



# PROGRAM

THE 16<sup>TH</sup> INTERNATIONAL SEMANTIC WEB CONFERENCEiswc2017.semanticweb.orgOCTOBER, 21 -25

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# WELCOME

#### Dear ISWC 2017 Attendee,

It is with great pleasure that I welcome you to the Sixteenth International Semantic Conference (ISWC 2017). As you know, this is the premier forum for Semantic Web researchers and practitioners from around the world to gather and share ideas and discoveries. The conference continues to bring together a diverse set of individuals with skills and interests ranging from artificial intelligence to information systems and Web systems. We continue to see steadily increasing adoption of semantic technologies, and often these technologies are the invisible workhorse providing greater value to the applications they support.

Saturday and Sunday will be our workshop and tutorial program, and if you have registered for these days, you may attend any workshop or tutorial you wish. The 18 workshops are an opportunity for sub-communities to share their results and make plans for future developments. If you are looking to learn more about an emerging topic or to hear recent developments in a more traditional one, I encourage you to attend the relevant workshop. The seven tutorials are an opportunity for you to receive training on new tools and techniques, often involving hands-on activities. The Doctoral Consortium will also be on Sunday. This event allows young Ph.D. students to present their work to a panel of experienced researchers and receive detailed feedback on how to solidify their ideas and pursue their research. Sunday evening there will be a welcome reception at Vienna City Hall. This in an event you do not want to miss.

The main conference program runs Monday through Wednesday. Each day will begin with one of our three invited keynote speakers and continue with multiple sessions in parallel. In these sessions, you will find papers from the Research, Resources, In-Use and Journal tracks mixed together thematically. Use this brochure (or the conference web site) to find the time and locations of the sessions that most interest you. Also, we have introduced for the first time at ISWC a Job Fair. All three days employers will be waiting to meet with job seekers. Please find the schedule online.

Monday begins with a keynote by Deborah McGuinness on "Ontologies for the Modern Age." This day also includes the Industry track, which presents the state of adoption of semantic technologies in industrial applications, whether it be specific industries or as a horizontal technology. At 3:50pm will be the traditional Minute Madness, in which each poster and demo presenter gets a brief moment to pitch their work. Monday evening will have the "Semantics in the Field" Business Event and the poster and demo reception. The business event, supported by the Vienna Business



Agency, is open to local businesses and provides them with an opportunity to network with the Semantic Web research community. The poster and demo session is followed by the exciting return of the "Semantic Web Jam Session," in which you get to see (and hear) your colleagues show off their musical chops.

Tuesday will continue with Nada Lavrač's keynote on "From Relational to Semantic Data Mining" and more sessions. Special activities of note include the Mentoring Lunch for students who have signed up ahead of time, and presentations by the Semantic Web Challenge finalists at 1:30pm. At the end of the day, I encourage you to come to the town hall, in which we solicit feedback from the most important people at the conference – you! Please consider joining us in order to share your opinion on what you think worked and what didn't work, so we can continue to make ISWC a success in future years. Of course, you won't want to miss the conference dinner at the "Heurigen" that evening. We will have a traditional Viennese dinner accompanied by local wine and grape juice.

The conference closes on Wednesday. In addition to a keynote by Jamie Taylor on "Applied Semantics: Beyond the Catalog" there will be many more sessions. Wednesday will also include the Lightning Talks: short talks on late breaking research, position statements, etc. If you are interested in giving a lightning talk, be sure to submit your slide to iswc.lightningtalks@gmail.com. The conference ends with the closing session where this year's award winners will be announced.

This conference has been in the making for two years now, and the organization committee has put in many hours to ensure that you will have an illuminating and enjoyable event. I consider myself very fortunate to have worked with such an amazing team. Whenever you run into any member of the organization committee, please give them a hearty thank you and congratulations. I especially want to thank the local organization team, which has been ably led by Axel Polleres and Elmar Kiesling. Without them, none of this would have been possible.

Whether this is your first ISWC or your sixteenth, I hope that you will find this to be one of the best conferences you have ever attended. What are you waiting for? Dive in!

#### Jeff Heflin General Conference Chair, ISWC 2017

# WELCOME TO VIENNA

#### Welcome to ISWC 2017, Welcome to Vienna,

It is our great pleasure to host this year's edition of the Semantic Web community's flagship conference and we are proud to welcome researchers and practitioners from more than 37 countries to be part of ISWC 2017 here in Vienna.

The first two days of the conference will be held at the spectacular WU campus, which since its opening in September 2013 has not only become home to WU students and faculty, but also one of the city's architectural sightseeing hot spots (despite strong competition from magnificent baroque buildings, Art Nouveau, and modern architecture). The workshop and tutorials will be held in the Teaching Center on Saturday and Sunday, which is hard to miss due to the colored patina of its weathering steel façade. The iconic Library & Learning Center (LC), designed by Zaha Hadid, will house the poster and demo reception, along with a local business & community event, and the jam session on Monday.

For the main conference, we will move to the Conference Center MESSE, located right next to WU Campus. Here, we will find ideal conditions for the larger sessions of the conference, along with all the facilities of a modern congress center and plenty of space to meet and discuss around the lecture rooms.

To continue to exchange ideas and socialise in a relaxed atmosphere - and, of course, to celebrate - we will have two main social events: a Mayor's reception at Vienna's Neo-Gothic style City Hall on the evening before the main conference starts, as well as a traditional dinner on Tuesday at a "Heurigen", a typical Viennese wine tavern. Additionally, the poster and demo reception on Monday will, for the first time ever, be co-located with a "Semantics in the field" business event. This business event will be open to the public and will connect the conference to the vibrant local Semantic Web community, featuring talks by major local developers and adopters of semantic technologies. Last, but not least, the "Semantic Web Jam Session" returns after its great success at ISWC 2013. After the Poster and Demo reception on Monday, we are looking forward to prove -- with your help -- that Vienna is indeed a Musical city.

This iteration of ISWC has been in the making for more than two years. During the time leading up to these five days of the conference, many highly committed people put in tremendous effort to prepare a great program. We would particularly like

to thank Jeff Heflin, our general chair, Natasha Noy and everyone at SWSA, as well as all members of the organising committee for their great support in our local preparations. We are profoundly grateful for their hard work, professionalism, and responsiveness, sometimes on very tight deadlines, and it has been an exceptional pleasure to work with all of them! We are also indebted to all the members of the program committees, who, with the help of countless reviewers, created an excellent program. Last, but most importantly, we would like to thank all authors who submitted their work and continue to make ISWC what it is -- the prime international forum to come together to discuss, advance, and shape the future of semantic technologies.

Here in Vienna, two universities and an industrial research center joined forces to make ISWC a reality. Behind the scenes, many people worked tirelessly on all the details to make your stay here as effortless and successful as possible, including the administrative teams at WU and SBA Research (Bettina Bauer, Yvonne Poul, Rebecca Runge, and Doris Wyk), our web masters (Javier Fernandez and Fajar Ekaputra), and -- last, but definitely not least -- the many volunteers that will keep the conference running. You can easily spot them in their red "team"-shirts and they will be happy to assist you with whatever concern you may have -- please thank them for their support while you are at it.

