Lecture Notes in Artificial Intelligence 8876

Subseries of Lecture Notes in Computer Science

LNAI Series Editors

Randy Goebel
University of Alberta, Edmonton, Canada
Yuzuru Tanaka
Hokkaido University, Sapporo, Japan
Wolfgang Wahlster
DFKI and Saarland University, Saarbrücken, Germany

LNAI Founding Series Editor

Joerg Siekmann
DFKI and Saarland University, Saarbrücken, Germany

Krzysztof Janowicz Stefan Schlobach
Patrick Lambrix Eero Hyvönen (Eds.)

Knowledge Engineering and Knowledge Management

19th International Conference, EKAW 2014
Linköping, Sweden, November 24-28, 2014
Proceedings

Springer

Volume Editors

Krzysztof Janowicz
University of California, Santa Barbara, CA, USA
E-mail: janowicz@ucsb.edu

Stefan Schlobach
VU University Amsterdam, The Netherlands
E-mail: k.s.schlobach@vu.nl

Patrick Lambrix
University of Linköping, Sweden
E-mail: patrick.lambrix@liu.se

Eero Hyvönen
Aalto University, Finland
E-mail: eero.hyvonen@aalto.fi

ISSN 0302-9743 e-ISSN 1611-3349
ISBN 978-3-319-13703-2 e-ISBN 978-3-319-13704-9
DOI 10.1007/978-3-319-13704-9
Springer Cham Heidelberg New York Dordrecht London

Library of Congress Control Number: 2014955256

LNCS Sublibrary: SL 7 – Artificial Intelligence

© Springer International Publishing Switzerland 2014
This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. Exempted from this legal reservation are brief excerpts in connection with reviews or scholarly analysis or material supplied specifically for the purpose of being entered and executed on a computer system, for exclusive use by the purchaser of the work. Duplication of this publication or parts thereof is permitted only under the provisions of the Copyright Law of the Publisher's location, in ist current version, and permission for use must always be obtained from Springer. Permissions for use may be obtained through RightsLink at the Copyright Clearance Center. Violations are liable to prosecution under the respective Copyright Law.
The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.
While the advice and information in this book are believed to be true and accurate at the date of publication, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Preface

This volume contains the proceedings of the 19th International Conference on Knowledge Engineering and Knowledge Management (EKAW 2014), held in Linköping, Sweden, during November 24–28, 2014. This was the first EKAW conference in a Nordic country. It was concerned with 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.

The special focus of EKAW 2014 was *Diversity*. Today, multi-thematic, multi-perspective, multi-cultural, multi-media, and multi-dimensional data are available at an ever-increasing spatial, temporal, and thematic resolution. This allows us to gain a more holistic understanding of complex physical and social processes that cannot be explained from within one domain alone. While scale and complexity of information has always attracted attention, its heterogeneity in nature and usage are only now being investigated more systematically. To publish, retrieve, clean, reuse, and integrate these data requires novel knowledge engineering and management methods. Thus, EKAW 2014 put a special emphasis on this diversity of knowledge and its usage.

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 applications of knowledge management and engineering in real environments. We also invited submissions of position papers describing novel and innovative ideas that are still in an early stage. In addition to the regular conference submission, we established a combined conference/journal submission track. Papers accepted for the combined track were published as regular research papers in this EKAW 2014 Springer conference proceedings and authors were also invited to submit an extended version of their manuscript for a fast-track in the *Semantic Web* journal (SWJ) published by IOS Press. The journal follows an open review process. All submitted papers were publicly available during the review phase and the reviews and final decisions were posted online, thereby making the review process more transparent.

Overall, we received 168 abstract submissions, 138 which were submitted as papers. We are very glad to report that 45 author teams decided to submit to the combined track, thus making their papers and reviews publicly available. These papers were either accepted for the conference and journal, for the conference only, or rejected for both. In total, 45 submissions were accepted by the Program Committee: seven for the combined EKAW/SWJ track, 17 full papers for the conference only, 17 as short(er) papers, and four position papers.

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

- Pascal Hitzler (Wright State University, Dayton, Ohio, USA) presented a talk on "Ontology Design Patterns for Large-Scale Data Interchange and Discovery."
- Arianna Betti (University of Amsterdam, The Netherlands) gave a talk on "Concepts in Motion."
- Oscar Corcho (Universidad Politecnica de Madrid, Spain) discussed the question "Ontology Engineering for and by the Masses: Are We Already There?"

