# HOBBIT

Collaborative Project

# Holistic Benchmarking of Big Linked Data

**Project Number**: 688227     **Start Date of Project:** 2015/12/01     **Duration:** 36 months

# Deliverable 7.2.2
# Second Workshop Organization Report

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|---|---|
| **Dissemination Level** | Public |
| **Due Date of Deliverable** | Month 36, 30/11/2018 |
| **Actual Submission Date** | Month 36, 30/11/2018 |
| **Work Package** | WP7 - Organization of Evaluation Campaigns |
| **Task** | T7.2 & T7.3 |
| **Type** | Report |
| **Approval Status** | Final |
| **Version** | 1.0 |
| **Number of Pages** | 33 |
| **Filename** | D7.2.2_Second_Workshop_Organization_Report.pdf |

**Abstract**: This deliverable comprises the overview report of the organization of the first round of HOBBIT workshops, in which the results of the HOBBIT challenges have been presented.

## History

| Version | Date | Reason | Revised by |
|---------|------|--------|------------|
| 0.1 | 05/11/2018 | First draft created | Georgios Katsimpras & Vassiliki Rentoumi (NCSR-D) |
| 0.2 | 14/11/2018 | Peer Reviewed | Filipe Teixeira (TOMTOM) |
| 0.3 | 15/11/2018 | Content Revised | Vassiliki Rentoumi & Georgios Katsimpras (NCSR-D) |
| 1.0 | 16/11/2018 | Final version created | Vassiliki Rentoumi & Georgios Katsimpras (NCSR-D) |

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# Executive Summary

This deliverable includes a report focusing on the organization of the second round of the HOBBIT workshops in which the second round of the HOBBIT challenges' results have been presented. Three challenges, namely the Mighty Storage Challenge (MOCHA), the Open Knowledge Extraction challenge (OKE) and the Scalable Question Answering over Linked Data challenge (SQA) have been organized at the ESWC 2018 conference and hosted under a common workshop session in June 2018. Furthermore, the Link Discovery Task organized by the HOBBIT project has been held within the context of the Ontology Matching (OM) workshop at the ISWC 2018 conference, and the DEBS Grand Challenge which was co-organized by the HOBBIT project took place at DEBS 2018 in June 2018. 30 persons attended the presentations of the ESWC 2018 workshop session for MOCHA, OKE and SQA challenges. Additionally, 30 persons attended the presentations of the DEBS Grand Challenge session within DEBS 2018. Finally, the Link Discovery Task held within the context of the OM workshop had 35 attendees.

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# 1 Introduction

Given that the main objective of WP7 – Evaluation Campaigns is to organize benchmarking campaigns in order to measure the fitness of implemented systems for processing Big Linked Data using the benchmarks defined by HOBBIT[1], the main goal of the first round of HOBBIT workshops was to allow for challenge participants to present and promote their developed systems, as well as for challenge organizers to showcase the results of the evaluation campaigns (i.e. challenges) to the public. In particular, HOBBIT organized the following challenges:

- the MOCHA challenge at ESWC 2018

- the OKE challenge at ESWC 2018

- the SQA challenge at ESWC 2018

- the DEBS Grand Challenge at DEBS 2018

- the HOBBIT Link Discovery Task at OAEI OM 2018 Workshop at ISWC 2018

In the following sections we present the full organization procedures undertaken for the second series of HOBBIT workshops. In Section 2.1 we present the Open Challenges as a main mean of dissemination of ESWC 2018 and DEBS GC 2018 HOBBIT challenges. In Section 2.2 we present the organization procedures undertaken for the organization of the ESWC 2018 workshop session which hosted the presentation of systems and their results of the three HOBBIT challenges (MOCHA, OKE and SQA) at the ESWC conference[2]. In Section 2.3 we present the organization procedures followed for the organization of the DEBS Grand Challenge session held within the context of DEBS 2018[3]. In Section 2.4 we present the organization steps followed for the organization of the Link Discovery Task hosted under the OM workshop session which was held at the ISWC 2018 conference[4].

Additional information on the second series of HOBBIT challenges can be found on the project's website[5], as well as in related deliverables: D7.4 – Second Workshop Proceedings, D7.3.2 – Second Challenge Results Overview and D7.4.2 – Second Challenge Evaluation. D7.4 reports on the proceedings of the challenges, D7.3.2 reports on the benchmarks, the challenges' tasks, and the participating systems and their results, and D7.4.2 reports on the quantitative and qualitative evaluation of the challenges.

# 2 Second Workshops Organization

## 2.1 Open Challenges

The first step we took towards the dissemination of the second series of HOBBIT workshops was the launch of four Open Challenges[6] (Open MOCHA, Open OKE, Open SQA and StreaML open challenge) in the last quarter of 2017, where potential participants could submit their systems and

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[1]https://project-hobbit.eu/outcomes/
[2]https://2018.eswc-conferences.org/
[3]https://project-hobbit.eu/challenges/debs2018-grand-challenge/
[4]http://iswc2018.semanticweb.org/
[5]https://project-hobbit.eu/
[6]https://project-hobbit.eu/open-challenges/

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join the challenge at virtually any point in time, with periodic cutoffs regulating the announcement of winners.

The open challenges aimed at i) boosting participation through the absence of hard deadlines and ii) starting the dissemination of MOCHA, OKE and SQA @ ESWC 2018, as well as DEBS Grand Challenge @ DEBS 2018, early.

For all the Open Challenges we introduced the concept of challenge leaderboards, where a leaderboard of the participating systems was implemented as part of the HOBBIT platform so that participants could continuously monitor their systems' performance against other competing systems. With the launch of the Open Challenges we introduced on the challenges website the "Express your Interest" button, where people interested in the challenge could register by simply providing their email address. This feature allowed us to better track potential participants and inform them of important aspects of the challenge, such as deadlines, release of benchmark data, leaderboard results etc.

