

## Preface

This volume contains the proceedings of ICCS 2014, the 21st International Conference on Conceptual Structures held on July 26–29, 2014 in Iași, Romania.

The International Conferences on Conceptual Structures<sup>1</sup> were held annually in Europe, Australia, and North America since 1993. Their focus is on the formal analysis and representation of conceptual knowledge with applications to artificial intelligence, computational linguistics, and related areas of computer science.

The ICCS conferences evolved from a series of seven annual workshops on conceptual graphs, starting with an informal gathering hosted by John Sowa in 1986. For the seventh conceptual graphs workshop in 1992, the informal workshop notes were upgraded to reviewed and edited proceedings published in the Springer-Verlag series of Lecture Notes in Artificial Intelligence.

Recently, graph-based knowledge representation and reasoning (KRR) paradigms have been receiving more and more attention. The aim of the ICCS 2014 conference is to build upon its long standing expertise in graph-based KRR and focus on providing modeling, formal and application results of graph-based systems. The new steering committee, elected in 2013 by the historical members of ICCS, has decided to enlarge the themes covered by the conference with the different research domains currently involved in graph-based KRR. The program committee has thus been redefined in order to include recognized researchers in fields such as Knowledge Representation and Information Integration, Knowledge Representation and Uncertainty, Knowledge Representation and Alignment, Semantic Web and Web of Data.

The proceedings start with a reprint of the paper *Conceptual Graphs are also Graphs* by Michel Chein and Marie-Laure Mugnier from 1995. Although this work is an important contribution and has been cited frequently, it never got published to an international audience. Therefore, we decided to honor its contribution by including it as a historic paper. The conference also included three invited talks from distinguished speakers whose accompanying extended abstracts are part of this volume: Jonathan Ben-Naim from Université Paul Sabatier, Toulouse, France presented his work on *Argumentation-based paraconsistent logics*, Jan Ramon from Katholieke Universiteit Leuven, Belgium gave a talk on *Towards a framework for learning from networked data*, and Milos Stojakovic from the University of Novi Sad, Serbia introduced *Games on graphs*.

40 research papers were submitted to ICCS 2014 for peer review. Each paper was reviewed by at least three program committee members. The top-ranked 17 papers (43%) were selected competitively for this volume. Besides the regular research track, the conference also included an industry track. The aim of this track was to enable the participants to present their current research projects in order to encourage and foster collaboration and joint project proposals. After reviewing, 6 of the 10 submissions to the industry track were accepted and published as short papers.

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<sup>1</sup> <http://conceptualstructures.org/confs.htm>

In 2014 ICCS was held in Iași, Romania at the Al. I. Cuza University, the oldest higher education institution in Romania. The university was founded one year after the establishment of the Romanian state in 1860. Iași has a long tradition in higher education and has traditionally been one of the leading centers of Romanian social, cultural, academic and artistic life.

The conference included a one-day *Workshop on integration of Heterogeneous dAta sources and onTologiEs in Life Science and Environment* whose proceedings are published separately in the CEUR-WS series.

ICCS 2014 was sponsored by Amazon Romania and BitDefender. We cordially thank the sponsors for their support! We are also thankful to Alexandru Ioan Cuza University for providing the facilities for the conference, the ALUMNI foundation for helping to organize sponsoring, the Faculty of Informatics in Iași for its local support, the travel agency Travis for taking care of many arrangements, and EasyChair for enabling a smooth submission and reviewing process.

We wish to thank the organizing committee individually: Cornelius Croitoru, Lenuța Alboaiie and Corina Forăscu from Al. I. Cuza University, Alin Patru from Travis, and collectively the Editorial Board and Program Committee members.

May 2014

Nathalie Hernandez  
Robert Jäschke  
Madalina Croitoru

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