The program chairs of EKAW 2014 were Krzysztof Janowicz from the University of California, Santa Barbara, USA, and Stefan Schlobach from the Vrije Universiteit Amsterdam, The Netherlands.

The EKAW 2014 program included a Doctoral Consortium that provided 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 Ying Ding from the Indiana University Bloomington, USA, and Chiara Ghidini from The Fondazione Bruno Kessler in Italy.

In addition to the main research track, EKAW 2014 hosted four satellite workshops and two tutorials:

Workshops

1. *VISUAL2014*. International Workshop on Visualizations and User Interfaces for Knowledge Engineering and Linked Data Analytics
2. *EKM1*. The First International Workshop on Educational Knowledge Management
3. *ARCOE-Logic 201*4. The 6th International Workshop on Acquisition, Representation and Reasoning about Context with Logic
4. *WaSABi2014*. The Third International Workshop on Semantic Web Enterprise Adoption and Best Practice

Tutorials

1. *K4D*: Managing and Sharing Knowledge in Rural Parts of the World. By Stefan Schlobach, Victor de Boer, Christophe Guret, Stéphane Boyera, and Philippe Cudré-Mauroux.
2. *Language Resources and Linked Data*. By Jorge Gracia, Asuncion Gomez-Perez, Sebastian Hellmann, John McCrae, Roberto Navigli, and Daniel Vila-Suero.

The workshop and tutorial programs were chaired by Eva Blomqvist from Linköping University, Sweden, as well as Valentina Presutti from STLab ISTC-CNR, Italy.

Finally, EKAW 2014 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 programs of EKAW 2014 were chaired by Guilin Qi from the Southeast University, China, and Uli Sattler from the University of Manchester, UK.

The conference organization also included Axel-Cyrille Ngonga Ngomo from the Universität Leipzig, Germany, as the sponsorship chair, Henrik Eriksson and Patrick Lambrix both from Linköping University, Sweden, took care of local arrangements, and Zlatan Dragisic and Valentina Ivanova from Linköping University, Sweden, acted as Web presence chairs. Eero Hyvönen from Aalto University, Finland, and Patrick Lambrix from Linköping University, Sweden, were the general chairs of EKAW 2014.

Thanks to everybody, including attendees at the conference, for making EKAW 2014 a successful event.

November 2014

Patrick Lambrix
Eero Hyvönen
Krzysztof Janowicz
Stefan Schlobach

Organization

The 19th EKAW 2014 conference in Linköping was organized by the following team.

Executive Committee

General Chairs

Patrick Lambrix	Linköping University, Sweden
Eero Hyvönen	Aalto University, Finland

Program Chairs

Krzysztof Janowicz	University of California, Santa Barbara, USA
Stefan Schlobach	VU University, The Netherlands

Workshop and Tutorial Chairs

Eva Blomqvist	Linköping University, Sweden
Valentina Presutti	STLab ISTC-CNR, Italy

Demo and Poster Chairs

Guilin Qi	Southeast University, China
Uli Sattler	University of Manchester, UK

Sponsorship Chair

Axel-Cyrille Ngomo	Leipzig University, Germany

Doctoral Consortium Chairs

Ying Ding	Indiana University Bloomington, USA
Chiara Ghidini	FBK, Italy

Local Organization Chairs

Patrick Lambrix	Linköping University, Sweden
Henrik Eriksson	Linköping University, Sweden

Web Presence Chairs

Zlatan Dragisic	Linköping University, Sweden
Valentina Ivanova	Linköping University, Sweden