The Open Challenges' calls for participation[7,8,9,10] together with "stay tuned and participate" emails have been sent to all the HOBBIT dissemination lists and channels as detailed in Sections 2.2, and 2.3 in the end of July 2017 with a parallel early advertisement of the "non-open" counterparts of the challenges.

The Open Challenges have been terminated as no systems were submitted in time for the first cutoff date and interested teams were directed to the ESWC 2018 and DEBS GC 2018 HOBBIT challenges.

## 2.2 ESWC 2018 Workshop Organization for MOCHA, OKE and SQA challenges

The MOCHA, OKE, and SQA challenges' results and systems have been presented under a common workshop session at the ESWC 2018 conference in June 2018. We needed this venue to be the place where experts from the semantic web and big linked data domains come together to present their systems and results towards the tasks provided by the MOCHA[11], OKE[12] and SQA[13] challenges.

The Call For Papers for each of the three challenges' workshop session has been published in WikiCFP[14] and EasyChair Smart CFP[15]. Furthermore we sent out the Call For Papers for all the three aforementioned HOBBIT challenges to 95 mailing lists which are reported below (the CFPs can be found in Appendix A):

- CHI-ANNOUNCEMENTS@listserv.acm.org

- DC-VOCABULARY@jiscmail.ac.uk

- GATE-users@lists.sourceforge.net

- IRList@lists.shef.ac.uk

- TextAnalytics@yahoogroups.com

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[7]https://project-hobbit.eu/open-challenges/mocha-open-challenge/
[8]https://project-hobbit.eu/open-challenges/sqa-open-challenge/
[9]https://project-hobbit.eu/open-challenges/oke-open-challenge/
[10]https://project-hobbit.eu/open-challenges/streaml-open-challenge/
[11]https://project-hobbit.eu/challenges/mighty-storage-challenge2018/
[12]https://project-hobbit.eu/challenges/oke2018-challenge-eswc-2018/
[13]https://project-hobbit.eu/challenges/sqa-challenge-eswc-2018/
[14]http://www.wikicfp.com/cfp/
[15]https://easychair.org/cfp/

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- ai-sges@jiscmail.ac.uk

- aic-seminars@ai.sri.com

- aisworld@lists.aisnet.org

- alp@mail.cs.nmsu.edu

- annotator-discuss@googlegroups.com

- appontresearch@lists.stanford.edu

- bioinfo@sfbi.fr

- bull-i3@irit.fr

- chi-announcements@acm.org

- cl-list@lists.ifi.uzh.ch

- community@sti2.org

- corpora@uib.no

- dbpedia-discussion@lists.sourceforge.net

- dbworld@cs.wisc.edu

- deri.ie-research@lists.deri.org

- derive-public@few.vu.nl

- diachron@googlegroups.com

- dl@dl.kr.org

- eccaisocieties08@eccai.org

- elsnet-list@elsnet.org

- emplus@dfki.de

- event@in.tu-clausthal.de

- fca-list@cs.uni-kassel.de

- flarenet_/subscribers@ilc.cnr.it

- grin-eventi@grin-informatica.it

- icaps-conference@googlegroups.com

- ines-grupo-web@lists.morfeo-project.org

- info-ic@listes.irisa.fr

- ir-l@uccvma.ucop.edu

- irma-l@irma-international.org

- isb@listserv.it.northwestern.edu

- kaw@science.uva.nl

- lirmm@lirmm.fr

- liste-egc@polytech.univ-nantes.fr

- ln@cines.fr

- machine-learning@egroups.com

- members@sigsem.org

- members@sti2.org

- nl-kr@tubvm.cs.tu-berlin.de

- ontolog-forum@ontolog.cim3.net

- open-linguistics@lists.okfn.org

- open-science@lists.okfn.org

- owlapi-developer@lists.sourceforge.net

- planet@lists.uni-ulm.de

- planning-list@googlegroups.com

- pragmaticweb@lists.spline.inf.fu-berlin.de

- project-lamapun@jacobs-university.de

- project-mathweb@jacobs-university.de

- protege-discussion@lists.stanford.edu

- protege-owl@mailman.stanford.edu

- public-lod@w3.org

- public-ontolex@w3.org

- public-rdfa@w3.org

- public-rww@w3.org

- public-semweb-lifesci@w3.org

- public-sparql-dev@w3.org

- public-vocabs@w3.org

- public-xg-ssn@w3.org

- qald-1@lists.cit-ec.uni-bielefeld.de

- redlinkeddata@listas.fi.upm.es

- researchers@pascal-network.org

- rwi@future-internet.eu

- sap.research.smartproducts@listserv.sap.com

- semantic-web@w3.org

- semanticweb@yahoogroups.com

- semweb-spain@delicias.dia.fi.upm.es

- sigsem@aclweb.org

- igsem@list.rug.nl

- siksleden@cs.uu.nl

- sioc-dev@googlegroups.com

- sw-meetings@cs.vu.nl

- tag@cs.texas.edu

- topicmapmail@infoloom.com

- twebbo@cs.unibo.it

- web-semantica-ayuda@es.tldp.org

- web.semantique@inria.fr

- webscience-announce@ecs.soton.ac.uk

- webscience-montpellier-list@meetup.com

- wegov@ecs.soton.ac.uk

- wikidata-l@lists.wikimedia.org

- www-rdf-interest@w3.org

- xml-dev@lists.xml.org

- linking-open-data@simile.mit.edu

- jdkim@dbcls.rois.ac.jp

- wdaqua-all@lists.iai.uni-bonn.de

- qaig@googlegroups.com

- semantic-web@w3.org

- herzig@searchhaus.net

- aksw@informatik.uni-leipzig.de

- eetn@iit.demokritos.gr

Moreover the Call For Papers for each of the three HOBBIT challenges together with the "Stay Tuned and Participate" emails were sent repeatedly to the following lists which consisting of emails of individual persons:

1. the HOBBIT community list containing 116 subscribers. This list contains emails of people from all the organizations and universities participating in the HOBBIT consortium.

