

# Table of Contents – Part II

## Ontology Alignment and Modularization

Detecting and Correcting Conservativity Principle Violations in Ontology-to-Ontology Mappings . . . . .	1
<i>Alessandro Solimando, Ernesto Jiménez-Ruiz, and Giovanna Guerrini</i>	
Towards Annotating Potential Incoherences in BioPortal Mappings . . . . .	17
<i>Daniel Faria, Ernesto Jiménez-Ruiz, Catia Pesquita, Emanuel Santos, and Francisco M. Couto</i>	
Conference v2.0: An Uncertain Version of the OAEI Conference Benchmark . . . . .	33
<i>Michelle Cheatham and Pascal Hitzler</i>	
Fast Modularisation and Atomic Decomposition of Ontologies Using Axiom Dependency Hypergraphs . . . . .	49
<i>Francisco Martín-Recuerda and Dirk Walther</i>	
A Study on the Atomic Decomposition of Ontologies . . . . .	65
<i>Matthew Horridge, Jonathan M. Mortensen, Bijan Parsia, Ulrike Sattler, and Mark A. Musen</i>	
<b>Querying</b>	
Structural Properties as Proxy for Semantic Relevance in RDF Graph Sampling . . . . .	81
<i>Laurens Rietveld, Rinke Hoekstra, Stefan Schlobach, and Christophe Guéret</i>	
Holistic and Compact Selectivity Estimation for Hybrid Queries over RDF Graphs . . . . .	97
<i>Andreas Wagner, Veli Bicer, Thanh Tran, and Rudi Studer</i>	
Querying Factorized Probabilistic Triple Databases . . . . .	114
<i>Denis Krompaß, Maximilian Nickel, and Volker Tresp</i>	
Ontology Search: An Empirical Evaluation . . . . .	130
<i>Anila Sahar Butt, Armin Haller, and Lexing Xie</i>	

## Reasoning

Pushing the Boundaries of Tractable Ontology Reasoning . . . . .	148
<i>David Carral, Cristina Feier, Bernardo Cuenca Grau, Pascal Hitzler, and Ian Horrocks</i>	
Effective Computation of Maximal Sound Approximations of Description Logic Ontologies . . . . .	164
<i>Marco Console, Jose Mora, Riccardo Rosati, Valerio Santarelli, and Domenico Fabio Savo</i>	
Abstraction Refinement for Ontology Materialization . . . . .	180
<i>Birte Glimm, Yevgeny Kazakov, Thorsten Liebig, Trung-Kien Tran, and Vincent Vialard</i>	
Goal-Directed Tracing of Inferences in EL Ontologies . . . . .	196
<i>Yevgeny Kazakov and Pavel Klinov</i>	

## Semantic Infrastructures and Streams

Semantic Web Application Development with LITEQ . . . . .	212
<i>Martin Leinberger, Stefan Scheglmann, Ralf Lämmel, Steffen Staab, Matthias Thimm, and Evelyne Viegas</i>	
Semantic-Based Process Analysis . . . . .	228
<i>Chiara Di Francescomarino, Francesco Corcoglioniti, Mauro Dragoni, Piergiorgio Bertoli, Roberto Tiella, Chiara Ghidini, Michele Nori, and Marco Pistore</i>	
Efficient RDF Interchange (ERI) Format for RDF Data Streams . . . . .	244
<i>Javier D. Fernández, Alejandro Llaves, and Oscar Corcho</i>	

## Sensors

Knowledge-Driven Activity Recognition and Segmentation Using Context Connections . . . . .	260
<i>Georgios Meditskos, Efstratios Kontopoulos, and Ioannis Kompatsiaris</i>	
A Use Case in Semantic Modelling and Ranking for the Sensor Web . . . . .	276
<i>Liliana Cabral, Michael Compton, and Heiko Müller</i>	
Semantic Traffic Diagnosis with STAR-CITY: Architecture and Lessons Learned from Deployment in Dublin, Bologna, Miami and Rio . . . . .	292
<i>Freddy Lécué, Robert Tucker, Simone Tallevi-Diotallevi, Rahul Nair, Yiannis Gkoufas, Giuseppe Liguori, Mauro Borioni, Alexandre Rademaker, and Luciano Barbosa</i>	