Program Committee

Benjamin Adams	The University of Auckland, Australia
Lora Aroyo	VU University Amsterdam, The Netherlands
Sören Auer	University of Bonn and Fraunhofer IAIS, Germany
Nathalie Aussenac-Gilles	IRIT Toulouse, France
Andrea Ballatore	UCD Dublin, Ireland
Wouter Beek	VU University Amsterdam, The Netherlands
Olivier Bodenreider	US National Library of Medicine, USA
Joost Breuker	University of Amsterdam, The Netherlands
Christopher Brewster	Aston University, Birmingham, UK
Liliana Cabral	CSIRO, Australia
Vinay Chaudhri	SRI International, USA
Michelle Cheatham	Wright State University in Dayton, Ohio, USA
Paolo Ciancarini	University of Bologna, Italy
Philipp Cimiano	University of Bielefeld, Germany
Paul Compton	The University of New South Wales, Australia
Olivier Corby	Inria, France
Ronald Cornet	AMC - Universiteit van Amsterdam, The Netherlands
Claudia D'Amato	University of Bari. Italy
Mathieu D'Aquin	The Open University, UK
Aba-Sah Dadzie	University of Birmingham, UK
Victor de Boer	VU Amsterdam, The Netherlands
Stefan Decker	DERI Galway, Ireland
Daniele Dell'Aglio	DEI, Politecnico di Milano, Italy
Emanuele Della Valle	DEI, Politecnico di Milano, Italy
Klaas Dellschaft	University Koblenz-Landau, Germany
Zlatan Dragisic	Linköping University, Sweden
Henrik Eriksson	Linköping University, Sweden
Dieter Fensel	University of Innsbruck, Austria
Jesualdo Tomás Fernández-Breis	Universidad de Murcia, Spain
Antske Fokkens	VU Amsterdam, The Netherlands
Aldo Gangemi	Université Paris 13 and CNR-ISTC, France
Serge Garlatti	Telecom Bretagne, France
Dragan Gasevic	Athabasca University, Canada
Chiara Ghidini	FBK-irst, Italy
Luca Gilardoni	Quinary
Paul Groth	VU University Amsterdam, The Netherlands
Michael Gruninger	University of Toronto, Canada
Jon Atle Gulla	Norwegian University of Science and Technology, Norway

Christophe Guéret	Data Archiving and Networked Services (DANS)
Asunción Gómez-Pérez	Universidad Politécnica de Madrid, Spain
Peter Haase	fluid Operations
Harry Halpin	World Wide Web Consortium
Tom Heath	Open Data Institute
Martin Hepp	Bundeswehr University of Munich, Germany
Jesper Hoeksema	VU University Amsterdam, The Netherlands
Rinke Hoekstra	University of Amsterdam/VU University Amsterdam, The Netherlands
Aidan Hogan	Universidad de Chile, Chile
Matthew Horridge	Stanford University, USA
Andreas Hotho	University of Würzburg, Germany
Yingjie Hu	University of California, Santa Barbara, USA
Zhisheng Huang	Vrije University Amsterdam, The Netherlands
Antoine Isaac	Europeana and VU University Amsterdam, The Netherlands
Valentina Ivanova	Linköping University, Sweden
C. Maria Keet	University of Cape Town, South Africa
Adila A. Krisnadhi	Wright State University, USA, and Universitas Indonesia
Wolfgang Maass	Saarland University, Germany
Grant McKenzie	University of California, Santa Barbara, USA
Albert Meroño Peñuela	VU University Amsterdam, DANS, KNAW, The Netherlands
Peter Mika	Yahoo! Research
Michele Missikoff	IASI-CNR
Riichiro Mizoguchi	Japan Advanced Institute of Science and Technology
Dunja Mladenic	Jozef Stefan Institute, Slovenia
Andrea Moro	Sapienza, Università di Roma, Italy
Enrico Motta	Knowledge Media Institute, The Open University, UK
Raghavan Mutharaju	Kno.e.sis Center, Wright State University, USA
Axel-Cyrille Ngonga Ngomo	University of Leipzig, Germany
Vit Novacek	DERI, National University of Ireland, Galway
Jens Ortmann	Softplant GmbH
Matteo Palmonari	University of Milano-Bicocca, Italy
Viktoria Pammer	Know-Center Graz, Austria
Maryam Panahiazar	Kno.e.sis Center, Wright State University, USA
Sujan Perera	Kno.e.sis Center, Wright State University, USA
Wim Peters	University of Sheffield, UK
Mohammad Taher Pilevar	Student University
H. Sofia Pinto	Instituto Superior Tecnico