Finally, we would like to express our gratitude to our sponsorship chairs and all sponsors, who, through their generous contributions, helped to make ISWC 2017 feasible.

We are proud to say that it has been great experience working with all of these and many more people to deliver what we hope will be an inspiring conference -- Enjoy ISWC 2017!

The local chairs



Axel Polleres (WU Wien)



Elmar Kiesling (TU Wien)

# ORGANIZATION

#### **General Chair**

Jeff Heflin	Lehigh University, Bethlehem, PA, USA
Local Chair	
Axel Polleres	WU Wien, Vienna, Austria
Elmar Kiesling	TU Wien, Vienna, Austria
Research Track	
Claudia d'Amato	University of Bari, Bari, Italy
Miriam Fernandez	KMi, The Open University, Milton Keynes, UK
In-Use Track	
Philippe Cudré-Mauroux	University of Fribourg, Fribourg, Switzerland
Juan Sequeda	Capsenta Austin, TX, USA
Resources Track	
Freddy Lecue	Accenture Labs Dublin, Ireland INRIA Sophia Antipolis, France
Valentina Tamma	University of Liverpool, Liverpool, UK
Journal Track	
Abraham Bernstein	University of Zurich, Zurich, Switzerland
Pascal Hitzler	Wright State University Dayton, OH, USA
Steffen Staab	University of Koblenz, Koblenz, Germany
Workshops and Tutorials	5
Aidan Hogan	Universidad de Chile, Santiago, Chile
Valentina Presutti	Institute of Cognitive Sciences and Technologies CNR, Rome, Italy
Posters and Demos	
Nadeschda Nikitina	University of Oxford, Oxford, UK
Dezhao Song	Thomson Reuters, Eagan, MN, USA
Industry Track	
Achille Fokoue	IBM Yorktown NY, USA
Peter Haase	metaphacts Walldorf, Germany

Doctoral Consortium	
Lora Aroyo	Vrije Universiteit Amsterdam, Amsterdam, The Netherlands
Fabien Gandon	INRIA Sophia-Antipolis, France
Semantic Web Challen	ige
Dan Bennett	Thomson Reuters, Eagan, MN, USA
Axel Ngonga	University of Paderborn, Paderborn, Germany
Heiko Paulheim	University of Mannheim, Mannheim, Germany
Sponsorship	
Michel Dumontier	Maastricht University Maastricht, The Netherlands
Sabrina Kirrane	WU Wien, Vienna, Austria
Harald Sack	FIZ Karlsruhe, KIT Karlsruhe, Karlsruhe, Germany
<b>Student Coordinators</b>	
Gianluca Demartini	University of Queensland, Brisbane, Australia
Lalana Kagal	Massachusetts Institute of Technology Boston, MA, USA
Proceedings	
Christoph Lange	University of Bonn, Bonn, Germany
Metadata	
Stefan Dietze	L3S, Leibniz University, Hanover, Germany
Davide Taibi	Institute for Educational Technology CNR, Palermo, Italy
Publicity	
Anna Lisa Gentile	IBM Research Almaden San Jose, CA, USA
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Javier D. Fernández	WU Wien, Vienna, Austria
Yvonne Poul	SBA Research Vienna, Austria
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data.world brings together the data tools and formats you use today by leveraging the power of RDF and SPARQL, and a rich set of APIs and integrations. Query within and across datasets, work in familiar tools, and sync changes with data.world connectors.

data.world leverages the power of linked data to breathe new life into previous projects and to light up dark data by organizing your team's ad-hoc output - so valuable knowledge isn't lost but is captured back into the data assets, using semantic web standards.

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#### Computer vision and multimedia

Video content understanding, cloud-based vision services, multimodal comprehension: machine vision

#### Machine learning: AI Foundations

Deep learning, reinforcement learning, braininspired, learning to learn, interpretability, optimization, learning with memories

#### Knowledge representation and reasoning

Automated knowledge base creation, symbolic and trainable logic, reusable representations, document understanding

3

#### Novel systems

Neuromorphic, quantum computing

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- **1954** Mark I and Mark II Automatic Language Translators
- 1959 Checkers Player
- **1972** Probabilistic Speech Recognition
- **1984** First real time demonstration of a Large Vocabulary Speech Recognition Dictation System
- **1988** Statistical Translation Between Languages
- 1992 TD-Gammon
- 1995 Image Retrieval
- 1997 Deep Blue Chess
- 2000 Statistical machine translation
- 2002 BLEU metric

10

**2011** IBM<sup>°</sup> Watson<sup>™</sup> Jeopardy!

6 Nobel Turing Prizes Award

avli Nation izes Medal

5

of Patent Recipient for 24 Years

#1

ational edals of chnology al Kyoto Prize

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#### TUESDAY, October 24, 9:00 am

## KEYNOTES DEBORAH L. MCGUINNESS

Tetherless World Senior Constellation Chair Professor of Computer, Cognitive, and Web Sciences Rensselaer Polytechnic Institute



MONDAY, October 23, 9:30 am

## **KEYNOTES** NADA LAVRAČ

Head of Department of Knowledge Technologies at Jožef Stefan Institute Vice Dean at Jožef Stefan International Postgraduate School Professor of Computer Science at the University of Nova Gorica



### Ontologies for the Modern Age

Ontologies are seeing a resurgence of interest and usage as big data proliferates, machine learning advances, and integration of data becomes more paramount. The previous models of sometimes laborintensive, centralized ontology construction and maintenance do not mesh well in today's interdisciplinary world that is in the midst of a big data, information extraction, and machine learning explosion. In this talk, we will provide some historical perspective on ontologies and their usage, and discuss a model of building and maintaining large collaborative, interdisciplinary ontologies along with the data repositories and data services that they empower. We will give a few examples of heterogeneous semantic data resources made more interconnected and more powerful by ontology-supported infrastructures, discuss a vision for ontologyenabled future research and provide some examples in a large health empowerment joint effort between RPI and IBM Watson Health.

#### **BIOGRAPHY**

Deborah McGuinness is the Tetherless World Senior Constellation Chair and Professor of Computer, Cognitive, and Web Sciences at RPI. She is also the founding director of the Web Science Research Center. Deborah has been recognized with awards as a fellow of the AAAS for contributions to the Semantic Web, knowledge representation, and reasoning environments and as the recipient of the Robert Engelmore award from AAAI for leadership in Semantic Web research and in bridging Artificial Intelligence (AI) and eScience, significant contributions to deployed AI applications, and extensive service to the AI community. Deborah currently leads a number of large diverse data intensive resource efforts and her team is creating next generation ontologyenabled research infrastructure for work in large interdisciplinary settings. Prior to joining RPI, Deborah was the acting director of the Knowledge Systems, Artificial Intelligence Laboratory and Senior Research Scientist in the Computer Science Department of Stanford University, and previous to that she was at AT&T Bell Laboratories. Deborah also has consulted with numerous large corporations as well as emerging startup companies wishing to plan, develop, deploy, and maintain Semantic Web and/or AI applications. Some areas of recent work include: data science, next generation health advisors, ontology design and evolution environments, semantically-enabled virtual observatories, semantic integration of scientific data, contextaware mobile applications, search, eCommerce, configuration, and supply chain management. Deborah holds a Bachelor of Math and Computer Science from Duke University, her Master of Computer Science from University of California at Berkeley, and her Ph.D. in Computer Science from Rutgers University.