Adapting Semantic Sensor Networks for Smart Building Diagnosis . . . . .	308
<i>Joern Ploennigs, Anika Schumann, and Freddy Lécué</i>	

## Social Media

Semantic Patterns for Sentiment Analysis of Twitter . . . . .	324
<i>Hassan Saïf, Yulan He, Miriam Fernandez, and Harith Alani</i>	

Stretching the Life of Twitter Classifiers with Time-Stamped Semantic Graphs . . . . .	341
<i>Amparo Elizabeth Cano, Yulan He, and Harith Alani</i>	

Linked Open Data Driven Game Generation . . . . .	358
<i>Rob Warren and Erik Champion</i>	

## SPARQL Extensions

On the Semantics of SPARQL Queries with Optional Matching under Entailment Regimes . . . . .	374
<i>Egor V. Kostylev and Bernardo Cuenca Grau</i>	

Strategies for Executing Federated Queries in SPARQL1.1 . . . . .	390
<i>Carlos Buil-Aranda, Axel Polleres, and Jürgen Umbrich</i>	

Toward the Web of Functions: Interoperable Higher-Order Functions in SPARQL . . . . .	406
<i>Maurizio Atzori</i>	

## User Interaction and Personalization

Explass: Exploring Associations between Entities via Top- <i>K</i> Ontological Patterns and Facets . . . . .	422
<i>Gong Cheng, Yanan Zhang, and Yuzhong Qu</i>	

Expressive and Scalable Query-Based Faceted Search over SPARQL Endpoints . . . . .	438
<i>Sébastien Ferré</i>	

Querying Heterogeneous Personal Information on the Go . . . . .	454
<i>Danh Le-Phuoc, Anh Le-Tuan, Gregor Schiele, and Manfred Hauswirth</i>	

The Web Browser Personalization with the Client Side Triplestore . . . . .	470
<i>Hitoshi Uchida, Ralph Swick, and Andrei Samba</i>	

CrowdTruth: Machine-Human Computation Framework for Harnessing  
 Disagreement in Gathering Annotated Data ..... 486  
*Oana Inel, Khalid Khamkham, Tatiana Cristea,  
 Anca Dumitrache, Arne Rutjes, Jelle van der Ploeg,  
 Lukasz Romaszko, Lora Aroyo, and Robert-Jan Sips*

**Doctoral Consortium**

Joint Information Extraction from the Web Using Linked Data ..... 505  
*Isabelle Augenstein*

Entity Linking with Multiple Knowledge Bases: An Ontology  
 Modularization Approach ..... 513  
*Bianca Pereira*

Populating Entity Name Systems for Big Data Integration ..... 521  
*Mayank Kejriwal*

Semantic Complex Event Processing for Decision Support ..... 529  
*Robin Keskisärkkä*

Enriching Ontologies with Encyclopedic Background Knowledge for  
 Document Indexing ..... 537  
*Lisa Posch*

Detecting and Correcting Conservativity Principle Violations in  
 Ontology Mappings ..... 545  
*Alessandro Solimando*

**Author Index** ..... 553

# Table of Contents – Part I

## Data Integration and Link Discovery

CAMO: Integration of Linked Open Data for Multimedia Metadata Enrichment .....	1
<i>Wei Hu, Cunxin Jia, Lei Wan, Liang He, Lixia Zhou, and Yuzhong Qu</i>	
HELIOS – Execution Optimization for Link Discovery .....	17
<i>Axel-Cyrille Ngonga Ngomo</i>	
SAKey: Scalable Almost Key Discovery in RDF Data .....	33
<i>Danaï Symeonidou, Vincent Armant, Nathalie Pernelle, and Fatiha Saïs</i>	
Introducing Wikidata to the Linked Data Web .....	50
<i>Fredo Erxleben, Michael Günther, Markus Krötzsch, Julian Mendez, and Denny Vrandečić</i>	
Web-Scale Extension of RDF Knowledge Bases from Templated Websites .....	66
<i>Lorenz Bühmann, Ricardo Usbeck, Axel-Cyrille Ngonga Ngomo, Muhammad Saleem, Andreas Both, Valter Crescenzi, Paolo Merialdo, and Disheng Qiu</i>	