Axel Polleres	Vienna University of Economics and Business, Austria
Yannick Prié	LINA - University of Nantes, France
Guilin Qi	Southeast University
Ulrich Reimer	University of Applied Sciences St. Gallen, Switzerland
Chantal Reynaud	LRI, Université Paris-Sud, France
Laurens Rietveld	VU University Amsterdam, The Netherlands
Marco Rospocher	Fondazione Bruno Kessler, Italy
Sebastian Rudolph	Technische Universität Dresden, Germany
Marta Sabou	MODUL University of Vienna, Austria
Harald Sack	University of Potsdam, Germany
Simon Scheider	University of Münster, Germany
Kunal Sengupta	University of Sydney, Australia
Luciano Serafini	Fondazione Bruno Kessler, Italy
Elena Simperl	University of Southampton, UK
Derek Sleeman	University of Aberdeen, UK
Pavel Smrz	Brno University of Technology, Czech Republic
Steffen Staab	University of Koblenz-Landau, Germany
Heiner Stuckenschmidt	University of Mannheim, Germany
Rudi Studer	Karlsruher Institut für Technologie (KIT), Germany
Mari Carmen Suárez-Figueroa	Universidad Politécnica de Madrid, Spain
Ondrej Svab-Zamazal	University of Economics, Prague, Czech Republic
Vojtěch Svátek	University of Economics, Prague, Czech Republic
Valentina Tamma	University of Liverpool, UK
Annette Ten Teije	VU University Amsterdam, The Netherlands
Robert Tolksdorf	Freie Universität Berlin, Germany
Ioan Toma	University of Innsbruck, Austria
Francky Trichet	LINA - University of Nantes, France
Giovanni Tummarello	DERI, National University of Ireland Galway
Marieke Van Erp	VU University of Amsterdam, The Netherlands
Frank Van Harmelen	Vrije Universiteit Amsterdam, The Netherlands
Iraklis Varlamis	Harokopio University of Athens, Greece
Fabio Vitali	Università di Bologna, Italy
Johanna Völker	University of Mannheim, Germany
Hannes Werthner	Vienna University of Technology, Austria
Fouad Zablith	American University of Beirut, Lebanon

Additional Reviewers

Abu Helou, Mamoun
Bozzato, Loris
Costabello, Luca
Ell, Basil
Faerber, Michael
Fensel, Anna
Fleischhacker, Daniel
García, José María
Gentile, Anna Lisa
Hentschel, Christian
Huan, Gao
Kapanipathi, Pavan
Knuth, Magnus
Lasierra Beamonte, Nelia
Mosso, Pierluigi
Muñoz, Emir
Neidhardt, Julia
Nuzzolese, Andrea Giovanni
Petrucci, Giulio
Pinkel, Christoph
Pobiedina, Nataliia
Schreiber, Guus
Taglino, Francesco
Thalhammer, Andreas
Thomas, Christopher
Waitelonis, Joerg
Wijeratne, Sanjaya
Wu, Tianxing
Zhang, Lei

Keynote Papers

Concepts in Motion

Arianna Betti

Universiteit van Amsterdam
ariannabetti@gmail.com

Abstract. The history of ideas traces the development of ideas such as evolution, liberty, or science in human thought as represented in texts. Recent contributions [2] suggest that the increasing quantities of digitally available historical data can be of invaluable help to historians of ideas.

However, these and similar contributions usually apply generic computer methods, simple n-gram analyses and shallow NLP tools to historical textual material. This practice contrasts strikingly with the reality of research in the history of ideas and related fields such as history of science. Researchers in this area typically apply painstakingly fine-grained analyses to diverse textual material of extremely high conceptual density. Can these opposites be reconciled? In other words: Is a digital history of ideas possible?

Yes, I argue, but only by requiring historians of ideas to provide explicitly structured semantic framing of domain knowledge before investigating texts computationally (models in the sense of [1]), and to constantly re-input findings from the interpretive point of view in a process of semi-automatic ontology extraction.

This is joint work with Hein van den Berg.

References

1. Betti, A., van den Berg, H.: Modeling the History of Ideas. British Journal for the History of Philosophy 22(3) (2014) (forthcoming)
2. Michel, J.B., Yuan Kui, S., Aviva Presser, A., Veres, A., Gray, M.K., Pickett, J.P., Hoiberg, D.: Quantitative analysis of culture using millions of digitized books. Science 331(6014), 176–182 (2011)

Ontology Engineering for and by the Masses: Are We Already There?