2. the HOBBIT contact list which contains 182 members. This list consists of emails of members who expressed their interest and subscribed into the HOBBIT project and are not members of the HOBBIT consortium.

3. the MOCHA, OKE, and QALD, challenges mailing lists: these lists comprise emails of persons who expressed their interest for MOCHA, OKE and QALD challenges, respectively, through the following googlegroup mailing lists:

   - mightystoragechallenge-contact@googlegroups.com
   - OKE-contact@googlegroups.com
   - qald-contact@googlegroups.com

4. the authors' list comprising 1027 authors who participated in previous editions of OKE, MOCHA and QALD challenges

5. the subscribed participants of the BioASQ project[16]

6. the "Express your Interest" registered users

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[16]http://participants-area.bioasq.org/

## Program & Accepted Papers

| Challenge Session Tuesday, June 5th, 2018 11:45 – 12:15 | |
|---|---|
| 11:45 – 11:55 | **MOCHA Challenge Overview** Kleanthi Georgala |
| 11:55 – 12:05 | Ruben Taelman, Miel Vander Sande and Ruben Verborgh, **Versioned Querying with OSTRICH and Comunica in MOCHA 2018** |
| 12:05 – 12:15 | Milos Jovanovik and Mirko Spasić, **Benchmarking Virtuoso 8 at the Mighty Storage Challenge 2018: Training Results** |
| | |
| Closing Ceremony Thursday, June 7th, 2019 17:30 | |
| Announcement of challenge winners during the ESWC closing ceremony | |

Figure 1: MOCHA workshop schedule at ESWC 2018.

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## Program & Accepted Papers

| Challenge Session Tuesday, June 5th, 2018 14:00 – 14:30 | |
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| 14:00 – 14:15 | **OKE Challenge Overview** Kleanthi Georgala |
| 14:15 – 14:30 | Hector Cerezo-Costas and Manuela Martın-Vicente, **Relation Extraction for Knowledge Base Completion: A supervised approach** |
| | |
| Closing Ceremony Thursday, June 7th, 2019 17:30 | |
| Announcement of challenge winners during the ESWC closing ceremony | |

Figure 2: OKE workshop schedule at ESWC 2018.

7. the HOBBIT Twitter account

The proceedings of the three HOBBIT ESWC 2018 challenges were published by Springer on the proceedings volume *Buscaldi, Davide, Gangemi, Aldo, Reforgiato Recupero, Diego (Eds.), Semantic Web Challenges, Communications in Computer and Information Science, vol. 927, 2018*[17]. This volume contains the papers of all challenges that were organized at the ESWC 2018 conference. (details on the proceedings can be found in D7.4 – Second Workshop Proceedings).

The schedule for the common HOBBIT workshop session of MOCHA, OKE and SQA challenges at ESWC 2018 can be seen in Figures 1, 2 and 3 respectively. In specific, the sub-session for MOCHA challenge consisted of 2 oral presentations as well as of the MOCHA overview presentation. The schedule and the accepted papers for MOCHA session at ESWC 2018 can be also found at the HOBBIT website[18]. The OKE sub-session consisted of 1 presentation and the OKE challenge overview presentation. The schedule of the OKE session at ESWC 2018 as well as the list with the accepted papers can be found at the HOBBIT website[19]. The SQA sub-session consisted of 3 presentations and the SQA overview presentation. The schedule of the SQA sub-session at ESWC 2018 and the accepted papers can be found at the HOBBIT website[20].

The workshop was evaluated by the people who attended the session using a questionnaire that was distributed to them at the end of the session. The questionnaire and the responses of the attendees can be found in D7.4.2 – Second Challenge Evaluation.

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[17] https://www.springer.com/us/book/9783030000714
[18] https://project-hobbit.eu/challenges/mighty-storage-challenge2018/
[19] https://project-hobbit.eu/challenges/oke2018-challenge-eswc-2018
[20] https://project-hobbit.eu/challenges/sqa-challenge-eswc-2018/

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## Program & Accepted Papers

| Challenge Session<br>Tuesday, June 5th, 2018<br>11:15 – 11:45 | |
|---|---|
| 11:15 – 11:24 | **SQA Challenge Overview**<br>Giulio Napolitano |
| 11:24 – 11:31 | Dennis Diefenbach, Kamal Singh and Pierre Maret, **On the scalability of the QA system WDAqua-core1** |
| 11:31 – 11:38 | Elizaveta Zimina, Jyrki Nummenmaa, Kalervo Järvelin, Jaakko Peltonen, Kostas Stefanidis and Heikki Hyyrö, **GQA: Grammatical Question Answering for RDF Data** |
| 11:38 – 11:45 | Nikolay Radoev, Mathieu Tremblay, Amal Zouaq and Michel Gagnon, **LAMA: a Language Adaptive Method for Question Answering** |
| | |
| Closing Ceremony<br>Thursday, June 7th, 2019<br>17:30 | |
| Announcement of challenge winners during the ESWC closing ceremony | |

Figure 3: SQA workshop schedule at ESWC 2018.

### 2.3 DEBS Grand Challenge Session Organization at DEBS 2018

In DEBS Grand Challenge (DEBS GC) 2018 the evaluation platform has been provided by the HOBBIT project and was held within the context of the 12th ACM International Conference on Distributed and Event-Based Systems (DEBS 2018) in June 2018. The Call For Papers for DEBS Grand Challenge can be found in Appendix A and on the HOBBIT project website[21]. The CFP for DEBS Grand Challenge has been published on WikiCFP[22] and distributed to the Semantic Web mailing list[23]. Furthermore, the DEBS GC 2018 CFP has been disseminated to the DEBS GC mailing list[24] and to the DBWorld mailing list[25]. It was also communicated through the channels and social media of DEBS 2018[26] and tweeted through the HOBBIT Twitter account.

