

Preface

This volume contains the proceedings of the 20th International Conference on Knowledge Engineering and Knowledge Management (EKAW 2016), held in Bologna, Italy, November 19–23, 2016.

This edition of the conference was specifically concerned with the impact of space and time on knowledge representation, and what we chose to call “evolving knowledge.” Knowledge engineering has classically been about creating static, universal representations. Yet the world is rarely static: Everything changes, including the models, and real-world systems need to evolve along with the surrounding world. Also, what makes some representations valid in some contexts may make them invalid elsewhere (e.g., jurisdiction for laws).

This special focus concerns all aspects of the management and acquisition of knowledge representations of evolving, contextual, and local models. This includes change management, trend detection, model evolution, streaming data and stream reasoning, event processing, time- and space-dependent models, contextual and local knowledge representations, etc. We also wanted to put a special emphasis on the evolvability and localization of knowledge and the correct usage of these limits.

In addition to this specific focus, EKAW as usual covered all aspects of eliciting, acquiring, modeling, and managing knowledge, the construction of knowledge-intensive systems and services for the Semantic Web, knowledge management, e-business, natural language processing, intelligent information integration, personal digital assistance systems, and a variety of other related topics.

For the main conference we invited submissions for research papers that present novel methods, techniques, or analysis with appropriate empirical or other types of evaluation, as well as in-use papers describing novel applications of knowledge management and engineering in real environments and experience reports. We also invited submissions of position papers describing novel and innovative ideas, or problem analyses, that are still in an early stage but may guide future research in the area.

In addition to the regular conference submission resulting in a Springer conference proceedings paper in this book, the authors of the best EKAW papers were invited to submit an extended version of the paper to a *Semantic Web Journal* (IOS Press) special issue to be published in 2017. The extended papers will go through a new review process and it should be noted that the journal follows an open review process, providing for a very transparent evaluation of the submissions.

Overall, we received 226 abstract submissions of which 171 were in the end accompanied by a valid paper submission and included in the review process. The reviewing was performed by a Program Committee of 127 researchers in the field and the two Program Chairs. Each paper received at least three reviews, and we specifically thank the reviewers for engaging in lively discussions, especially when there were conflicting opinions on papers. In total, 51 submissions were accepted by the Program

Committee (30 % overall acceptance rate), out of which four are in-use papers and one is a position paper. All papers are present in this volume as full-length papers. However, in order to fit this high number of papers into the single-session model of the EKAW conference, we had to select a number of papers for shorter presentations, which means that the conference program included 30 long presentations, and 21 shorter presentations.

To complement the program, we invited three distinguished keynote speakers:

- Luc Steels (Institut de Biologia Evolutiva, Barcelona, Spain) presented a talk entitled “How Much Are Our Representations of Knowledge Influenced by Our Languages?”
- Chris Welty (Sr. Research Scientist, Google, USA) gave a talk entitled “Towards an Embedded Theory of Truth”
- Francesca Rossi (IBM Research and University of Padova, Italy) gave a talk titled “From Data to Knowledge: Trust and Ethics in Symbiotic AI/Human Systems”

The program chairs of EKAW 2016 were Fabio Vitali from the University of Bologna, Italy, and Eva Blomqvist from Linköping University, Sweden. The EKAW 2016 program also included a Doctoral Consortium that gave PhD students an opportunity to present their research ideas and results in a stimulating environment, to get feedback from mentors who are experienced research scientists in the community, to explore issues related to academic and research careers, and to build relationships with other PhD students from around the world. The Doctoral Consortium was intended for students at each stage of their PhD. All accepted presenters had an opportunity to present their work to an international audience, to be paired with a mentor, and to discuss their work with experienced scientists from the research community. The Doctoral Consortium was organized by Mathieu d’Aquin from the Open University, UK, and Valentina Presutti from ISTC-CNR in Italy.

In addition to the main research tracks, EKAW 2016 hosted four satellite workshops and two tutorials.

Workshops:

- OWLED - ORE 2016 — the 13th OWL: Experiences and Directions Workshop and 5th OWL Reasoner Evaluation Workshop
- EKM — the Second International workshop on Educational Knowledge Management
- Drift-a-LOD — the First workshop on Detection, Representation and Management of Concept Drift in Linked Open Data
- LK&SW-2016 — the Third Workshop on Legal Knowledge and the Semantic Web

Tutorials:

- Mapping Management and Expressive Ontologies in Ontology-Based Data Access, by Diego Calvanese, Benjamin Cogrel, and Guohui Xiao
- Modeling, Generating, and Publishing Knowledge as Linked Data, by Anastasia Dimou, Pieter Heyvaert, and Ruben Verborgh

The workshop and tutorial program was chaired by Matthew Horridge, Stanford University, USA, as well as Jun Zhao, University of Lancaster, UK.

Finally, EKAW 2016 also featured a demo and poster session. We encouraged contributions that were likely to stimulate critical or controversial discussions about any of the areas of the EKAW conference series. We also invited developers to showcase their systems and the benefit they can bring to a particular application. The demo and poster program of EKAW 2016 was chaired by Tudor Groza from the Garvan Institute of Medical Research, Australia, and Mari Carmen Suárez-Figueroa of the Universidad Politécnica de Madrid, Spain.

The conference organization also included Silvio Peroni, University of Bologna, Italy, as the sponsorship chair, Paolo Ciancarini, Angelo Di Iorio, and Silvio Peroni all from the University of Bologna, Italy, took care of local arrangements, Andrea Giovanni Nuzzolese, ISTC-CNR, Italy, acted as Web presence chair, and Francesco Poggi, University of Bologna, Italy, acted as proceedings chair. Paolo Ciancarini, University of Bologna, Italy, was the general chair of EKAW 2016.

Thanks to everybody, including attendees at the conference, for making EKAW 2016 a successful event.

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Eva Blomqvist
Paolo Ciancarini
Francesco Poggi
Fabio Vitali

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