### From Relational to Semantic Data Mining

Relational Data Mining (RDM) addresses the task of inducing models or patterns from multi-relational data. One of the established approaches to RDM is propositionalization, characterized by transforming a relational database into a single-table representation. The talk provides an overview of propositionalization algorithms, and a particular approach named wordification, all of which have been made publicly available through the web-based ClowdFlows data mining platform. The focus of this talk is on recent advances in Semantic Data Mining (SDM), characterized by exploiting relational background knowledge in the form of domain ontologies in the process of model and pattern construction. The open source SDM approaches, available through the ClowdFlows platform, enable software reuse and experiment replication. The talk concludes by presenting the recent developments, which allow to speed up SDM by data mining and network analysis approaches.

#### BIOGRAPHY

Nada Lavrač is Head of Department of Knowledge Technologies at Jožef Stefan Institute, Ljubljana, Slovenia. She is Professor of Computer Science at the University of Nova Gorica and Jožef Stefan International Postgraduate School in Ljubljana, where she acts as Vice-Dean and Head of ICT programme. Her research interests are in Knowledge Technologies, with particular interests in machine learning, data mining, text mining, knowledge management and computational creativity. Her special interest is in supervised descriptive rule induction, where the research goal is to automatically induce rules from class labeled data, stored either in simple tabular format or in complex relational databases. Areas of her applied research include data mining applications in medicine, healthcare, and bioinformatics. She is (co-)author of several books, including Foundations of Rule Learning, Springer 2012.

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#### WEDNESDAY, October 25, 9:00 am

## KEYNOTES JAMIE TAYLOR



Manager of Knowledge Graph Schema Team at Google

## Applied semantics: beyond the catalog

A decade ago a number of semantic catalogs started appearing. These catalogs gave identifiers to things, assigned them categories and asserted facts about them. Dubbed knowledge graphs, the intent is to describe the world in a machine readable way.

These catalogs have proved incredibly useful, allowing publishers to organize their content management systems, powering machines that can win game shows and allowing search engines to guide users by interpreting their queries as being about "things not strings." While useful, these catalogs are semantically limited. The connections entities participate in are sparse, requiring human understanding when decoding relationships and categorical membership. Entities are frequently identified by lucky linguistic matches rather than constraints against semantic intent.

If machines are to understand our world and react intelligently to requests about it, knowledge graphs need to grow beyond catalogs, encoding things which stretch the notion of "fact" and act as semantic APIs for the real world.

#### **BIOGRAPHY**

Jamie manages the Schema Team for Google's Knowledge Graph. The team's responsibilities include extending KG's underlying semantic representation, growing coverage of the ontology and enforcing semantic policy. He joined Google following the acquisition of Metaweb Technologies where he was the Minister of Information, helping organize data in Freebase and evangelizing semantic representation to web developers. Prior to Metaweb, Jamie worked in enterprise software as CTO of Determine Software and before that started one of the first ISPs in San Francisco. He is co-author of the O'Reilly book, "Programming the Semantic Web." Jamie has a PhD from Harvard University and earned his bachelor's degree from Colorado College, where he graduated magna cum laude.



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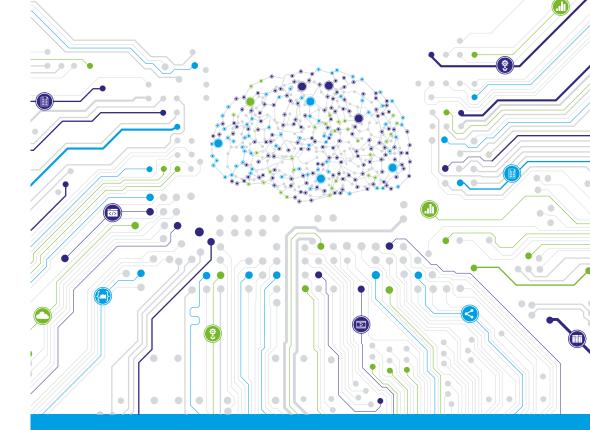
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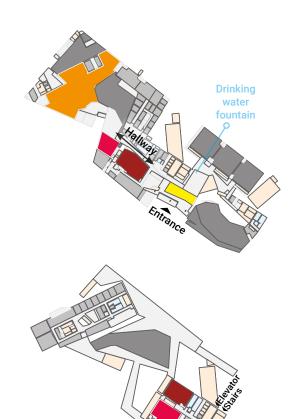




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SATURDAY, SUNDAY AND MONDAY EVENING FLOOR PLAN WU Libary & Learning Center (LC) **Teaching Center** (TC)



#### WU -BUILDING TC -GROUND FLOOR

Mensa (Lunches, Coffee, Posters, Demos)

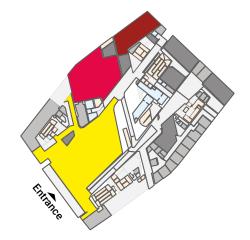
**TC Hall** (Cloak Room/Administration)

TC0.01 (Lecture Hall)

**Foyer** (Registration)

#### WU -BUILDING TC - 1st floor

- TC1.02 (Lecture Hall)
- **TC1.01** (Lecture Hall)



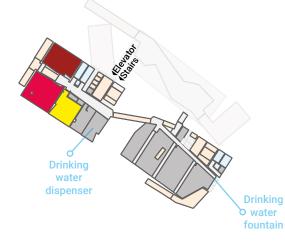
#### WU -BUILDING LC

Festsaal 2 ("Business Treff" Semantics in the Field)

#### Festsaal 1

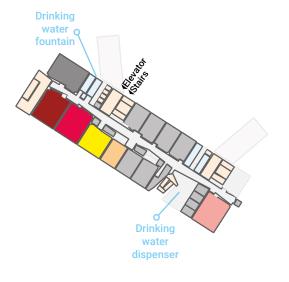
(Posters & Jam Session)

**Forum** (Demos + DC Posters)



#### WU -BUILDING TC - 2<sup>nd</sup> floor

- TC2.02 (Lecture Hall)
- TC2.01 (Lecture Hall)
- TC2.03 (Lecture Hall)



# FLOOR PLAN MESSE

#### WU -BUILDING TC - 3rd floor

**TC3.01** (Lecture Hall)

- TC3.03 (Lecture Hall)
- TC3.05 (Lecture Hall)
- TC3.07 (Lecture Hall)
- TC3.21 (Lecture Hall)