For DEBS GC 2018, 9 papers have been accepted plus the overview DEBS GC paper submitted by the organizers of the challenge.

All the aforementioned DEBS Grand Challenge papers have been published by ACM as part of the DEBS 2018 conference proceedings volume, *DEBS '18: Proceedings of the 12th ACM International Conference on Distributed and Event-based Systems, ACM, New Zealand, 2018*[27] (details on the

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[21] https://project-hobbit.eu/challenges/debs2018-grand-challenge/
[22] http://www.wikicfp.com/cfp/
[23] semantic-web@w3.org
[24] gc@debs.org
[25] https://research.cs.wisc.edu/dbworld/post.html
[26] https://github.com/hobbit-project/DEBS-GC-2018
[27] https://dl.acm.org/citation.cfm?id=3210284

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proceedings can be found in D7.4 – Second Workshop Proceedings).

The schedule and the list with the accepted papers/systems for DEBS GC session can be seen in Figure 4 and can be also found on the HOBBIT website[28]. In specific, the DEBS GC session consisted of 9 oral presentations as well as of the DEBS GC overview presentation.

The workshop was evaluated by the people who attended the session using a questionnaire that was distributed to them at the end of the session. The questionnaire and the responses of the attendees can be found in D7.4.2 – Second Challenge Evaluation.

## 2.4   ISWC 2018 OM Workshop – HOBBIT Link Discovery Task

HOBBIT contributed the Link Discovery Task[29] at the Ontology Matching (OM)[30] workshop at ISWC 2018. The OM workshop conducted an extensive and rigorous evaluation of ontology matching and instance matching (link discovery) approaches through the OAEI (Ontology Alignment Evaluation Initiative)[31] 2018 campaign. Results of the HOBBIT Link Discovery Task have been presented within the context of the OM workshop at ISWC 2018 in October 2018.

HOBBIT was not responsible for the organization of the OM workshop but only for the workshop's part which pertained to the HOBBIT Link Discovery Task. Therefore, within the context of the current report we will refer to the steps undertaken for the successful organization of the Link Discovery Task. Some steps concerning the general organization of the OM workshop will be reported for the sake of completeness.

The CFP of the OM workshop[32] through which the HOBBIT Link Discovery Task was also advertised can be found in Appendix A.

In HOBBIT Link Discovery Task three systems (AML, RADON, SILK) participated in total and one of them (i.e. AML) published a results' paper on the OM 2018 workshop website: *AML: Daniel Faria, Catia Pesquita, Booma S. Balasubramani, Teemo Tervo, David Carrio, Rodrigo Garilha, Francisco Couto and Isabel Cruz, Results of AML participation in OAEI 2018.* The remaining two systems had already been described in [1] and [2] (details on the proceedings can be found in D7.4 – Second Workshop Proceedings). The overview of the systems' results participating in the Link Discovery Task can be found on the HOBBIT website[33].

The Link Discovery Task has been summarized in the oral overview presentation of the OAEI 2018 campaign within the context of the OM workshop. The schedule of the OM workshop can be found in Figure 5.

The part of the workshop concerning the Link Discovery Task was evaluated by the people who attended the session using a questionnaire that was distributed to them. The questionnaire and the responses of the attendees can be found in D7.4.2 – Second Challenge Evaluation.

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[28]https://project-hobbit.eu/challenges/debs2018-grand-challenge/
[29]https://project-hobbit.eu/challenges/om2018/
[30]http://om2018.ontologymatching.org/#prg
[31]http://oaei.ontologymatching.org/2018/
[32]http://www.om2018.ontologymatching.org/#cfp
[33]https://project-hobbit.eu/challenges/om2018/

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Figure 5: OM Workshop schedule at ISWC 2018.

## 3  Conclusion

The HOBBIT project has successfully organized five challenges for the second round of the HOB-BIT workshops which led to fruitful discussions and interesting publications. The MOCHA, OKE and SQA challenges were organized in conjunction with the ESWC 2018 conference. Also, HOBBIT provided the evaluation platform to the 2018 DEBS Grand Challenge that annually runs as part of the DEBS conference. Further HOBBIT organized and run the Link Discovery Task at the 2018 OAEI campaign which was held under the Ontology Matching workshop at the ISWC 2018 conference.

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## Program & Accepted Papers

| Session: Grand Challenge – MSB.1.01<br>Tuesday, June 28th, 2018<br>13:00-15:00 | |
|---|---|
| **Introduction** | |
| | Vincenzo Gulisano, Zbigniew Jerzak, Pavel Smirnov, Martin Strohbach, Holger Ziekow, Dimitris Zissis, **The DEBS 2018 Grand Challenge** |
| **Presentations** | |
| | Ciprian Amariei, Paul Diac, Emanuel Onica and Valentin Roșca. **Grand Challenge: Cell Grid Architecture for Maritime Route Prediction on AIS Data Streams** |
| | Moti Bachar, Gal Elimelech, Itai Gat, Gil Sobol, Nicolo Rivetti and Avigdor Gal. **Grand Challenge: Venelia, On-line Learning and Prediction of Vessel Destination** |
| | Abderrahmen Kammoun, Tanguy Raynaud, Syed Gillani, Kamal Singh, Jacques Fayolle and Frederique Laforest. **Grand Challenge: A Scalable Framework for Accelerating Situation Prediction over Spatio-temporal Event Streams** |
| | Duc-Duy Nguyen, Chan Le Van and Muhammad Intizar Ali. **Vessel Destination and Arrival Time Prediction using Sequence-to-Sequence Models over Spatial Grid** |
| **Presentations** | |
| | Hyungkun Jung, Kang-Woo Lee, Joong-Hyun Choi and Eun-Sun Cho. **Grand Challenge: Bayesian Estimation on Destination Ports and Arrival times of Vessels** |
| | Florian Schmidt, Oleh Bodunov, André Martin, Andrey Brito and Christof Fetzer. **Grand Challenge: Real-time Destination and ETA Prediction for Maritime Traffic** |
| | Chun-Xun Lin, Tsung-Wei Huang, Guannan Guo and Martin Wong. **MtDetector: A High-Performance Marine Traffic Detector at Stream Scale** |
| | Rim Moussa. **Scalable Maritime Traffic Map Inference and Real-time Prediction of Vessels' Future Locations on Apache Spark** |
| | Valentin Roșca, Emanuel Onica, Paul Diac and Ciprian Amariei. **Grand Challenge: Predicting Destinations by Nearest Neighbor Search on Training Vessel Routes** |