## Data Integration and Link Discovery in Life Sciences

EPCIS Event-Based Traceability in Pharmaceutical Supply Chains via Automated Generation of Linked Pedigrees .....	82
<i>Monika Solanki and Christopher Brewster</i>	
Scientific Lenses to Support Multiple Views over Linked Chemistry Data .....	98
<i>Colin Batchelor, Christian Y.A. Brenninkmeijer, Christine Chichester, Mark Davies, Daniela Digles, Ian Dunlop, Chris T. Evelo, Anna Gaulton, Carole Goble, Alasdair J.G. Gray, Paul Groth, Lee Harland, Karen Karapetyan, Antonis Loizou, John P. Overington, Steve Pettifer, Jon Steele, Robert Stevens, Valery Tkachenko, Andra Waagmeester, Antony Williams, and Egon L. Willighagen</i>	

Linked Biomedical Dataspace: Lessons Learned Integrating Data for Drug Discovery .....	114
<i>Ali Hasnain, Maulik R. Kamdar, Panagiotis Hasapis, Dimitris Zeginis, Claude N. Warren Jr., Helena F. Deus, Dimitrios Ntalaperas, Konstantinos Tarabanis, Muntazir Mehdi, and Stefan Decker</i>	
Drug-Target Interaction Prediction Using Semantic Similarity and Edge Partitioning .....	131
<i>Guillermo Palma, Maria-Esther Vidal, and Louiqa Raschid</i>	
<b>Large-Scale RDF Processing and Dataset Availability</b>	
SYRql: A Dataflow Language for Large Scale Processing of RDF Data .....	147
<i>Fadi Maali, Padmashree Ravindra, Kemafor Anyanwu, and Stefan Decker</i>	
Sempala: Interactive SPARQL Query Processing on Hadoop .....	164
<i>Alexander Schätzle, Martin Przyjaciel-Zablocki, Antony Neu, and Georg Lausen</i>	
Querying Datasets on the Web with High Availability .....	180
<i>Ruben Verborgh, Olaf Hartig, Ben De Meester, Gerald Haesendonck, Laurens De Vocht, Miel Vander Sande, Richard Cyganiak, Pieter Colpaert, Erik Mannens, and Rik Van de Walle</i>	
Diversified Stress Testing of RDF Data Management Systems .....	197
<i>Güneş Aluç, Olaf Hartig, M. Tamer Özsu, and Khuzaima Daudjee</i>	
<b>Linked Data</b>	
LOD Laundromat: A Uniform Way of Publishing Other People’s Dirty Data .....	213
<i>Wouter Beek, Laurens Rietveld, Hamid R. Bazoobandi, Jan Wielemaker, and Stefan Schlobach</i>	
Dutch Ships and Sailors Linked Data .....	229
<i>Victor de Boer, Matthias van Rossum, Jurjen Leinenga, and Rik Hoekstra</i>	
Adoption of the Linked Data Best Practices in Different Topical Domains .....	245
<i>Max Schmachtenberg, Christian Bizer, and Heiko Paulheim</i>	
Analyzing Schema.org .....	261
<i>Peter F. Patel-Schneider</i>	