#### ADRESSES

Workshops and Tutorials (Sat and Sun): Welthandelsplatz 1 A-1020 Vienna

Main Conference: Messe Wien Exhibition Congress Center Messeplatz 1 A-1021 Vienna

# Drinking water o fountain TC4.01 (Lecture Hall)

#### WU -BUILDING TC - 4<sup>th</sup> floor

SATURDAY, October 21

## WORKSHOPS & TUTORIALS

9:00- 17:10	ОМ	Ontology Matching Organizers: Pavel Shvaiko, Jérôme Euzenat, Ernesto Jiménez-Ruiz, Michelle Cheatham and Oktie Hassanzadeh	TC.1.01
	0		r

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 goals of the workshop are to (1) bring together leaders from academia, industry and user institutions to assess how academic advances are addressing real-world requirements in this area; (2) conduct an extensive and rigorous evaluation of ontology matching and instance matching (link discovery) approaches through the OAEI (Ontology Alignment Evaluation Initiative1) 2017 campaign; (3) 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.

```
9:00-
17:10
```

Constructing Domain-specific Knowledge Graphs Organizers: Mayank Kejriwal, Pedro Szekely and Craig Knoblock

The vast amounts of ontologically unstructured information on the Web, including semi-structured HTML, XML and JSON documents, natural language documents, tweets, blogs, markups, and even structured documents like CSV tables, all contain useful knowledge that can present a tremendous advantage to Semantic Web researchers if extracted robustly, efficiently and semi-automatically as an RDF knowledge graph. Domain-specific Knowledge Graph Construction (KGC) is an active research area that has recently witnessed impressive advances due to machine learning techniques like deep neural networks and word embeddings. This tutorial will synthesize and present KGC techniques, especially information extraction (IE) in a manner that is accessible to Semantic Web researchers, as well as lessons from actual IE implementations, to accomplish this purpose through visually intuitive and example-driven slides, accessible, high-level overviews of related work, instructor demos, and at least five IE participatory activities that attendees will be able to set up on their laptops.

9:00-	wo
17:10	000

Ontology Design and Patterns VOP Organizers: Eva Blomqvist, Oscar Corcho, Matthew Horridge, Rinke Hoekstra and David Carral

The Workshop on Ontology Design and Patterns targets topics relating to high quality ontology design. The workshop series addresses topics centered around quality in ontology design as well as ontology design patterns (ODP) in Semantic Web data and ontology engineering. ODPs have seen a sharp rise in attention in the past few years, both pertaining to this workshop series and other related events. Patterns can benefit knowledge engineers and Semantic Web developers with a direct link to requirements, reuse, guidance, and better communication. They need to be shared by a community in order to provide a common language, hence the aim of this workshop is twofold: 1) providing an arena for discussing patterns, pattern-based ontologies, systems, datasets, etc., and 2) broadening the pattern community by developing its own ``discourse'' for discussing and describing relevant problems and their solutions. Related to the latter aim we see that it is an opportune time to open up the workshop to other approaches focusing on high quality ontology design, e.g. other methods and tools, with the intention to cross-fertilise these with the ODP idea.

9:00-12:20 
 Semantic Web meets Internet of Things (IoT) and Web of Things (WoT)

 SWoTIoT
 Organizers: Amelie Gyrard, Maria Maleshkova, Nicolas Seydoux and
 TC.2.02

 Muhammad Intizar Ali (AH)
 TC.2.02
 TC.2.02

An ever growing interest and wide adoption of Internet of Things (IoT) technologies is unleashing a true potential of designing a broad range of advanced consumer applications. Smart cities, smart buildings and e-health are among various application domains, which are benefiting from IoT technologies. Diversity, dynamicity and heterogeneity of IoT devices, networks and data are among major challenges hindering the wide adoption of IoT technologies. Semantic Web technologies (SWT) have been effectively used in various domains, in particular to address the heterogeneity aspect. SWT allows (i) easing the IoT data representation \& management, (ii) deducing new knowledge to build smart applications and (iii) maintaining interoperability at IoT data processing level. We will familiarize our audience with the "evolution" of IoT to Web of things (WoT), which is based on existing Web standards. The combining of Semantic Web technologies and Web of Things paves the way for the Semantic Web of Things. This tutorial will introduce the building blocks of the IoT and WoT that enable rapid development of Semantic Web of Things applications. Towards that goal, the tutorial will also demonstrate how Semantic Web technologies are employed for semantic annotation and reasoning on the IoT data to build interoperable applications. One key aspect is helping IoT developers in dealing with Semantic Web technologies by reducing the learning curve as much as possible. We will showcase real-world use case scenarios which are designed using semantically enabled IoT frameworks (e.g. HIGHTS, CityPulse, FIESTA-IoT).

9:00-12:20 H

#### Hybrid Statistical Semantic Understanding and Emerging Semantics HSSUES Organizers: Xin Dong, Ramanathan Guha, Pascal Hitzler, Mayank Kejriwal, Freddy Lecue, Dandapani Sivakumar, Pedro Szekely and Michael Witbrock TC.3.01

Understanding the semantics of Web content is at the core of many applications, ranging from Web search, news aggregation and machine translation to personal assistant services such as Amazon Echo, Cortana, Siri, and Google Home. Presently, two different approaches apply to this task. The first approach utilizes a rich suite of information retrieval and machine learning techniques that capture meaning through powerful statistical tools like neural networks. Recently, such emerging semantic models have achieved state-of-the-art results in several predictive applications. The second approach conveys meaning in a structured form through embedded data markup (using Schema. org, OGP, etc.) and ontologies, and be further enhanced through available knowledge bases such as Freebase and DBpedia. The HSSUES workshop will explore the synergy, from perspectives of theory, application, experiments (including negative results) and vision, between both approaches, and how such synergies can be exploited to create powerful applications. We are interested in mechanisms that range the spectrum of possible strategies and provide novel functionalities through hybrid approaches. The broader goal is to foster a discussion that will lead to cross-cutting ideas and collaborations at a timely moment when Semantic Web research has significantly started intersecting with the natural language processing and knowledge discovery communities.

9:00-12:20

#### Queryable Compression Format for Linked Data Organizers: Wouter Beek, Ruben Verborgh and Javier D. Fernández

TC.2.03

The steady adoption of Linked Data in recent years has led to a significant increase in the volume of RDF datasets. The potential of this Semantic Big Data is under-exploited when data management is based on traditional, human-readable RDF representations, which add unnecessary overheads when storing, exchanging and consuming RDF in the context of a large-scale and machine-under-standable Semantic Web. HDT tackles this issue by proposing a binary representation for RDF data. HDT can be seen as a compressed, self-contained triple store for RDF. On the one hand, HDT represents RDF with compact data structures that enable the storage, parsing and loading of Big Semantic Data in compressed space. At the same time, "the HDT data are the index", and thus it can be used as a graph data store that reports competitive querying performance. In this tutorial we will focus on providing a hands-on experience with HDT. We will also welcome external presentations on related topics and a discussion on next steps for the interested community.