Figure 4: DEBS Grand Challenge session schedule at DEBS 2018.

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# Appendix A    Call for Papers

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CALL FOR PAPERS
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MOCHA 2018 – Mighty Storage Challenge

in conjunction with the 15th European Semantic Web Conference (ESWC 2018)
3rd-7th June 2018, Heraklion, Crete, Greece

URL: https://2018.eswc-conferences.org/,
URL: https://project-hobbit.eu/challenges/mighty-storage-challenge2018/
email: mightystoragechallenge-contact@googlegroups.com
email: georgala@informatik.uni-leipzig.de
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The aim of this challenge is to test the performance of solutions for SPARQL processing
in aspects that are relevant for modern applications. These include ingesting data, answering queries on large datasets, versioning data, browsing and serving as backend for applications using Linked Data. The MOCHA challenge will test the systems against data derived from real
applications and with realistic loads.

This year, the challenge comprises the following tasks:
-Task 1 (Data Ingestion) will measure how well systems can ingest streams of RDF data.
-Task 2 (Data Storage) will measure how well data stores perform for different types of queries.
-Task 3 (Versioning) will measure how well versioning and archiving systems for Linked Data perform when they manage multiple versions of large data sets.
-Task 4 (Browsing) will check if existing solutions perform adequately for applications that address browsing through large data sets.

Training data and documentation are available now for all the MOCHA tasks:
Task 1: http://hobbitdata.informatik.uni-leipzig.de/MOCHA_ESWC2018/Task1/
Task 2: http://hobbitdata.informatik.uni-leipzig.de/MOCHA_ESWC2018/Task2/
Task 3: http://hobbitdata.informatik.uni-leipzig.de/MOCHA_ESWC2018/Task3/
Task 4: http://hobbitdata.informatik.uni-leipzig.de/MOCHA_ESWC2018/Task4/
Participants will be expected to describe their solution and results on the training datasets over a 5 page paper. In particular, a short summary of the approach chosen, a link to the experimental results and an analysis of the strengths and weaknesses of the approach are expected.

Important Dates
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– Paper submission deadline (5 pages): Wednesday, April 4th, 2018 (extended)

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– Challenge paper reviews: Thursday, April 26th, 2018  (extended)
– Notification of authors and invitation to challenge: Monday, April 30th, 2018 (extended)
– Camera ready papers (5 pages): Monday, May 14th, 2018  (extended)
– Camera ready papers for the challenge post-proceedings (up to 15 pages): Friday, July 6th, 2018 (tentative deadline)

– Release of training data and detailed instructions: Monday, February 12, 2018
– Release of test dataset: Wednesday, April 25th, 2018
– Deadline for system submission: Sunday, May 13th, 2018
– Running of the systems: Tuesday, May 15th, 2018

– Presentation of challenge results: During ESWC 2018
– Proclamation of winners: During ESWC 2018 closing ceremony

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Organization
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* Axel-Cyrille Ngonga Ngomo, Department of Computer Science, Paderborn, Germany
* Irini Fundulaki, Foundation for Research and Technology – Hellas (FORTH), Greece
* Mirko Spasic, OpenLink, UK
* Vassiliki Rentoumi, National Center for Scientific Research, "Demokritos", Greece
* Kleanthi Georgala, Universität Leipzig, AKSW, Institut für Angewandte Informatik (InfAI)

For the complete list of organizers and program committee members, visit the challenge website.

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Further Information and Contact
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For detailed information, including datasets and submission guidelines, please visit the challenge website: https://project-hobbit.eu/challenges/mighty-storage-challenge/
Contact Email: mightystoragechallenge-contact@googlegroups.com
or email: georgala@informatik.uni-leipzig.de

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CALL FOR PAPERS

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OKE 2018 – Open Knowledge Extraction Challenge

in conjunction with the 15th European Semantic Web Conference (ESWC 2018)
3rd-7th June 2018, Heraklion, Crete, Greece

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URL: https://2018.eswc-conferences.org/
URL: https://project-hobbit.eu/challenges/oke2018-challenge-eswc-2018/
email: OKE-contact@googlegroups.com
email: speck@informatik.uni-leipzig.de

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The OKE challenge invites researchers and practitioners from academia as well as industry to compete to the aim of pushing further the state of the art in knowledge extraction from text for the Semantic Web. The challenge has the ambition to provide a reference framework for research in this field by redefining a number of tasks typically from information and knowledge extraction by taking into account Semantic Web requirements and has the goal to test the performance of knowledge extraction systems.

This year, the challenge goes in the fourth round and consists of four tasks which include named entity identification, disambiguation by linking to a knowledge base as well as relation and knowledge extraction. The challenge makes use of small gold standard datasets that consist of manually curated documents and large silver standard datasets that consist of automatically generated synthetic documents. The performance measure of a participating system is twofold based on (1) Precision, Recall, F1-measure and on (2) Precision, Recall, F1-measure with respect to the runtime of the system.

