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Claudia d'Amato · Martin Theobald (Eds.)

Reasoning Web

Learning, Uncertainty, Streaming, and Scalability

14th International Summer School 2018

Esch-sur-Alzette, Luxembourg, September 22–26, 2018

Tutorial Lectures

Editors

Claudia d'Amato
University of Bari Aldo Moro
Bari
Italy

Martin Theobald
University of Luxembourg
Esch-sur-Alzette
Luxembourg

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Preface

The research areas of the Semantic Web, Linked Data and Knowledge Graphs have received a lot of attention in academia and industry recently. Since its inception in 2001, the Semantic Web has aimed at enriching the existing Web with meta-data and processing methods, so as to provide Web-based systems with intelligent capabilities such as context-awareness and decision support. Over the years, the Semantic Web vision has been driving many community efforts which have invested substantial resources in developing vocabularies and ontologies for annotating their resources semantically. Besides ontologies, rules have long been a central part of the Semantic Web framework and are available as one of its fundamental representation tools, with logic serving as a unifying foundation. Linked data is a related research area which studies how one can make RDF data available on the Web and interconnect it with other data with the aim of increasing its value for everybody. Knowledge Graphs have been shown useful not only for Web search (as demonstrated by Google, Bing, etc.) but also in many other application domains.

In 2018, Reasoning Web, the 14th Reasoning Web Summer School, took place in Esch-sur-Alzette at the new Belval Campus of the University of Luxembourg during September 22–26 and was part of the Luxembourg Logic for AI Summit (LuxLogAI: <https://luxlogai.uni.lu>).

Topics and Lecturers

The program of 2018 included nine lectures covering the following topics:

1. Guido Governatori (CSIRO/Data61)	Practical Normative Reasoning with Defeasible Deontic Logic
2. Hannah Bast (University of Freiburg)	Efficient SPARQL Queries on Very Large Knowledge Graphs
3. Thomas Lukasiewicz and Ismail Ilkan Ceylan (University of Oxford)	A Tutorial on Query Answering and Reasoning over Probabilistic Knowledge Bases
4. Hendrik ter Horst, Matthias Hartung and Philipp Cimiano (Bielefeld University)	Cold-start Knowledge Base Population using Ontology-based Information Extraction with Conditional Random Fields
5. Heiko Pauleim (University of Mannheim)	Machine Learning with and for Knowledge Graphs
6. Daria Stepanova (Max Planck Institute for Informatics, Saarbrücken)	Rule Induction and Reasoning over Knowledge Graphs

(Continued)

7. Steffen Staab and Daniel Janke (University of Koblenz-Landau)	Storing and Querying Semantic Data in the Cloud
8. Emanuele Della Valle (Politecnico di Milano)	Engineering of Web Stream Processing Applications
9. Jacopo Urbani (Vrije Universiteit Amsterdam)	Reasoning at Scale (Tutorial)

Applications and Acknowledgements

We received 55 applications from a broad spectrum of Master and PhD students, Post-Docs, and Professionals in the Semantic Web domain, of which 53 have been accepted for participation at the Summer School and 4 have been selected for a travel grant (including PhD students from Brazil, France, Germany, and Sweden).

We specifically thank the University of Luxembourg and the Luxembourg National Research Fund (FNR) for their support in the organization of the 14th Reasoning Web Summer School in Luxembourg, and we are looking forward to an interesting and exciting program!

July 2018

Martin Theobald
Claudia d'Amato

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