Foreword

This volume contains the papers presented at the *5th International Workshop on Uncertainty Reasoning for the Semantic Web (URSW 2009)*, held as a part of the *8th International Semantic Web Conference (ISWC 2009)* at the Westfields Conference Center near Washington, DC, USA, October 26, 2009. It contains 6 technical papers and 3 position papers, which were selected in a rigorous reviewing process, where each paper was reviewed by at least four program committee members.

The International Semantic Web Conference is a major international forum for presenting visionary research on all aspects of the Semantic Web. The International Workshop on Uncertainty Reasoning for the Semantic Web is an exciting opportunity for collaboration and cross-fertilization between the uncertainty reasoning community and the Semantic Web community. Effective methods for reasoning under uncertainty are vital for realizing many aspects of the Semantic Web vision, but the ability of current-generation Web technology to handle uncertainty is extremely limited. Recently, there has been a groundswell of demand for uncertainty reasoning technology among Semantic Web researchers and developers. This surge of interest creates a unique opening to bring together two communities with a clear commonality of interest but little history of interaction. By capitalizing on this opportunity, URSW could spark dramatic progress toward realizing the Semantic Web vision.

Audience: The intended audience for this workshop includes the following: (1) researchers in uncertainty reasoning technologies with interest in Semantic Web and Web-related technologies; (2) Semantic Web developers and researchers; (3) people in the knowledge representation community with interest in the Semantic Web; (4) ontology researchers and ontological engineers; (5) Web services researchers and developers with interest in the Semantic Web; and (6) developers of tools designed to support Semantic Web implementation, e.g., Jena, Protégé, and Protégé-OWL developers.

Topics: We intended to have an open discussion on any topic relevant to the general subject of uncertainty in the Semantic Web (including fuzzy theory, probability theory, and other approaches). Therefore, the following list should be just an initial guide: (1) syntax and semantics for extensions to Semantic Web languages to enable representation of uncertainty; (2) logical formalisms to support uncertainty in Semantic Web languages; (3) probability theory as a means of assessing the likelihood that terms in different ontologies refer to the same or similar concepts; (4) architectures for applying plausible reasoning to the problem of ontology mapping; (5) using fuzzy approaches to deal with imprecise concepts within ontologies; (6) the concept of a probabilistic ontology and its relevance to the Semantic Web; (7) best practices for representing uncertain, incomplete, ambiguous, or controversial information in the Semantic Web; (8) the role of uncertainty as it relates to Web services; (9) interface protocols with support for uncertainty as a means to improve interoperability among Web services; (10) uncertainty reasoning techniques applied to trust issues in the Semantic Web; (11) existing implementations of uncertainty reasoning tools in the context of the Semantic Web; (12) issues and techniques for integrating tools for representing and reasoning with uncertainty; and (13) the future of uncertainty reasoning for the Semantic Web.

We wish to thank all authors who submitted papers and all workshop participants for fruitful discussions. We would like to thank the program committee members and external referees for their timely expertise in carefully reviewing the submissions.

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