This year, the challenge comprises the following tasks:
-Task 1: Focused Named Entity Identification and Linking
-Task 2: Broader Named Entity Identification and Linking
-Task 3: Relation Extraction
-Task 4: Knowledge Extraction

Participants will be expected to describe their solution and results on the training datasets over a 5 page paper. In particular, a short summary of the approach chosen, a link to the experimental results and an analysis of the strengths and weaknesses of the approach are expected.

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Important Dates

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– Paper submission deadline (5 pages): Friday, March 30th, 2018

– Challenge paper reviews: Thursday, April 26th, 2018
– Notification of authors and invitation to challenge: Monday, April 30th, 2018
– Camera ready papers (5 pages): Monday, May 14th, 2018
– Camera ready papers for the challenge post-proceedings (up to 15 pages):
Friday, July 6th, 2018 (tentative deadline)

– Release of training data and detailed instructions: Monday, February 12, 2018
– Release of test dataset: Monday, May 7th, 2018
– Deadline for system submission: TBA
– Running of the systems: TBA

– Presentation of challenge results: During ESWC 2018
– Proclamation of winners: During ESWC 2018 closing ceremony

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Organization
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* Axel-Cyrille Ngonga Ngomo, Paderborn University, Paderborn, Germany
* René Speck, Leipzig University, Leipzig, Germany
* Michael Röder, Paderborn Leipzig, Paderborn, Germany
* Ricardo Usbeck, Paderborn University, Paderborn, Germany

For the complete list of organizers and program committee members, visit the challenge website.

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Further Information and Contact
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For detailed information, including datasets and submission guidelines, please visit the challenge website: https://project-hobbit.eu/challenges/oke2018-challenge-eswc-2018/
Contact Email: OKE-contact@googlegroups.com OR speck@informatik.uni-leipzig.de
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CALL FOR PAPERS

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SQA 2018 – Scalable Question Answering

in conjunction with the 15th European Semantic Web Conference (ESWC 2018)
3rd-7th June 2018, Heraklion, Crete, Greece

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URL: https://2018.eswc-conferences.org/
URL: https://project-hobbit.eu/open-challenges/sqa-challenge-eswc-2018/
email: Giulio.Napolitano@iais.fraunhofer.de

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The key challenge for Scalable Question Answering over Linked Data is the need
to translate a user's information request into such a form that it can be efficiently
evaluated using standard Semantic Web query processing and inferencing
techniques.

Therefore, the main task of SQA Challenge is the following: given an RDF dataset
and and a large volume of natural language questions or keywords, return the
correct answers (or SPARQL queries that retrieves those answers).

Training dataset and documentation are available:
* Training dataset: https://figshare.com/articles/LC-QuAD_QALDformat/5818452
*
Description: http://hobbitdata.informatik.uni-leipzig.de/SQAOC/Documentation.txt
In the Scalable Question Answering Challenge (SQA) users can display the
capabilities of their systems using the HOBBIT platform (https://project-hobbit.eu/
outcomes/hobbit-platform) provided by the homonymous H2020 project.
Participants will be expected to describe their solution and results on the training
datasets over a 5 page paper. In particular, a short summary of the approach
chosen, a link to the experimental results and an analysis of the strengths and
weaknesses of the approach are expected.

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Important Dates

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– Challenge papers submission deadline (5 pages document): Friday March 30th,
2018
– Challenge paper reviews: Thursday, April 26th, 2018
– Notifications sent to participants and invitations to submit task results: Monday
April 30th, 2018
– Camera ready papers for the conference (5 pages document): Monday, May
14th, 2018
– Camera ready papers for the challenge proceedings (up to 15 pages): Friday,
July 6th, 2018 (tentative deadline)

– Release of test data (questions only): Thursday, April 26th, 2018
– Deadline for system submission: Sunday, May 20th, 2018 (extended)
– Running of the systems: Tuesday, May 22th, 2018 (extended)

– Proclamation of winners: During ESWC2018 closing ceremony

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Organization
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* Giulio Napolitano, IAIS, Fraunhofer, Germany
* Axel-Cyrille Ngonga Ngomo, University of Paderborn, Germany
* Ricardo Usbeck, University of Paderborn, Germany

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Further Information and Contact
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For detailed information including datasets and submission guidelines, please visit the challenge website: https://project-hobbit.eu/open-challenges/sqa-challenge-eswc-2018/
Contact Email: Giulio.Napolitano@iais.fraunhofer.de

Call for Grand Challenge solutions

Join the 2018 DEBS Grand Challenge and use machine learning to make maritime transportation more reliable! Explore multiple gigabytes of real maritime spatio-temporal streaming data and compete with peers from academia and industry for the Grand Challenge prize of 1000 USD.

**Challenge start:** ~~15th of January 2018~~ (i.e. HOBBIT platform is available for testing). **Submission deadline:** ~~May 7th, 2018~~

The Grand Challenge data is provided by MarineTraffic and hosted by BigDataOcean project, which has received funding from the European Union's H2020 research and innovation action program under grant agreement number No 732310. The evaluation platform is provided by the HOBBIT, EU Horizon 2020 project.

## General Description

The DEBS Grand Challenge is a series of competitions, that started in 2010, in which both academics and professionals compete with the goal of building faster and more accurate distributed and event based system. Every year, the DEBS Grand Challenge participants have a chance to explore a new data set and a new problem and can compare their results based on the common evaluation criteria.

The 2018 DEBS Grand Challenge focuses on the application of machine learning to spatio-temporal streaming data. The goal of the challenge is to make the naval transportation industry more reliable by providing predictions for vessels' destinations and arrival times. Predicting both correct destinations and arrival times of vessels are relevant problems, that once solved, will boost the efficiency of the overall supply chain management.

