Editorial


ISWC 2003 saw the number of submitted papers more than double compared to the previous year, with 283 submissions. Of these, 262 were submitted to the research track, 21 to the industrial track. After a thorough reviewing process, 49 research papers and 9 industrial papers were accepted. Top-ranked research papers were invited to submit extended versions for a second rigorous reviewing process, and the top five high-quality papers are included in this special issue, along with a discussion of the winning application in the 2003 Semantic Web Challenge.

The conference itself was well attended, with some 500 attendees—again, doubling the previous year’s figures—in packed rooms witnessing the steadily accelerating interest in Semantic Web research. The topics of the papers presented in this collection demonstrate the breadth of research within the Semantic Web; their quality reflects a corresponding depth.

The issue of languages continues to dominate the Semantic Web arena. The Web Ontology Language OWL is a key topic for discussion in two of the papers here: “Contextualizing Ontologies” by Bouquet et al., and “Reducing OWL Entailment to Description Logic Satisfiability” by Horrocks et al., while RDF Schema is the focus of “Viewing the Semantic Web Through RVL Lenses” by Magkanaraki et al.

Bouquet et al. describe Context OWL (C-OWL), an extension of OWL to allow for the representation of contexts—local models that encode a party’s subjective view of a domain. Such an approach is useful for those applications where the core problem is the use and management of local and autonomous representations with a need for a limited and controlled form of sharing.

Horrocks et al. show how ontology entailment for the OWL DL and Lite sub-species can be reduced to knowledge base satisfiability in an appropriate Description Logic, allowing the use of highly optimised DL reasoners to provide efficient reasoning services for OWL.

In “Viewing the Semantic Web Through RVL Lenses”, Magkanaraki et al. introduce a full-fledge view definition language, RVL, for creating virtual RDF/S resource descriptions and schemas. The provision of such views aids in allowing users to access resources using their own terminology.

The increasing emphasis on Web services is reflected in Sirin et al.’s “HTN Planning for Web Service Composition Using SHOP2”, investigating the use of AI planning techniques to support automated composition of Web Services described using OWL-S.

A return to one of the original visions of the Semantic Web as a knowledge base and question answering service is shown in the fifth of the research papers. Providing explanation and bringing transparency to question answering is the aim in “Explaining Answers from the Semantic Web: The Inference Web Approach” by McGuinness et al. The paper discusses requirements and use cases for explanation, and describes an infrastructure—the Inference Web framework—intended to meet those requirements.

Finally, we must not forget that the Semantic Web is an area where success will be judged largely in terms of applications. This is highlighted by the inclusion of a paper describing the winner of the 2003 Semantic Web Challenge. The challenge was to build an online application illustrating the benefits of Semantic Web technology. In “Walking Through CS AKTive Space:
a demonstration of an integrated Semantic Web Application”, Shadbolt et al. describe a Semantic Web application that allows users to investigate the domain of UK University-based research in Computer Science. This paper offers an early view of the Web as a knowledge base.

The papers in this special issue offer concrete evidence of the progress that is being made in Semantic Web research and the accompanying development of technology. The Semantic Web journal looks forward to further special issues from future ISWC conferences.

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