Matthias Wauer   Mohamed Sherif
Muhammad Saleem   Olaf Hartig
Ricardo Usbeck   Ruben Verborgh
Axel-Cyrille Ngonga Ngomo   (Eds.)

Joint Proceedings of GeoLD2018 and QuWeDa2018:

3rd International Workshop on Geospatial Linked Data / 2nd Workshop on Querying the Web of Data (GeoLD-QuWeDa2018)

co-located with 15th Extended Semantic Web Conference 2018

Heraklion, Greece, June 3-4, 2018

Preface

GeoLD 2018

Geospatial data is vital for many application scenarios, such as navigation, logistics, and tourism. At the same time, a large number of currently available datasets (both RDF and conventional) contain geospatial information. Examples include DBpedia, Wikidata, Geonames, OpenStreetMap and its RDF counterpart, LinkedGeoData. RDF stores have become robust and scalable enough to support volumes of billions of records (RDF triples). Likewise, geospatial information systems (GIS) can benefit from Linked Data principles (e.g., schema agility and interoperability).

Despite improving implementations and standards such as GeoSPARQL, traditional geospatial data management systems still have advantages in functionality, efficiency and scalability regarding geospatial content. In this third edition of the workshop on Geospatial Linked Data, about 20 participants have discussed the current state of GeoLD tools, applications and novel research.

After a short introduction by the organizing committee chair, Ali Khalili presented a convincing approach to a concept called Functional Urban Areas. Several tools, also targeted towards end-users, can be used for integrating Linked Data within spatial boundaries extracted from different datasets. He showed how this combination of data can provide new insights that aren't captured by the data provided by the OECD[1]. The only weakness of this paper is a lack of related work, resulting in a best workshop paper nomination.

Alan Meehan then discussed an approach for fine-grained access control on geospatial data. He argued that a combination of template and licence, described by novel RDF vocabularies, would provide the necessary restrictions for the analysed use cases. Although the paper contains a section on related work, the authors do not compare against these or comment on another approach for fine-grained access control in Apache Rya, as suggested by a reviewer.

After a coffee break, Finn Årup Nielsen presented an extension to their website visualising scientific data from Wikidata. While the presented use cases and maps were interesting for the audience, reviewers argued that the method of how the queries are generated is not made clear.

In the following short paper presentation, Peru Bhardwaj explained the issues she ran into when executing link discovery. This talk was controversial and caused a lively discussion with the audience. While some improvement suggestions should be addressed by the link discovery tool developers, it remained unclear why the application of unsupervised or active learning approaches was not successful.

Finally, Matthias Wauer presented an early version of a platform for integration geospatial and sensor data. Using semantic technologies and a message bus based on RabbitMQ, the approach and implementation were motivated by three use cases. The discussion with the audience led to the suggestion of comparing

---

[1]Organization for Economic Co-operation and Development

the approach with the Linked Data Notifications W3C recommendation which could be relevant.

To summarize, the workshop discussed many aspects of geospatial linked data, perhaps with the notable exception of data quality. An audience member concluded that now that there are several full-featured GeoSPARQL-capable stores and other tools available, it will be interesting to see which applications will be possible in recent years. The importance of the topic was further highlighted by several presentations in the "Semantic Geo Resources" session of the main conference.

We thank the authors for their submissions and the program committee for their hard work.

June 2018 Matthias Wauer, Mohamed Sherif, Axel-Cyrille Ngonga Ngomo

GeoLD 2018 Organizing Committee

Matthias Wauer, Universität Leipzig
Mohamed Sherif, Universität Paderborn
Axel-Cyrille Ngonga Ngomo, Universität Paderborn

GeoLD 2018 Program Committee

Claus Stadler, University of Leipzig
Manolis Koubarakis, National and Kapodistrian University of Athens
Fabrizio Orlandi, Fraunhofer IAIS
Andreas Harth, KIT
Michael Martin, Institute for Applied Informatics
Anisa Rula, Fraunhofer IAIS
Giorgos Giannopoulos, Athena Institute for the Management of Information Systems
Kleanthi Georgala, University of Leipzig
Roman Korf, USU Software AG
Harsh Thakkar, Fraunhofer IAIS
Muhammad Saleem, University of Leipzig
Richard Wacker, YellowMap AG
Tim Ermilov, University of Leipzig
Henning Hasemann, TomTom
Ricardo Usbeck, University of Paderborn
Konstantina Bereta, National and Kapodistrian University of Athens
Ivan Ermilov, University of Leipzig
Johannes Trame, metaphacts

QuWeDa 2018

The constant growth of Linked Open Data (LOD) on the Web opens new challenges pertaining to querying such massive amounts of publicly available data. LOD datasets are available through various interfaces, such as data dumps, SPARQL endpoints and triple pattern fragments. In addition, various sources produce streaming data. Efficiently querying these sources is of central importance for the scalability of Linked Data and Semantic Web technologies. The trend of publicly available and interconnected data is shifting the focus of Web technologies towards new paradigms of Linked Data querying. To exploit the massive amount of LOD data to its full potential, users should be able to query and combine this data easily and effectively. This workshop at the Extended Semantic Web Conference (ESWC) presented original articles describing theoretical and practical methods and techniques for fostering, querying, and consuming the Data Web. The workshop brought together members of the community interested in demonstrating their latest advances in query processing systems for RDF. The event fostered discussion for proposing novel RDF query processing techniques, language extension, and benchmarking and experimental evaluation of the engines.

June 2018
Saleem Muhammad, Olaf Hartig, Ricardo Usbeck,
Ruben Verborgh, Axel-Cyrille Ngonga Ngomo

QuWeDa 2018 Organizing Committee

Saleem Muhammad, Universität Leipzig
Olaf Hartig, Linköping University
Ricardo Usbeck, Universität Paderborn
Ruben Verborgh, Ghent University
Axel-Cyrille Ngonga Ngomo, Universität Paderborn

QuWeDa 2018 Program Committee

Axel Polleres, WU Wien
Stasinos Konstantopoulos, NCSR Demokritos
Maribel Acosta, Karlsruhe Institute of Technology
Aidan Hogan, DCC, Universidad de Chile
Harald Sack, FIZ Karlsruhe, Leibniz Institute for Info. Infr. and KIT Karlsruhe
Pascal Molli, University of Nantes - LS2N
Steffen Staab, WeST, Univ. Koblenz-Landau and WAIS, Univ. of Southampton
Peter Haase, metaphacts
Andreas Schwarte, fluid Operations AG
Sören Auer, TIB Leibniz Information Center Science+Tech. / Univ. Hannover
Alessandro Adamou, The Open University
Gong Cheng, Nanjing University
Giuseppe Pirrò, Institute for High Performance Computing and Networking
Andriy Nikolov, metaphacts GmbH
Danh Le Phuoc, TU Berlin
Oscar Corcho, Universidad Politécnica de Madrid
Katja Hose, Aalborg University
Stefan Dietze, L3S Research Center
Carlos Buil Aranda, Universidad Técnica Federico Santa María
Luis Ibanez-Gonzalez, University of Southampton
Enrico Daga, The Open University
Hala Skaf-Molli, Nantes University
Stefan Schlobach, Vrije Universiteit Amsterdam
Valeria Fionda, University of Calabria
Vanessa Lopez, IBM
Ali Hasnain, Insight Centre for Data Analytics
Olivier Corby, INRIA

Contents