Oscar Corcho

Universidad Politecnica de Madrid

Abstract. We can assume that most of the attendees to this conference have created or contributed to the development of at least one ontology, and many of them have several years of experience in ontology development. The area of ontology engineering is already quite mature, hence creating ontologies should not be a very difficult task. We have methodologies that guide us in the process of ontology development; we have plenty of techniques that we can use, from the knowledge acquisition stages to ontology usage; we have tools that facilitate the transition from our ontology conceptualizations to actual implementations, including support for tasks like debugging, documenting, modularising, reasoning, and a large etcétera. However, how many ontology developers are there now in the world? Are they hundreds, thousands, tens of thousands maybe? Not as many as we may like... In fact, whenever I setup an heterogeneous ontology development team in a domain, I still find lots of difficulties to get the team running at full speed and with high quality results. In this talk I will share some of my most recent experiences on the setup of several small ontology development teams, composed of a combination of city managers, policy makers and computer scientists, for the development of a set of ontologies for an upcoming technical norm on "Open Data for Smart Cities", and will discuss on the main success factors as well as threats and weaknesses of the process, with the hope that this can give some light towards making ontology engineering more accessible to all.

Ontology Design Patterns for Large-Scale Data Interchange and Discovery

Pascal Hitzler

Data Semantics (DaSe) Laboratory, Wright State University, USA
pascal.hitzler@wright.edu
http://www.pascal-hitzler.de

Abstract. Data and information integration remains a major challenge for our modern information-driven society whereby people and organizations often have to deal with large data volumes coming from semantically heterogeneous sources featuring significant variety between them. In this context, data integration aims to provide a unified view over data residing at different sources through a global schema, which can be formalized as an ontology. From the end-users perspective, the data integration problem can be seen as a data access problem whereby the emphasis is on how such a unified view should help the nontechnical end-users in accessing the data from such heterogeneous sources. Early efforts to solve these problems led to a number of relational database integration approaches which have been very useful in specific situations. Unfortunately, they still require very significant manual efforts in creating and maintaining the mappings between the global and local schema, as the resulting integrations are often rigid and not transferable to new application scenarios without investing even more human expert resources, and furthermore, the global schema expressivity is limited which makes it difficult for the end-users to pose ad-hoc queries for their information needs.

Ontology design patterns have been conceived as modular and reusable building blocks for ontology modeling. We argue that a principled use of ontology design patterns also improve large-scale data integration under heterogeneity, as compared to the use of a monolithic ontology as global schema. In particular, the adoption of ontology design patterns can simplify several key aspects of the ontology application life cycle, including knowledge acquisition from experts, collaborative modeling and updates, incorporation of different perspectives, data-model alignment, and social barriers to adoption.

We report on recent progress we have made with this approach as part of our work on improving data discovery in the Earth Sciences, and point out key challenges on the road ahead.

Acknowledgments. This work was supported by the National Science Foundation awards 1017225 III: Small: TROn – Tractable Reasoning with Ontologies, 1354778 EAGER: Collaborative Research: EarthCube Building Blocks, Leveraging Semantics and Linked Data for Geoscience Data Sharing and Discovery

(OceanLink), and 1440202 EarthCube Building Blocks: Collaborative Research: GeoLink – Leveraging Semantics and Linked Data for Data Sharing and Discovery in the Geosciences. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the National Science Foundation.

