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Preface

The Web is a global information space consisting of linked documents and linked data. As the Web continues to grow and new technologies, modes of interaction, and applications are being developed, the task of the Semantic Web is to unlock the power of information available on the Web into a common semantic information space and to make it available for sharing and processing by automated tools as well as by people. Right now, the publication of large datasets on the Web, the opening of data access interfaces, and the encoding of the semantics of the data extend the current human-centric Web. Now, the Semantic Web community is tackling the challenges of how to create and manage Semantic Web content, how to make Semantic Web applications robust and scalable, and how to organize and integrate information from different sources for novel uses. To foster the exchange of ideas and collaboration, the International Semantic Web Conference brings together researchers and practitioners in relevant disciplines such as artificial intelligence, databases, social networks, distributed computing, Web engineering, information systems, natural language processing, soft computing, and human-computer interaction.

This volume contains the main proceedings of ISWC 2008, which we are excited to offer to the growing community of researchers and practitioners of the Semantic Web. We got a tremendous response to our call for research papers from a truly international community of researchers and practitioners from 41 countries submitting 261 papers. Each paper received an average of 3.25 reviews as well as a recommendation by one of the Vice Chairs who read the papers under investigation as well as the comments made by PC members. Based on a first round of reviews, authors had the opportunity to rebut leading to further discussions among the reviewers and—where needed—to additional reviews. Reviews for all papers with marginal chances of acceptance were discussed in the Programme Committee meeting attended by the Vice Chairs.

As the Semantic Web field develops we have observed the existence of a stable set of subjects relevant to the Semantic Web, such as reasoning (19)¹, knowledge representation (14), knowledge management (12), querying (9), applications (8), semantic Web languages (7), ontology mapping (6), ontology modelling (6), data integration (6), and semantic services (5). Some of the paper topics substantiate the role of the Semantic Web as being at the intersection of several technologies, e.g., collaboration and cooperation (5), interacting with Semantic Web data (5), human-computer interaction (4), information extraction (4), content creation and annotation (4), uncertainty (3), database technology (3), social networks

¹ Numbers in parentheses indicate the frequency of this topic among the set of accepted papers as given by the authors at the time of submission. Many papers addressed multiple topics.

(3), data mining and machine learning (3), semantic search (3), information retrieval (3), Semantic Wikis (3), social processes (2), peer-to-peer (2), personal information management (2), visualization (2), multimedia (1), grid (1), semantic desktop (1), trust (1), and middleware (1). Eventually, new areas that are core to the Semantic Web field gain prominence as data and ontologies become more widespread on the Semantic Web, e.g., ontology evaluation (4), ontology reuse (4), searching and ranking ontologies (3), ontology extraction (2), and ontology evolution (1).

Overall, as the field matures, ISWC Programme Committee members have adopted high expectations as to what constitutes high-quality Semantic Web research and what must be delivered in terms of theory, practice and/or evaluation in order to be accepted in the research track. Correspondingly, the Programme Committee accepted only 43 papers (i.e., 16.7%); three of the submissions were accepted for the in-use track after further discussion with its Track Chairs.

The Semantic Web In-Use Track received 26 submissions, each of which was reviewed by 3 members of the In-Use Track Programme Committee. We accepted 11 papers, along with 3 papers referred from the Research Track. Submissions came from both research and commercial organizations, reflecting the increased adoption and use of Semantic Web technologies. Traditional business, Web, and medical applications were joined with home automation, context-aware mobile computing, and satellite control. Papers also addressed deployment, scalability, and explanations.

This year ISWC 2008 hosted, for the fourth consecutive year, a doctoral consortium for Ph.D. students within the Semantic Web community, giving them the opportunity to discuss in detail their research topics and plans, and to get extensive feedback from leading scientists in the field. This year, in order to minimize overlap with other events and to increase attendance, the consortium was held on the day before the main conference. There were 39 submissions in total, which is approximately a 33% increase over 2007 and the highest ever submission rate to the ISWC DC. Submissions were reviewed by a panel of experienced researchers. The acceptances comprised 7 papers and 12 posters, which were presented in a full-day session. Each student was also assigned a mentor who led the discussions following the presentation of the work, and provided more detailed feedback and comments, focusing on the PhD proposal itself and presentation style as well as on the actual work presented. The mentors were drawn from the set of reviewers and comprised some leading researchers in the field—both from academia and from industry.

A unique aspect of the International Semantic Web Conferences is the Semantic Web Challenge. This is a competition in which participants from both academia and industry are encouraged to show how Semantic Web techniques can provide useful or interesting applications to end-users. This year the Semantic Web Challenge was organized by Jim Hendler and Peter Mika. It was further extended to include the Billion Triple Challenge. Here the focus was not so much on having a sleek and handsome application, but rather on managing

a huge mass of heterogeneous data — semantic data, microformat data or data scraped from syntactic sources that one finds out there on the Semantic Web.

Keynote Talks from prominent scientists and managers further enriched ISWC 2008: Ramesh Jain, an eminent figure in the field of multimedia and beyond, gave a talk indicating the importance of semantics in the field of experiential computing. Stefan Decker, one of the founding members of the Semantic Web field in research and practice, presented his ideas about further developing the Semantic Web in order to give the common user the power of the Semantic Web at his fingertips. Finally, John Giannandrea considered the Semantic Web from the point of view of a business person. As co-founder and CTO of MetaWeb technologies, he explained how the Semantic Web helps his customers, showing the importance of thinking out of the box in order to exploit the strength of Semantic Web technologies. In addition, there were seven invited talks from industry that focused on the development and application of Semantic Web Technology along with a panel titled “An OWL 2 Far?” moderated by Peter F. Patel Schneider.

The conference was enlivened by a highly attractive Poster and Demo Session organized by Chris Bizer and Anupam Joshi and a large Tutorial Program supervised by Lalana Kagal and David Martin and including 11 unique events to learn more about current Semantic Web technologies. A great deal of excitement was generated by 13 workshops, which were selected from 22 high-quality proposals under the careful supervision of Melliya Annamalai and Daniel Olmedilla.

The final day of the conference included a Lightning Talk session, where ISWC attendees could submit one slide and get five minutes of attention from a broad audience to report on what they learned and liked or disliked and how they see the Semantic Web continuing to evolve.

We are much indebted to Krishnaprasad Thirunarayan, Proceedings Chair, who provided invaluable support in compiling the printed proceedings. We also offer many thanks to Richard Cyganiak and Knud Möller, Meta data Co-chairs, for their expert coordination of the production of the semantic mark-up associated with contributions to the conference.

The meeting would not have been possible without the tireless work of the Local Organization Chair, Rudi Studer, the Local Organizing Committee including Anne Eberhardt, Holger Lewen and York Sure and their team from Karlsruhe.

We thank them all for providing excellent local arrangements. We would also like to thank the generous contribution from our sponsors and the fine work of the Sponsorship Chairs, John Domingue and Benjamin Grosz, and Li Ding, Publicity Chair. Finally, we are indebted to Andrei Voronkov and his team for providing the sophisticated yet free service of EasyChair, and to the team from Springer for being most helpful with publishing the proceedings.

October 2008

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