The Grand Challenge data is provided by the MarineTraffic company and hosted by the Big Data Ocean, EU Horizon 2020 project. The evaluation platform is provided by the HOBBIT project represented by AGT International (http://www.agtinternational.com/), an EU Horizon 2020 project. The HOBBIT project has received funding from the European Union's H2020 research and innovation action program under grant agreement number 688227.

### Awards

Participants of the challenge compete for two awards: (1) the performance award and (2) the audience award. The winner of the performance award will be determined through the automated evaluation of the HOBBIT platform, according to the evaluation criteria. These criteria factor in speed as well as accuracy of the solution. The winning team will receive **1000 USD** as price money.

The winner of the audience award will be determined amongst the finalists who present in the Grand Challenge session of the DEBS. In this session, the audience will be asked to vote for the solution with the most interesting concepts (highest number of votes wins). The intention is to award qualities of the solutions that are not tied to performance. Specifically, the audience will be encouraged to pay attention to the following aspects:

•Novelty/originality of the solution

•Quality of the solution architecture (e.g. flexibility, reusability, extensibility, generality, …)

There are two ways how teams can become finalists and get a presentation slot in the Grand Challenge session. (1) The two teams with the best performance (according to the HOBBIT platform) will be nominated. (2) The Grand Challenge organizers will review the submitted papers for each solution and nominate additional teams with the most interesting concepts.

All submissions of sufficient quality that do not make it to the finals will get a chance to present theirs solution as a poster. (The sufficiency of the quality will be determined through the review of the papers).

## How to Participate

1.**Register at EasyChair**: The first step is to register your submission in the EasyChair Grand Challenge Track. At this point, this is only to state your intent to participate and to establish communication with the organizers. Therefore, it is sufficient to submit an interims title for your work.

2.**Submit a solution to HOBBIT**: You need to submit your solution to the HOBBIT platform in order to get it benchmarked in the challenge. The platform gives you feedback and allows to update your solution. Thereby you can continuously improve your system until the closing date (t.b.d.). We will evaluate the latest solution that you uploaded before the closing date.

3.**Submit a short paper**: Finally you need to upload a short paper (2 pages, plus optional appendix) about your solution to EasyChair. The paper will be reviewed to assess the merit and originality of your solution. All solutions of sufficient quality will at least get the chance to present a poster on the DEBS conference.

## Data Description

**Static information**: The queries require knowledge about the location of ports around the world. The locations are specified via bounding boxes that are defined through coordinates. You can find the complete list of ports here

**Data Stream**: We provide a stream of comma separated tuples that are ordered by time. A ship sends a tuple according to its behaviour based on the AIS specifications. The schema of the tuples is provided below

Schema <SHIP_ID, SPEED, LON, LAT, COURSE, HEADING, TIMESTAMP, Departure PORT_NAME, Reported_Draught>

•SHIP_ID is the anonymized id of the ship

•SHIPTYPE is defined according to the reference

•SPEED is measured in knots (divide value by 10)

•LON is the longitude of the current ship position

arrival at a port is defined by the first event that is reported from within the respective bounding box. More formally:

Score A1 = offset of the first tuple of the last correctly predicted sequence before trip ends / total_trip_duration. Offset = (tripEndTimestamp-firstCorrectTupleTimestamp).

Example Score A1:

> 1.Time:01, Predicted Dest: A (Start of Trip)
>
> 2.Time:02, Predicted Dest: B
>
> 3.Time:03, Predicted Dest: A
>
> 4.Time:04, Predicted Dest: B
>
> 5.Time:05, Predicted Dest: B
>
> 6.Time:06, Predicted Dest: B (Arrival at B)

Score A1: (06-04)/(06-01) [higher is better]

Rank A1 is calculated as the position in the list of all participants sorted by the Score A1 in decreasing order.

The overall ranking for query 1 (Rank Q1) is then computed as Rank Q1 = 0.75*Rank A1 + 0.25*Rank B1.

At any point in time there is only one tuple per ship in the queue.

**Query 2: Predicting arrival times of ships**

There is a set of ports defined by respective bounding boxes of coordinates. Once a ship leaves a port (i.e. the respective bounding box), the task is to predict the arrival time at its destination port (i.e. when the next defined bounding boxes will be entered). Also for this query, after port departure and until arrival, the solution must emit one prediction per position update. The input and output format of the data for Query 2 is specified by the example implementation that can be viewed on the github under the following link (line 52).

**Evaluation for Query 2**

The evaluation takes into account the accuracy of predictions (Rank A2) and the total runtime (Rank B2).

Score A2 is defined by the prediction accuracy (i.e. mean average error of all predicted arrival times) while Rank B2 ranks according to the total runtime. Rank A2 ranks systems according to the Score A2 in increasing order.

The overall ranking for query 2 (Rank Q2) is then computed as Rank Q2 = 0.75*Rank A2 + 0.25*Rank B2. The final ranking is given by the sum of ranks Rank Q1 and Rank Q2.

## Platform Overview

Submitted solutions will be benchmarked with the HOBBIT platform deployed online at http://master.project-hobbit.eu/. A detailed description of the platform is available here.

The evaluation cluster of the online platform has three working nodes allocated for solutions. Each node is 2×64 bit Intel Xeon E5-2630v3 (8-Cores, 2,4 GHz, Hyperthreading, 20MB Cache, each proc.), 256 GB RAM, 1Gb Ethernet.

## Hobbit How-To

In order to participate in challenge participant need to:

1. Develop a system adapter connecting his system to the HOBBIT platform

2. Upload the system to the HOBBIT platform so that it can be benchmarked

3. Register the system for the DEBS 2018 Grand Challenge for final evaluation

Instructions for developing a HOBBIT system adapter are available at the HOBBIT Wiki. A simple Hello World example for this challenge is available here. The hobbit-java-sdk and published sources (to be updated) should help participants to debug and their system locally and to prepare docker image for uploading into the online platform. Detailed information about upload procedure is documented here. After submitting your system to the HOBBIT platform, you can use the DEBS 2018 Benchmark (to be published) to test the correctness of your implementation.