References

1. Cheatham, M., Hitzler, P.: String similarity metrics for ontology alignment. In: Alani, H., Kagal, L., Fokoue, A., Groth, P., Biemann, C., Parreira, J.X., Aroyo, L., Noy, N., Welty, C., Janowicz, K. (eds.) ISWC 2013, Part II. LNCS, vol. 8219, pp. 294–309. Springer, Heidelberg (2013)
2. Cheatham, M., Hitzler, P.: The properties of property alignment. In: Proceedings OM-2014, The Ninth International Workshop on Ontology Matching, at the 13th International Semantic Web Conference, ISWC 2014, Riva del Garda, Trentino, Italy (to appear, October 2014)
3. Hitzler, P., Janowicz, K.: Linked Data, Big Data, and the 4th Paradigm. Semantic Web 4(3), 233–235 (2013)
4. Hitzler, P., Krötzsch, M., Rudolph, S.: Foundations of Semantic Web Technologies. Chapman & Hall/CRC (2010)
5. Jain, P., Hitzler, P., Sheth, A.P., Verma, K., Yeh, P.Z.: Ontology alignment for linked open data. In: Patel-Schneider, P.F., Pan, Y., Hitzler, P., Mika, P., Zhang, L., Pan, J.Z., Horrocks, I., Glimm, B. (eds.) ISWC 2010, Part I. LNCS, vol. 6496, pp. 402–417. Springer, Heidelberg (2010)
6. Jain, P., Hitzler, P., Yeh, P.Z., Verma, K., Sheth, A.P.: Linked Data is Merely More Data. In: Brickley, D., Chaudhri, V.K., Halpin, H., McGuinness, D. (eds.) Linked Data Meets Artificial Intelligence, pp. 82–86. AAAI Press, Menlo Park (2010)
7. Janowicz, K., van Harmelen, F., Hendler, J.A., Hitzler, P.: Why the data train needs semantic rails. AI Magazine (to appear, 2014)
8. Janowicz, K., Hitzler, P.: The Digital Earth as knowledge engine. Semantic Web 3(3), 213–221 (2012)
9. Krisnadhi, A., Arko, R., Carbotte, S., Chandler, C., Cheatham, M., Finin, T., Hitzler, P., Janowicz, K., Narock, T., Raymond, L., Shepherd, A., Wiebe, P.: An ontology pattern for oceanograhic cruises: Towards an oceanograhper's dream of integrated knowledge discovery. Tech. Rep. 2014.1, OceanLink Technical Report (2014), http://pascal-hitzler.de/

Table of Contents

Automatic Ontology Population from Product Catalogs 1
Céline Alec, Chantal Reynaud-Delaître, Brigitte Safar, Zied Sellami, and Uriel Berdugo

Measuring Similarity in Ontologies: A New Family of Measures 13
Tahani Alsubait, Bijan Parsia, and Uli Sattler

Relation Extraction from the Web Using Distant Supervision 26
Isabelle Augenstein, Diana Maynard, and Fabio Ciravegna

Inductive Lexical Learning of Class Expressions 42
Lorenz Bühmann, Daniel Fleischhacker, Jens Lehmann, Andre Melo, and Johanna Völker

Question Generation from a Knowledge Base 54
Vinay K. Chaudhri, Peter E. Clark, Adam Overholtzer, and Aaron Spaulding

Inconsistency Monitoring in a Large Scientific Knowledge Base 66
Vinay K. Chaudhri, Rahul Katragadda, Jeff Shrager, and Michael Wessel

Pay-As-You-Go Multi-user Feedback Model for Ontology Matching 80
Isabel F. Cruz, Francesco Loprete, Matteo Palmonari, Cosmin Stroe, and Aynaz Taheri

Information Flow within Relational Multi-context Systems 97
Luís Cruz-Filipe, Graça Gaspar, and Isabel Nunes

Using Linked Data to Diversify Search Results a Case Study in Cultural Heritage 109
Chris Dijkshoorn, Lora Aroyo, Guus Schreiber, Jan Wielemaker, and Lizzy Jongma

Personalised Access to Linked Data 121
Milan Dojchinovski and Tomas Vitvar

Roadmapping and Navigating in the Ontology Visualization Landscape 137
Marek Dudáš, Ondřej Zamazal, and Vojtěch Svátek

aLDEAS: A Language to Define Epiphytic Assistance Systems 153
Blandine Ginon, Stéphanie Jean-Daubias, Pierre-Antoine Champin, and Marie Lefevre

Ontology Design Pattern Property Specialisation Strategies 165
Karl Hammar

The uComp Protégé Plugin: Crowdsourcing Enabled Ontology Engineering 181
Florian Hanika, Gerhard Wohlgenannt, and Marta Sabou

Futures Studies Methods for Knowledge Management in Academic Research 197
Sabine Kadlubek, Stella Schulte-Cörne, Florian Welter, Anja Richert, and Sabina Jeschke

Adaptive Concept Vector Space Representation Using Markov Chain Model 203
Zenun Kastrati and Ali Shariq Imran

A Core Ontology of Macroscopic Stuff 209
C. Maria Keet

Feasibility of Automated Foundational Ontology Interchangeability 225
Zubeida Casmod Khan and C. Maria Keet