TC.2.01

#### SATURDAY, October 21

9:00- 17:10	Enabling Open Semantic Science SemSci Organizers: Jun Zhao, Daniel Garijo, Tobias Kuhn, Tomi Kauppinen and Willem van Hage	TC.3.03
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In the past few years, a push for open reproducible research has led to a proliferation of community efforts for publishing raw research objects like datasets, software, methodologies, etc. These efforts underpin research outcomes much more explicitly accessible. However, the actual time and effort required to achieve this new form of scientific communication remains a key barrier to reproducibility. Furthermore, scientific experiments are becoming increasingly complex, and ensuring that research outcomes become understandable, interpretable, reusable and reproducible is still a challenge. The goal of this workshop is to incentivize practical solutions and fundamental thinking to bridge the gap between existing scientific communication methods and the vision of a reproducible and accountable open science. Semantic Web technologies provide a promising means for achieving this goal, enabling more transparent and well-defined descriptions for all scientific objects required for this new form of science and communication.

#### 14:00-17:10

SemDaPra Organizers: Olaf Hartig and Olivier Curé

TC.2.03

After years of research and development, standards and technologies for semantic data are sufficiently mature to be used as the foundation of novel data science projects that employ semantic technologies in various application domains such as bio-informatics, materials science, criminal intelligence, and social science. Typically, such projects are carried out by domain experts who have a conceptual understanding of semantic technologies but lack the expertise to choose and to employ existing data management solutions for the semantic data in their project. For such experts, including domain-focused data scientists, project coordinators, and project engineers, our tutorial will deliver a practitioner's guide to semantic data management. We will discuss the following important aspects of semantic data management and demonstrate how to address these aspects in practice by using mature, production-ready tools: Storing and querying semantic data; understanding, searching, and visualizing the data; automated reasoning; integrating external data and knowledge; and, cleaning the data.

14:00-	SWIT	Semantic Web Technologies for the IoT	TC.2.02
17:10	30011	Organizers: Maria Maleshkova, Ruben Verborgh and Amelie Gyrard	10.2.02

Current developments on the Internet are characterised by the wider use of network-enabled devices, such as sensors, mobile phones, and wearables that serve as data providers or actuators, in the context of client applications. Even though real-life objects can finally participate in integrated scenarios, the use of individual and specific interaction mechanisms and data models lead to realising isolated islands of connected devices or to custom solutions that are not reusable. To this end, the vision of the Internet of Things (IoT) is to leverage Internet standards in order to interconnect all types of embedded devices (e.g., patient monitors, medical sensors, congestion monitoring devices, traffic-light controls, temperature sensors, smart meters, etc.) and real-world objects, and thus to make them a part of the Internet and provide overall interoperability. Therefore, IoT aims to build a future of connected devices that is truly open, flexible, and scalable. The SWIT (Semantic Web technologies for the IoT) workshop aims to contribute towards achieving this goal by exploring how existing well-established Semantic Web Technologies can be used to solve some of the challenges that the IoT currently faces. The focus of the workshop is on solving IoT challenges with Semantic Web Technologies.

## 14:00-<br/>17:10ReQuLGDRepresentation and Querying for Linked Geospatial Data<br/>Organizers: Manolis Koubarakis and Konstantina BeretaTC.2.02

The web of data has recently been populated with linked geospatial data as various geospatial data sources have been transformed into RDF and added to the linked data cloud (e.g., Geonames, Open Street Map, CORINE land cover etc.). Therefore, it is important to study how to represent geospatial data in RDF and how to query it using SPARQL. Researchers from the areas of Semantic Web and Linked Data have studied theses problems recently. The results of this research has been the development of geospatial extensions of RDF and SPARQL, and the implementation of geospatial RDF stores. In this tutorial, we present a comparative survey of current research in this area and point to directions for future work.

TC.3.01

14:00-17:10 BLINK

9:00-

17:10

Benchmarking Linked Data Organizers: Axel-Cyrille Ngonga Ngomo, Michael Röder and Irini Fundulaki

The provision of benchmarks has been shown to push the development of innovative solutions throughout the history of computer science. The increasing uptake of Linked Data as a technology for the easy integration across different industries has led to Linked-Data-driven solutions being faces with higher requirements pertaining to their performance. The objective of the BLINK workshop series is to provide a discussion forum where research, industry and other users can meet to discuss the performance of current solutions, the methodology, performance indicators and benchmarks used to quantify this performance and current strengths and weaknesses of current approaches for benchmarking Linked-Data-driven solutions. The workshop will aim to be a forum for discussing and cross-fertilizing benchmarking practices across all steps of the Linked Data lifecycle.

#### SUNDAY, October 22

# VOILAVisualization and Interaction for Ontologies and Linked Dat<br/>Organizers: Valentina Ivanova, Patrick Lambrix, Steffen Lohmann and<br/>Catia PesquitaTC.1.01A picture is worth a thousand words', we often say, yet many areas are in demand of sophisticated

visualization techniques, and the Semantic Web is not an exception. The size and complexity of ontologies and Linked Data in the Semantic Web is not an exception. The size and complexity of ontologies and Linked Data in the Semantic Web constantly grows and the diverse backgrounds of the users and application areas multiply at the same time. Providing users with visual representations and sophisticated interaction techniques can significantly aid the exploration and understanding of the domains and knowledge represented by ontologies and Linked Data. There is no one-size-fits-all solution but different use cases demand different visualization and interaction techniques. Ultimately, providing better user interfaces, visual representations and interaction techniques will foster user engagement and likely lead to higher quality results in different applications employing ontologies and proliferate the consumption of Linked Data.

#### 9:00-17:10 DeSemWeb Decentralizing the Semantic Web Organizers: Ruben Verborgh, Andrei Sambra and Tobias Kuhn

TC.1.02

The Semantic Web is increasingly becoming a centralized story: we rely on large-scale server-side infrastructures to perform intense reasoning, data mining, and query execution. Therefore, we urgently need research and engineering to put the "Web" back in the "Semantic Web", aiming for intelligent clients—instead of intelligent servers—as sketched in the original Semantic Web vision. The DeSeWe017 workshop purposely takes a radical perspective by focusing solely on decentralized and client-side applications, to counterbalance the centralized discourse of other tracks. While we recognize the value in all subfields of the Semantic Web, we see an urgent need to revalue the role of clients. This workshop will help put different topics on the Semantic Web community's research agenda, which should lead to new inspiration and initiatives to build future Semantic Web and Linked Data applications.

9:00- 12:20	MT4OBDA	Methods and Tools for Developing Ontology-Based Data Access Solutions Organizers: Giuseppe De Giacomo, Domenico Lembo, Antonella Poggi, Valerio Santarelli and Domenico Fabio Savo	TC.2.02
	The tutorial	illustrates methodologies for developing ontology-based data access (OBD/	A) applica-

The tutorial infustrates interfoodolgies for developing officiology-based data access (OBDA) applications, which aim at coupling conceptual views of information, expressed as Description Logic ontologies, with actual and possibly pre-existing data stores. In the tutorial we will present the basics of OBDA, introduce a graphical model for quick development of OWL 2 ontologies, survey typical mechanisms to link ontologies with data, and discuss some special reusable patterns for modeling recurrent representation needs. We will conduct an hands-on-session in which participants will develop (small) OBDA applications and will experiment OBDA functionalities, such as answering SPARQL queries, by exploiting state-of-the-art OBDA tools.