In order to register your system for the Challenge you have to use the "DEBS 2018 Grand Challenge" item under the "Challenges" tab in the platform GUI. The detailed description of the registration procedure is described here. Participants need to register their systems for all tasks defined in DEBS 2018 Grand Challenge at the moment.

## FAQ

The Frequently Asked Questions will appear here. Please notice an issue tracker is available here.

## Updated deadline: 7th of May (AOE)

We decided to extend the submission deadline to the 7th of May (AOE). Please be reminded that this years challenge offers the opportunity to be qualified for presentation at the conference based on both originality (determined by the peer review results) and performance (as determined by the benchmark results). Ideal solutions convince with both aspects but interesting solutions that do not participate in the benchmark can be presented during the conference as well. Please not that only solutions that participate in the benchmark are considered for the performance award.

The final version of your paper needs to be uploaded to EasyChair by the 7th of May (AOE). Please just update your initial submission. We will review the latest version that you uploaded.

If you have an implementation that is ready to participate in the benchmark (required to win the performance award), your solution must be uploaded to the HOBBIT system by the 7th of May (AOE). We will take your latest upload for the final benchmark.

## Organization

- Vincenzo Gulisano, Chalmers University of Technology, Sweden - vincenzo.gulisano@chalmers.se

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- Pavel Smirnov – AGT International, Germany - PSmirnov@agtinternational.com

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The Thirteenth International Workshop on
ONTOLOGY MATCHING
(OM-2018)
http://om2018.ontologymatching.org/
October 8th, 2018, ISWC Workshop Program,
Monterey, CA, US

BRIEF DESCRIPTION AND OBJECTIVES
Ontology matching is a key interoperability enabler for the Semantic Web,
as well as a useful technique in some classical data integration tasks
dealing with the semantic heterogeneity problem. It takes ontologies
as input and determines as output an alignment, that is, a set of
correspondences between the semantically related entities of those ontologies.
These correspondences can be used for various tasks, such as ontology
merging, data interlinking, query answering or process mapping.
Thus, matching ontologies enables the knowledge and data expressed
in the matched ontologies to interoperate.

The workshop has three goals:
1.
To bring together leaders from academia, industry and user institutions
to assess how academic advances are addressing real-world requirements.
The workshop will strive to improve academic awareness of industrial
and final user needs, and therefore, direct research towards those needs.
Simultaneously, the workshop will serve to inform industry and user
representatives about existing research efforts that may meet their
requirements. The workshop will also investigate how the ontology
matching technology is going to evolve, especially with respect to
data interlinking, process mapping and web table matching tasks.

2.
To conduct an extensive and rigorous evaluation of ontology matching
and instance matching (link discovery) approaches through
the OAEI (Ontology Alignment Evaluation Initiative) 2018 campaign:
http://oaei.ontologymatching.org/2018/

3. To examine new uses, similarities and differences from database
schema matching, which has received decades of attention
but is just beginning to transition to mainstream tools.

This year, in sync with the main conference, we encourage submissions
specifically devoted to: (i) datasets, benchmarks and replication studies,
services, software, methodologies, protocols and measures

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(not necessarily related to OAEI), and (ii) application of
the matching technology in real-life scenarios and assessment
of its usefulness to the final users.

TOPICS of interest include but are not limited to:

- Business and use cases for matching;
- Requirements to matching from specific application scenarios;
- Application of matching techniques in real-world scenarios;
- Formal foundations and frameworks for matching;
- Matching and big data;
- Matching and linked data;
- Instance matching, data interlinking and relations between them;
- Process model matching;
- Large-scale and efficient matching techniques;
- Matcher selection, combination and tuning;
- User involvement (including both technical and organizational aspects);
- Explanations in matching;
- Social and collaborative matching;
- Uncertainty in matching;
- Reasoning with alignments;
- Alignment coherence and debugging;
- Alignment management;
- Matching for traditional applications (e.g., information integration);
- Matching for emerging applications (e.g., search, web-services).

SUBMISSIONS
Contributions to the workshop can be made in terms of technical papers and
posters/statements of interest addressing different issues of ontology matching
as well as participating in the OAEI 2018 campaign. Technical papers should
be not longer than 12 pages using the LNCS Style:
http://www.springer.com/computer/lncs?SGWID=0-164-6-793341-0
Posters/statements of interest should not exceed 2 pages and
should be handled according to the guidelines for technical papers.
All contributions should be prepared in PDF format and should be submitted
through the workshop submission site at:

https://www.easychair.org/conferences/?conf=om2018

Contributors to the OAEI 2018 campaign have to follow the campaign conditions
and schedule at http://oaei.ontologymatching.org/2018.

DATES FOR TECHNICAL PAPERS AND POSTERS:

- June 4th, 2018: Deadline for the submission of papers.
- June 27th, 2018: Deadline for the notification of acceptance/rejection.
- July 31st, 2018: Workshop camera ready copy submission.
- October 8th, 2018: OM-2018, Monterey, CA, US.

Contributions will be refereed by the Program Committee. Accepted papers will be published in the workshop proceedings as a volume of CEUR-WS as well as indexed on DBLP.

The extended versions of the best technical papers of the workshop will be invited to the Knowledge Engineering Review journal: http://oaei.ontologymatching.org/2017.5/special_issue.html

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# References

[1] Mohamed Ahmed Sherif, Kevin Dreßler, Panayiotis Smeros, and Axel-Cyrille Ngonga Ngomo. Radon-rapid discovery of topological relations. In *AAAI*, pages 175–181, 2017.

[2] Panayiotis Smeros and Manolis Koubarakis. Discovering spatial and temporal links among rdf data. In *LDOW@ WWW*, 2016.

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