in the field of recommender systems in Austria and neighboring Germany and Italy. In the first contribution the Computer-based New Media Group at the University of Freiburg and solution provider Mentasys address the issue of learning preferences from the interaction logs of anonymous users. They evaluate different classification methods using real-world data from sales assistants (*Anonymous Recommender Systems*). The contribution of the second article is motivated by the financial services domain, where longer lasting relations between the operator of the recommender system and their clients prevail (Felfernig & Kiener, 2005). The authors from University Klagenfurt and the interactive selling technology provider ConfigWorks focus on quality assurance aspects for knowledge-based recommender applications. The paper shows how automated regression tests can be developed for such knowledge based systems and describes first empirical results (*Testing Knowledge-Based Recommender Applications*).

Comparable to the financial services domain, where recommender systems are employed in the different communication channels to customers (i.e. Web, kiosk systems and mobile), also in the tourism domain a multi-channel strategy can be taken (Nguyen, Cavada & Ricci, 2003). *Critique-Based Mobile Recommender Systems* gives an overview on an e-tourism application that employs a specific form of user feedback, i.e. critiques (Shimazu, 2001), to ensure a short interaction length which is crucial in mobile applications (Smyth & Cotter, 2002). This work is carried out by the eCommerce and Tourism Research Laboratory of the research center ITC-irst in Trento.

The fourth and final contribution stays in the field of e-tourism. $_{et}$*Planner: A hybrid recommender system for mobile travel planning* gives an outlook on ongoing work carried out under the premises of the Austrian Network for e-Tourism, done by the eTourism Competence Center Austria in Innsbruck and the University Klagenfurt. The project focuses on an integrated long-lasting recommendation process that starts with the pre-trip destination selection phase on a Web portal, includes the whole stay and finishes with the post-trip phase when the guest is back home again. It additionally innovates the field by offering push and pull interaction styles combined with recommendation technology.

Finally, we wish to thank the authors of the papers for their contributions to this special issue.

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