#### SUNDAY, October 22

9:00- 12:20	NLIWOD	Natural Language Interfaces for the Web of Data Organizers: Key-Sun Choi, Jin-Dong Kim, Axel-Cyrille Ngonga Ngomo and Ricardo Usbeck	TC.2.01
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This workshop is a joint event of two active communities in the area of interaction paradigms to Linked Data: NLIWOD3 and QALD. NLIWOD, a workshop for discussions on the advancement of natural language interfaces to the Web of Data, has been organized twice within ISWC, with a focus on soliciting discussions on the development of question answering systems. QALD is a benchmarking campaign powered by the H2020 project HOBBIT (project-hobbit.eu) including question answering over (Big) linked data, has been organized as a challenge within CLEF and ESWC. This time, we will hold a joint workshop to attract people from the two communities in order to promote active collaboration, to extend the scope of currently addressed topics, and to foster the reuse of resources developed so far. Furthermore, we offer an OpenChallenge - QALD-8 - where users are free to demonstrate the capabilities of their systems using the provided online benchmark platform. Furthermore, the scope of this workshop will extend to dialogue systems and chatbots as increasingly important business intelligence factors.

9:00-		Humanities in the Semantic Web	TC.2.03
17:10	whise	Organizers: Alessandro Adamou, Enrico Daga and Leif Isaksen	10.2.05

WHiSe is an emerging symposium aimed at strengthening communication between scholars in the Digital Humanities and Linked Data communities, to discuss unthought-of opportunities arising from the research problems of the former. Inspired by pioneering work in cultural heritage and digital libraries, WHiSe reflects the rise of research interests in applying data science to fields such as musicology and digital archaeology, in an effort to stimulate the formation of a harmonic ecosystem where critical issues in Semantics and the Humanities can be investigated. Its best-of-both-worlds format accommodates the practices of scholarly dialogue in both fields, by welcoming rigorously peer-reviewed research papers, as well as mature running systems and debate on future research directions.

9:00- 17:10	DrivOn	Society, Privacy and the Semantic Web - Policy and Technology Organizers: Sabrina Kirrane, Christopher Brewster, Michelle Cheatham, Mathieu D'Aquin and Stefan Decker	TC.3.01
	DrivOn		т

Schneier's article "The Internet is a surveillance state" summarised the state of Internet privacy as "Welcome to an Internet without privacy, and we've ended up here with hardly a fight". Later, Snowden revealed that the NSA was tracking online communication, followed by revelations that other countries were running similar covert operations. Autumn 2015 saw the collapse of the EU-US Safe Harbor Agreement, which resulted in legal uncertainty regarding transatlantic data exchange, while April 2016 saw the ratification of the the new EU Data Protection Regulation, which will come into being in May 2018, after years of discussion involving parliamentarians, lobbyists and activists. On the 28th anniversary of the Web, Tim Berners-Lee sent a widely spread open letter warning of the devastating effect of losing control over personal data and the spread of misinformation, especially on the political scene. This workshop aims to raise awareness that the technologies our community are working on have global societal consequences and, vice versa, our research can be guided by social, economic and legal privacy requirements. This year's workshop will build on previous workshops by investigating the privacy implications of semantic technology and also exploring how the technology can be used to support privacy preservation.

#### How to Build a Stream Reasoning Application StreamApp Organizers: Daniele Dell'Aglio, Emanuele Della Valle, Thu Le-Pham, Alessandra Mileo and Riccardo Tommasini TC.3.03

The goal of the tutorial "How to build a stream reasoning application" is threefold: to (1) present interesting research problems for Semantic Web that arise in querying and reasoning on a variety of highly dynamic data, (2) introduce stream reasoning techniques to Semantic Web researchers as powerful tools to use when addressing a data-centric problem characterised both by variety and velocity, and (3) to guide the participants through the construction of a stream reasoning application.

9:00-	SemStats
12:20	Semsials

## Semantic Statistics Organizers: Sarven Capadisli, Franck Cotton, Raphaël Troncy, Armin TC.3.05 Haller and Evangelos Kalampokis

The goal of the SemStats workshop is to explore and strengthen the relationship between the Semantic Web and statistical communities, and to provide better access to the data held by statistical offices. It will focus on ways in which statisticians can use Semantic Web technologies and standards in order to formalize, publish, document and link their data and metadata, and also on how statistical methods can be applied on linked data. The statistical community shows more and more interest in the Semantic Web. In particular, initiatives have been launched to develop semantic vocabularies representing statistical classifications and discovery metadata. Tools are also being created by statistical organizations to support the publication of dimensional data conforming to the Data Cube W3C Recommendation. But statisticians see challenges in the Semantic Web: how can data and concepts be linked in a statistical ly rigorous fashion? How can we avoid fuzzy semantics leading to wrong analysis? How can we preserve data confidentiality? The SemStats workshop will also cover the question of how to apply statistical methods or treatments to linked data, and how to develop new methods and tools for this purpose. Except for visualization techniques and tools, this question is relatively unexplored, but the subject will obviously grow in importance in the near future.

9:00- 17:10	S4BioDiv	Semantics for Biodiversity Organizers: Alsayed Algergawy, Naouel Karam, Friederike Klan and Clement Jonquet	TC.3.21
	Piodivorsity r	peoprehaims at comprehending the totality and variability of organisms, their	r morpho

Biodiversity research aims at comprehending the totality and variability of organisms, their morphology, genetics, life history, habitats and geographical ranges, it is usually used to refer to biological diversity at three levels: genetics, species, and ecology. Biodiversity is an outstanding domain that deals with heterogeneous datasets and concepts generated from a large number of disciplines in order to build a coherent picture of the extend of life on earth. The presence of such a myriad of data resources makes integrative biodiversity increasingly important in the life sciences research. However, it is severely strangled by the way data and information are made available. The Semantic Web approach enhances data exchange, discovery, and integration by providing common formats to achieve a formalized conceptual environment. This workshop aims to bring together computer scientists and biologists, working on Semantic Web approaches for biodiversity and related areas such as agriculture or agro-ecology. The goal is to exchange experiences, build a state of the art of realizations and challenges and reuse and adapt solutions that have been proposed in other domains. The workshop focuses on presenting challenging issues and solutions for the design of high quality biodiversity information systems based on Semantic Web techniques.

