Lecture Notes
in Business Information Processing   239

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E-Commerce
and Web Technologies

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on Electronic Commerce and Web Technologies, EC-Web 2015
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Revised Selected Papers

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Preface

EC-Web is an international scientific conference series devoted to technology-related aspects of e-commerce and e-business. The 16th edition of the conference, EC-Web 2015, took place in Valencia, Spain, in September 2015 and served as a forum to bring together researchers and practitioners to present and discuss recent advances in their fields. The conference series historically covers the following areas:

– Search, comparison and recommender systems
– Preference representation and reasoning
– Semantic-based systems, ontologies and linked data
– Agent-based systems, negotiation and auctions
– Social Web and social media in e-commerce
– Computational advertising
– E-commerce infrastructures and cloud-based services
– Service modelling and engineering
– Business processes, Web services and service-oriented architectures
– E-business architectures
– Emerging business models, software as a service, mobile services
– Security, privacy and trust
– Case studies

This year, the conference program focused on two main topics, recommender systems and matchmaking as well as social and Semantic Web aspects of electronic commerce. The works presented at the conference reflect recent trends in different subfields related to e-commerce and Web technologies, which can be summarized as follows.

In the Web era, resource retrieval techniques play a fundamental role in helping users deal with the issues related to information overload. Today's search engines and matchmaking systems no longer work solely on plain text documents and keyword analysis. Their results are computed and enriched by putting together various types of information, e.g., link-based data, user preferences, as well as information encoded in so-called knowledge graphs. The same happens for personalized information filtering systems, in particular for recommender systems, where collaborative and content-based approaches are combined to exploit diverse data sources in order to improve not only the accuracy of the results but also their novelty, diversity, and serendipity.

At the same time, the Social Web has become an important platform for activities related to e-commerce on the Web. Social networks, review sites, and blogs have become important places to market products and analyze their reception by larger groups of customers. Thus, methods for creating and analyzing the behavior of users on the Social Web become more and more important. Recent topics of research in that direction include targeted advertisement, opinion mining and sentiment analysis, as

well as trust and reputation mechanisms in social online social networks and their impact on user behavior.

Finally, Semantic Web technologies, in particular data markup standards today provide an established means for publishing and partially exchanging structured data on the Web. Large numbers of websites have started to markup their content using standards such as Microdata, Microformats, and RDFa allowing search engines like Google, Bing, and Yahoo! to use this markup to improve their search results. At the same time, such approaches are increasingly used in the e-commerce area where structured product descriptions are published online and sometimes even linked to general purpose schemas such as schema.org and or product classifications such as eClass.

Overall, we received 28 paper submissions for the conference, which addressed a variety of these topics. Each submission was reviewed by three members of the Program Committee. Based on the judgement of the reviewers, ten papers where selected for publication in these proceedings. This corresponds to an acceptance rate of 35 %.

The section on recommender systems in the proceedings contains three papers: Peska and Vojtas investigate the use of implicit user feedback in terms of interactions with a shop website to determine preference relations between products. They argue that this technology is particularly useful for small retailers that do not have a sufficiently large number of sales to use conventional methods. Kaminskas et al. also investigate the problem of providing recommender solutions for small retailers. They report experiences from practical applications in different companies and present different approaches to overcome the data sparsity problem. Ristoski et al. finally investigate the use of freely available data on the Web to create a better basis for comparing different products.

The three papers in the second section of the proceedings address the problem of recommending multimedia content. Hatem et al. propose an extension of LDA-based approaches for image retrieval. The apply the classic LDA model on the textual context of images to determine associated topics that are then compared with the topics of user queries to retrieve images. They show that comparing topics rather than words improves the retrieval performance. Cremonesi et al. propose an approach for the personalized recommendation of TV channels. Their results indicate that the viewing times are the most accurate predictors of user interests. Deldjoo et al. finally investigate the use of low-level image features to improve video recommendation. They show that low-level features are not only a solid basis for recommendation, but can also help to outperform approaches that use high-level annotations in terms of the genre.

The papers in the Semantic and Social Web section of the proceedings investigate the use of publicly available data for building applications. Meusel et al. present an analysis related to structured product information available on the Web. Their work shows that an impressive amount of product information is available on the Web. However, despite numerous standardization efforts, heterogeneity is still a major problem. Zhou and Guo present an empirical study regarding the helpfulness of product reviews in social media. They show that there is a combined effect of text sentiment and rating that shows a better correlation to helpfulness than when considering the variables in isolation. Santos et al. finally investigate the use of Twitter data to derive insights on the Brazilian stock market and compare their insights with previous research on Twitter data from English-speaking users.

Finally, in the last paper of the proceedings, Mousheimish et al. provide additional arguments that prediction and proactive replanning can improve logistic processes.

November 2015   Heiner Stuckenschmidt
                                                         Dietmar Jannach

Organization

EC-Web 2015 was organized in the context of the 26th International Conference on Database and Expert Systems Applications (DEXA 2015) and took place during September 3–4, 2015, in Valencia.

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