Automating Cross-Disciplinary Defect Detection in Multi-disciplinary Engineering Environments 238
Olga Kovalenko, Estefanía Serral, Marta Sabou, Fajar J. Ekaputra, Dietmar Winkler, and Stefan Biffl

Querying the Global Cube: Integration of Multidimensional Datasets from the Web 250
Benedikt Kämpgen, Steffen Stadtmüller, and Andreas Harth

VOWL 2: User-Oriented Visualization of Ontologies 266
Steffen Lohmann, Stefan Negru, Florian Haag, and Thomas Ertl

What Is Linked Historical Data? 282
Albert Meroño-Peñuela and Rinke Hoekstra

A Quality Assurance Workflow for Ontologies Based on Semantic Regularities 288
Eleni Mikroyannidi, Manuel Quesada-Martínez, Dmitry Tsarkov, Jesualdo Tomás Fernández Breis, Robert Stevens, and Ignazio Palmisano

Adaptive Knowledge Propagation in Web Ontologies 304
Pasquale Minervini, Claudia d'Amato, Nicola Fanizzi, and Floriana Esposito

Using Event Spaces, Setting and Theme to Assist the Interpretation and Development of Museum Stories 320
Paul Mulholland, Annika Wolff, Eoin Kilfeather, and Evin McCarthy

Functional-Logic Programming for Web Knowledge Representation, Sharing and Querying 333
Matthias Nickles

Inferring Semantic Relations by User Feedback 339
Francesco Osborne and Enrico Motta

A Hybrid Semantic Approach to Building Dynamic Maps of Research Communities 356
Francesco Osborne, Giuseppe Scavo, and Enrico Motta

Logical Detection of Invalid SameAs Statements in RDF Data 373
Laura Papaleo, Nathalie Pernelle, Fatiha Saïs, and Cyril Dumont

Integrating Know-How into the Linked Data Cloud 385
Paolo Pareti, Benoit Testu, Ryutaro Ichise, Ewan Klein, and Adam Barker

A Dialectical Approach to Selectively Reusing Ontological Correspondences 397
Terry R. Payne and Valentina Tamma

Uncovering the Semantics of Wikipedia Pagelinks 413
Valentina Presutti, Sergio Consoli, Andrea Giovanni Nuzzolese, Diego Reforgiato Recupero, Aldo Gangemi, Ines Bannour, and Haïfa Zargayouna

Closed-World Concept Induction for Learning in OWL Knowledge Bases 429
David Ratcliffe and Kerry Taylor

YASGUI: Feeling the Pulse of Linked Data 441
Laurens Rietveld and Rinke Hoekstra

Tackling the Class-Imbalance Learning Problem in Semantic Web Knowledge Bases 453
Giuseppe Rizzo, Claudia d'Amato, Nicola Fanizzi, and Floriana Esposito

On the Collaborative Development of Application Ontologies: A Practical Case Study with a SME 469
Marco Rospocher, Elena Cardillo, Ivan Donadello, and Luciano Serafini

Relationship-Based Top-K Concept Retrieval for Ontology Search 485
Anila Sahar Butt, Armin Haller, and Lexing Xie

A Knowledge Driven Approach towards the Validation of Externally Acquired Traceability Datasets in Supply Chain Business Processes 503
Monika Solanki and Christopher Brewster

Testing OWL Axioms against RDF Facts: A Possibilistic Approach..... 519
Andrea G.B. Tettamanzi, Catherine Faron-Zucker, and Fabien Gandon

Quantifying the Bias in Data Links..... 531
Ilaria Tiddi, Mathieu d'Aquin, and Enrico Motta

Using Neural Networks to Aggregate Linked Data Rules 547
Ilaria Tiddi, Mathieu d'Aquin, and Enrico Motta

Temporal Semantics: Time-Varying Hashtag Sense Clustering..... 563
Giovanni Stilo and Paola Velardi

Using Ontologies: Understanding the User Experience 579
Paul Warren, Paul Mulholland, Trevor Collins, and Enrico Motta

A Conceptual Model for Detecting Interactions among Medical Recommendations in Clinical Guidelines: A Case-Study on Multimorbidity 591
Veruska Zamborlini, Rinke Hoekstra, Marcos da Silveira, Cédric Pruski, Annette ten Teije, and Frank van Harmelen

Learning with Partial Data for Semantic Table Interpretation..... 607
Ziqi Zhang

Author Index..... 619