#### 14:00-17:10

#### Ontology Modularity, Contextuality, and Evolution WOMoCoE Organizers: Loris Bozzato, Thomas Eiter, Martin Homola and Daniele Porello TC.2.01

In the Semantic Web and Linked Data, knowledge is rarely considered a monolithic and static unit. Instead, partitioning knowledge into distinct modular structures is central to organize knowledge bases, from their design to their management, from their maintenance to their use in knowledge sharing. From a different perspective, representing and reasoning about the context respective to the knowledge in distinct modules is essential for their correct exploitation and for reliable and effective reasoning in changing situations. Finally, evolution of knowledge resources, in terms of updates by newly acquired knowledge, is an important factor influencing the meaningfulness of stored knowledge over time. Considering these emerging needs in the Semantic Web / Linked Data community, the 2nd International Workshop on Ontology Modularity, Contextuality, and Evolution or practical and theoretical aspects of modularity, contextuality and evolution of knowledge resources. The workshop aims to bring together an interdisciplinary audience interested in its topics both from a theoretical and formal point of view (i.e. researchers from philosophy, logic, cognitive science, and linguistics) and from an applicational perspective (i.e. Semantic Web / Linked Data knowledge engineers, adopters from various application domains).

9:00-

12:20

SUNDAY, October 22

14:00- 17:10	WSP	Web Stream Processing Organizers: Key-Sun Choi, Jin-Dong Kim, Axel-Cyrille Ngonga Ngomo and Ricardo Usbeck	TC.3.03
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More and more applications require real-time processing of massive, dynamically generated, ordered data, where order is often an essential factor reflecting recency. Data stream management techniques provide reactive and reliable processing mechanisms over such data. Key to their success is the use of streaming algorithms that harness the natural or enforceable orders in the data. This trend started to be visible also in the Web, where an increasing number of streaming sources and datasets are becoming available. They originate from social networks, sensor networks, Internet of Things (IoT) and many other technologies that find in the Web a platform for sharing data. This is resulting in new Web-centric efforts such as the Web of Things, which studies how to expose and describe IoT using the Web, or the Social Web, which investigates protocols, vocabularies, and APIs to facilitate access to social functionality as part of the Web. In the Semantic Web context emerged efforts like Stream Reasoning and RDF Stream Processing. Stream Reasoning aims at combing data stream management and semantic technologies to perform reasoning over massive, heterogeneous and dynamic data;, while RDF Stream Processing studies the continuous query answering process over data streams modelled accordingly to the RDF model. The WSP workshop aims at putting together such sub-communities and to discuss and investigate holistic processing models for streams over the Web, which consider the issues about publishing data streams on the Web as well as processing them with queries and inference processes. The event will contribute in the creation of an active community interested in integrating stream processing and reasoning by using methods inspired by data and knowledge management.

14:00- 17:10	LD4IE Organizers: Anna Lisa Gentile, Ziqi Zhang and Andrea Giovanni I Nuzzolese		TC.2.01
	on (IE), which ments on the lity of learning are expensive and connecti as URIs and R which constit cient learning redundancy a challenges ar user defined (training data	rkshop focuses on the exploitation of Linked Data for Web Scale Informatio concerns extracting structured knowledge from unstructured/semi-structu Web. One of the major bottlenecks for the current state of the art in IE is th g materials (e.g., seed data, training corpora), which, typically are manually cr e to build and maintain. Linked Data (LD) defines best practices for exposin ng data, information, and knowledge on the Semantic Web using uniform m DF. It has so far been created a gigantic knowledge source of Linked Open D utes a mine of learning materials for IE. However, the massive quantity rec g algorithms and the unguaranteed quality of data requires robust methods and noise. LD4IE intends to gather researchers and practitioners to addres ising from the usage of LD as learning material for IE tasks, focusing on (i) extraction tasks using LD; (ii) gathering learning materials from LD assuri selection, cleaning, feature selection etc.); (iii) robust algorithms for variou publishing IE results to the LOD cloud.	ired docu- e availabi- eated and g, sharing, eans such bata (LOD), quires effi- to handle is multiple modeling ing quality

14:00- 17:10	BlkMirror	Re-coding Black Mirror Organizers: Pinelopi Troullinou, Mathieu d'Aquin and Ilaria Tiddi	TC.4.01
	0	ack Mirror aims at exploring potential solutions that Semantic Web technolo al and ethical concerns emanating from the wide use of digital advancen	0
	0	8	

bring to social and ethical concerns emanating from the wide use of digital advancements. The potential risks of a dystopian future as depicted in scenarios such as the ones of the British sci-fi series Black Mirror will be explored from a multi-disciplinary and dialectic approach. The workshop will enable participants to address emerging social phenomena from different perspectives building bridges in practice between two arguably distinct 'worlds' - the ones of computer and social sciences, introducing a rather innovative methodological approach, namely the one of animated case scenarios. Indeed, Re-coding Black Mirror aims at promoting the dialogue between Semantic Web researchers and social sciencits drawing upon case scenarios on specific technologies, with the objective to make emerge potential semantic solutions to societal and ethical challenges as discussed intensively within social science fields such as surveillance and mobile media studies. It will also be a forum for raising opportunities of networking with scholars from different fields to explore novel research problems that can be relevant to both communities. To that end, the workshop will have a mixed program committee and target audience, combining both traditions.

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## 14:00-<br/>17:10PROFILESDataset PROFILing and fEderated Search for Web Data<br/>Organizers: Elena Demidova, Stefan Dietze, Julian Szymanski and John<br/>BreslinTC.3.05

The Web of Data, including Linked Data and knowledge graphs, has seen tremendous growth recently. In addition, new forms of structured data have emerged in the form of Web markup, such as schema. org, and entity-centric data in the Web tables. Considering these rich, heterogeneous and evolving data sources which cover a wide variety of domains, exploitation of Web Data becomes increasingly important in the context of various applications, including federated search, entity linking, question answering and fact verification. These applications require reliable information on dataset characteristics, including general metadata, quality features, statistical information, dynamics, licensing and provenance. Lack of a thorough understanding of the nature, scope and characteristics of data from particular sources limits their take-up and reuse, such that applications are often limited and focused on well-known reference datasets. The PROFILES workshop series aim at gathering approaches to analyse, describe and discover data sources - including but not limited to SPARQL endpoints - as a facilitator for applications and tasks such as query distribution, semantic search, entity retrieval and recommendation. PRO-FILES offers a highly interactive forum for researchers and practitioners bringing together experts in the fields of Semantic Web, Linked Data, Semantic Search, Databases, NLP, IR and application domains.

