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# Scalable Uncertainty Management

6th International Conference, SUM 2012  
Marburg, Germany, September 17-19, 2012  
Proceedings

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# Preface

In many applications nowadays, information systems are becoming increasingly complex, open, and dynamic. They involve massive amounts of data, generally issued from different sources. Moreover, information is often inconsistent, incomplete, heterogeneous, and pervaded with uncertainty. The annual International Conference on Scalable Uncertainty Management (SUM) has grown out of this wide-ranging interest in the management of uncertainty and inconsistency in databases, the Web, the Semantic Web, and artificial intelligence applications.

The SUM conference series aims at bringing together researchers from these areas by highlighting new methods and technologies devoted to the problems raised by the need for a meaningful and computationally tractable management of uncertainty when huge amounts of data have to be processed. The First International Conference on Scalable Uncertainty Management (SUM 2007) was held in Washington DC, USA, in October 2007. Since then, the SUM conferences have taken place successively in Naples (Italy) in 2008, again in Washington DC (USA) in 2009, in Toulouse (France) in 2010, and in Dayton (USA) in 2011.

This volume contains the papers presented at the 6th International Conference on Scalable Uncertainty Management (SUM 2012), which was held in Marburg, Germany, during September 17–19, 2012. This year, SUM received 75 submission. Each paper was reviewed by at least three Program Committee members. Based on the review reports and discussion, 41 papers were accepted as regular papers, and 13 papers as short papers.

In addition, the conference greatly benefited from invited lectures by three world-leading researchers: Joachim Buhmann (ETH Zürich, Switzerland) on “Context Sensitive Information: Which Bits Matter in Data?”, Minos Garofalakis (Technical University of Crete, Greece) on “HeisenData: Towards Next-Generation Uncertain Database Systems”, and Lawrence Hunter (University of Colorado, USA) on “Knowledge-Based Analysis of Genome-Scale Data”. Moreover, Sébastien Destercke (CNRS, Université de Technologie de Compiègne) was kind enough to accept our invitation for an introductory talk that was conceived as an overview of different approaches to uncertainty modeling in modern information systems.

In closing, we would like to express our gratitude to several people and institutions, who all helped to make SUM 2012 a success:

- all the authors of submitted papers, the invited speakers, and all the conference participants for fruitful discussions;
- the members of the Program Committee, as well as the additional reviewers, who devoted time to the reviewing process;
- Alfred Hofmann and Springer for providing continuous assistance and ready advice whenever needed;

- the European Society for Fuzzy Logic and Technology (EUSFLAT) and the Marburg Center for Synthetic Microbiology (SYNMIKRO) for sponsoring and financial support;
- the Philipps-Universität Marburg for providing local facilities;
- the creators and maintainers of the conference management system EasyChair (<http://www.easychair.org>).

July 2012

Eyke Hüllermeier  
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