The WebDataCommons Microdata, RDFa and Microformat Dataset Series .....	277
<i>Robert Meusel, Petar Petrovski, and Christian Bizer</i>	
On Publishing Chinese Linked Open Schema .....	293
<i>Haofen Wang, Tianxing Wu, Guilin Qi, and Tong Ruan</i>	
<b>Linked Data and Data Quality</b>	
Discovery and Visual Analysis of Linked Data for Humans .....	309
<i>Vedran Sabol, Gerwald Tschinkel, Eduardo Veas, Patrick Hoefler, Belgin Mutlu, and Michael Granitzer</i>	
Col-Graph: Towards Writable and Scalable Linked Open Data .....	325
<i>Luis-Daniel Ibáñez, Hala Skaf-Molli, Pascal Molli, and Olivier Corby</i>	
Transferring Semantic Categories with Vertex Kernels: Recommendations with SemanticSVD++ .....	341
<i>Matthew Rowe</i>	
Detecting Errors in Numerical Linked Data Using Cross-Checked Outlier Detection .....	357
<i>Daniel Fleischhacker, Heiko Paulheim, Volha Bryl, Johanna Völker, and Christian Bizer</i>	
Noisy Type Assertion Detection in Semantic Datasets .....	373
<i>Man Zhu, Zhiqiang Gao, and Zhibin Quan</i>	
<b>Mobile Reasoning and SPARQL Updates</b>	
A Cross-Platform Benchmark Framework for Mobile Semantic Web Reasoning Engines .....	389
<i>William Van Woensel, Newres Al Haider, Ahmad Ahmad, and Syed S.R. Abidi</i>	
A Power Consumption Benchmark for Reasoners on Mobile Devices ....	409
<i>Evan W. Patton and Deborah L. McGuinness</i>	
Dynamic Provenance for SPARQL Updates .....	425
<i>Harry Halpin and James Cheney</i>	
Updating RDFS ABoxes and TBoxes in SPARQL .....	441
<i>Albin Ahmeti, Diego Calvanese, and Axel Polleres</i>	

## Natural Language Processing and Information Extraction

AGDISTIS - Graph-Based Disambiguation of Named Entities Using Linked Data . . . . .	457
<i>Ricardo Usbeck, Axel-Cyrille Ngonga Ngomo, Michael Röder, Daniel Gerber, Sandro Athaide Coelho, Sören Auer, and Andreas Both</i>	
M-ATOLL: A Framework for the Lexicalization of Ontologies in Multiple Languages . . . . .	472
<i>Sebastian Walter, Christina Unger, and Philipp Cimiano</i>	
Towards Efficient and Effective Semantic Table Interpretation . . . . .	487
<i>Ziqi Zhang</i>	
Semano: Semantic Annotation Framework for Natural Language Resources . . . . .	503
<i>David Berry and Nadeschda Nikitina</i>	
Ensemble Learning for Named Entity Recognition . . . . .	519
<i>René Speck and Axel-Cyrille Ngonga Ngomo</i>	
<b>OBDA and Query Rewriting</b>	
OBDA: Query Rewriting or Materialization? In Practice, Both! . . . . .	535
<i>Juan F. Sequeda, Marcelo Arenas, and Daniel P. Miranker</i>	
Answering SPARQL Queries over Databases under OWL 2 QL Entailment Regime . . . . .	552
<i>Roman Kontchakov, Martin Rezk, Mariano Rodríguez-Muro, Guohui Xiao, and Michael Zakharyashev</i>	
kyrie2: Query Rewriting under Extensional Constraints in <i>ELHIO</i> . . . . .	568
<i>Jose Mora, Riccardo Rosati, and Oscar Corcho</i>	
Schema-Agnostic Query Rewriting in SPARQL 1.1 . . . . .	584
<i>Stefan Bischof, Markus Krötzsch, Axel Polleres, and Sebastian Rudolph</i>	
How Semantic Technologies Can Enhance Data Access at Siemens Energy . . . . .	601
<i>Evgeny Kharlamov, Nina Solomakhina, Özgür Lütfü Özçep, Dmitriy Zheleznyakov, Thomas Hubauer, Steffen Lamparter, Mikhail Roshchin, Ahmet Soylu, and Stuart Watson</i>	
<b>Author Index</b> . . . . .	621