## DOCTORAL CONSORTIUM PROGRAM

	Introduction and Keynote by Natasha Noy (Google)	
09:00-10:30	and Abraham Bernstein (University of Zurich)	Room: TC.3.07
10:30-11:00	Coffee Break	WU Mensa
11:00-12:00	Paper session 1	Room: TC.3.07
	Cleaning Noisy Knowledge Graphs	Ankur Padia
	Enabling Data Analytics from Knowledge Graphs	Henrique Santos
	What do Others Say About Similar Things – Predicate Comparing for a Linked Data Quality Boost	Benedikt Hitz-Gamper
	Ontology testing based on requirements formalization	Alba Fernandez-
	in collaborative development environments	Izquierdo
12:00 - 12:30	Poster Session 1	Room: WU Mensa
	Lunch	Room: WU Mensa
14:00 - 15:00	Paper Session 2	Room: TC.3.07
	Retrieval of the most relevant facts from data streams joined with slowly evolving dataset published on the Web of Data	Shima Zahmatkesh
	ProvDS:Uncertain Provenance Management over Incomplete Linked Data Streams	Qian Liu
	Automatic Learning Content Sequence via Linked Open Data	Rubén Francisco Manrique
	A Framework for Recommending Ontology Matching Systems based on Application Requirements	Diego Pessoa
	Poster Session 2	Room: WU Mensa
15:30 - 16:00	Coffee Break 2	Room: WU Mensa
16:00 - 17:00	Paper Session 3	Room: TC.3.07
	Time-Aware Entity Linking	Renato Stoffalette Joao
	IDRA: An ontology driven Cognitive Computing System	Roberto Enea
	Towards automatic deployment of data platforms from existing data sources	Mohammad Noorani Bakerally
	Towards interoperability in the public sector	Raf Buyle
17:00 - 17:30	Poster Session 3	Room: WU Mensa



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Thomson Reuters is proud to sponsor the 16th International Semantic Web Conference and support the linked data community with open data at **permid.org** and CM-Well, our open source graph management software.

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## PROGRAM AT A GLANCE

	Saturday,	October 21				
Room	9:00	10:30-11.00	12:20	14:00	15.20-16.00	17:10
TC.1.01	OM: Ontolog	gy Matching				
TC.1.02	KGC: Constru	ucting Domain	-specific Know	edge Graphs		
TC.2.01	WOP: Ontology Design and Patterns					
TC.2.02	SWoTIoT: Semantic Web meets Internet SWIT: Semantic Web Technologies for things (IoT) and Web of Things (WoT) the IoT			logies for		
TC.2.03	HDT: Queryable Compression Format SemDaPra: Semantic Data Management in Practice					
TC.3.01	HSSUES: Hybrid Statistical Semantic Understanding and Emerging Semantics BLINK: Benchmarking Linked Data			d Data		
TC.3.03	SemSci: Enabling Open Semantic Science					
TC.3.21	ReQuLGD: Representation and Querying for Linked Geospatial Data			ind Querying		

	Sunday,	October 22				
Room	9:00	10:30-11.00	12:20	14:00	15.20-16.00	17:10
TC.1.01	VOILA: Visu	VOILA: Visualization and Interaction for Ontologies and Linked Data				
TC.1.02	DeSemWeb	p: Decentralizing	g the Semantic	Web		
TC.2.01	NLIWOD: N for the Web	latural Languag o of Data	e Interfaces	LD4IE: Linked Extraction	l Data for Inforr	mation
TC.2.02		MT4OBDA: Methods and Tools for Developing Ontology-Based Data Access Solutions WOMoCoE: Ontology Modularity, Cont- extuality, and Evolution			arity, Cont-	
TC.2.03	WHiSe: Hui	WHiSe: Humanities in the Semantic Web				
TC.3.01	PrivOn: Soc	ciety, Privacy and	d the Semantic	Web - Policy a	ind Technology	
TC.3.03		StreamApp: How to Build a Stream Reasoning Application WSP: Web Stream Processing			g	
TC.3.05	SemStats: S	Semantic Statist	ics		taset PROFILin arch for Web D	
TC.4.01				BlkMirror: Re-	-coding Black N	lirror
TC.3.07	Doctoral Co	onsortium				
TC.3.21	S4BioDiv: S	S4BioDiv: Semantics for Biodiversity				
	18:30		19:00			22:30
	Doors open Rathaus Welcome reception					
	T	UTORIALS	WORKS	HOPS	COFFEE BRE	AK

12:30- 14:00 LUNCH

Monday	/, October 23	Room
9:00	Opening Ceremony	
9:30	Keynote 1: Deborah McGuinness	Lehár 1-3
10:30	Coffee Break	
	Open Government, Risk & Compliance	Stolz 2
11.00	Data Quality	Lehár 1-3
11:00	Multilinguality	Stolz 1
	Reasoning I	Lehár 4
12:20	Lunch	Mensa
	Industry, Manufacturing & Automation	Stolz 2
14:00	Ontology Engineering I	Lehár 1-3
14:00	Alignment	Stolz 1
	Multimodal Linked Data	Lehár 4
15:20	Coffee Break	
	Publishing & Healthcare	Stolz 2
15:50	Minute Madness	Lehár 1-3
	Ontology Engineering II	Stolz 1
17:30	Business Event + setup for poster session	WU Building LC (Festsaal 2)
18:30	Poster and Demo reception	WU Builing LC (Forum & Festsaal 1)
21:30	Jam session	WU Builing LC (Festsaal 1)
uesday	/, October 24	Room
9:00	Keynote 2: Nada Lavrač	Lehár 1-3
10:00	Coffee Break	
	Knowledge Mining	Lehár 1-3
10:30	Querying: Benchmarks and Tools	Stolz 1
	Ontologies and Datasets I	Stolz 2
11:50	Lunch	Mensa
	Linking	Lehár 1-3
13:30	Description Logics	Stolz 1
	Semantic Web Challenge	Stolz 2
15:00	Coffee Break	
	Querying I	Lehár 1-3
15:30	Learning	Stolz 1
	Biomedical and scientific applications	Stolz 2
	Town Hall	Stolz 1
18:30	Conference Dinner	
lodner	day. October 25	Room
	iday, October 25	
9:00	Keynote 3: Jamie Taylor	Lehár 1-3
10:00	Coffee Break	
10.20	Embeddings and Deep Learning	Lehár 1-3
10:30	Languages	Stolz 1
44 50	Ontologies and Datasets II	Stolz 2
11:50	Lunch	Mensa
	Ontology-Based	Lehár 1-3
13:30	Data Access	Ctola 1
	Federation	Stolz 1
15.00	Reasoning II	Stolz 2
15:00	Coffee Break	

Lehár 1-3

Lehár 1-3

Stolz 2

Querying II

17:00 Closing Session

Lightning Talks

15:30

## SESSIONS MONDAY, OCTOBER 23

	Name	Chair	Room
9:00	Opening Ceremony		
9:30	Keynote 1: Deborah McGuinness		Lehár 1-3
10:30	Coffee Break		
	Open Government, Risk & Compliance	Achille Fokoue	Stolz 2
11.00	Data Quality	Philipp Cimiano	Lehár 1-3
11.00	Multilinguality	Vanessa Lopez	Stolz 1
	Reasoning I	Ernesto Jimenez Ruiz	Lehár 4
12:20	Lunch, SWJ and JWS Editorial Board Lunches		
	Industry, Manufacturing & Automation	Peter Haase	Stolz 2
14:00	Ontology Engineering I	Vojtech Svatek	Lehár 1-3
14.00	Alignment	Sofia Pinto	Stolz 1
	Multimodal Linked Data	Alasdair Gray	Lehár 4
15:20	Coffee Break		
	Publishing & