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# Web Reasoning and Rule Systems

6th International Conference, RR 2012  
Vienna, Austria, September 10-12, 2012  
Proceedings



Springer

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# Preface

Web reasoning is the task of reasoning over Web-accessible data, which is typically heterogeneous, distributed, uncertain, contradictory, and – most of all – large. This leads to major challenges, which are critical not only for the Semantic Web, but also for modern information systems in general. A fruitful field of research has developed around the integration of rule and ontology languages, their computational analysis, and the development of robust and scalable reasoning algorithms. More recently, there is also renewed interest in the use of rules and ontologies in database applications, as witnessed by many new works on technologies such as Ontology-Based Data Access, existential rules, query rewriting, and even Datalog optimization.

The International Conference on Web Reasoning and Rule Systems has developed into a major forum for discussion and dissemination of new results on relevant topics within this area. Since the first edition of the conference in 2007, RR papers have been addressing a wide variety of problems in Web reasoning and rule systems, spanning research areas from computational logic and artificial intelligence to databases and Web technology. The conference is devoted to both theoretical and practical aspects of these subjects, and continues to attract the world's leading experts in the field. Further information can be found on the RR website at <http://www.rr-conference.org/>.

This volume contains the papers presented at RR 2012: The 6th International Conference on Web Reasoning and Rule Systems, held in Vienna, Austria, during September 10–12, 2012. The conference received 42 submissions (involving authors from 19 countries), of which 33 were research papers (RPs), and nine were technical communications (TCs), a more concise paper format that was introduced for the first time this year. TCs provide the opportunity to present a wider range of results and ideas that are of interest to the RR audience, including reports about recent own publications, position papers, and previews of ongoing work. In a rigorous reviewing process, 12 RPs were selected for publication (36% of 33 submitted RPs), while another 15 submissions were accepted as TCs.

The program of RR 2012 featured invited talks by Gerhard Brewka, Tommaso Di Noia, Phokion Kolaitis, and Robert Kowalski. Extended abstracts of the talks of Gerhard Brewka and Tommaso Di Noia are included in this volume. The talk of Phokion Kolaitis was a joint keynote with the Second Datalog 2.0 Workshop; the talk of Robert Kowalski was enabled in cooperation with the 4th International Conference on Computational Models of Argument (COMMA 2012) and Datalog 2.0. We want to thank all invited speakers for their contribution.

This year's conference also continued the successful cooperation with the Reasoning Web Summer School, which was again held in the week before RR. A Doctoral Consortium provided an additional opportunity for doctoral students in the area of Web reasoning to present their work and research plans, and to

receive extensive feedback from leading scientist in the field. This volume includes five research summaries of doctoral students that were selected for presentation at the conference.

RR 2012 received the largest number of submissions since the first RR in 2007, while also featuring one of the shortest reviewing periods in the history of the conference. Managing this was only possible with the help of an exceptionally diligent and professional Program Committee. Every submission received at least three reviews, sometimes after extensive internal discussions. We would like to thank all reviewers for their invaluable efforts.

A number of people were involved in organizing this conference. We would like to thank our General Chair, Pascal Hitzler, as well as Alessandra Mileo, who chaired the Doctoral Consortium, and Francesco Calimeri, who acted as a Publicity Chair. The local organizers Thomas Eiter and Thomas Krennwallner and their team did a magnificent job with the organization of the event. We further thank all organizers of the co-located events COMMA, DEXA, Datalog 2.0, and the Reasoning Web Summer School, who supported the orchestration of these events in the context of the Vienna Logic Weeks 2012. We also thank Marco Maratea for his very successful work as Sponsorship Chair, and we gratefully acknowledge the support of our sponsors. In particular, we thank the main conference sponsors: the *Artificial Intelligence Journal*, the Association for Logic Programming, the Digital Enterprise Research Institute at the National University of Ireland in Galway, the *Dipartimento di Informatica, Sistemistica e Telematica* of the University of Genoa (DIST), the National Science Foundation, Siemens AG Austria, the Vienna Center for Logic and Algorithms, and the Wolfgang Pauli Institute Vienna. As usual, EasyChair provided a convenient and efficient platform for preparing the program and these proceedings. Finally, thanks are due to all authors and participants of RR 2012; we hope that their stay in Vienna was profitable and enjoyable.

September 2012

Markus Krötzsch  
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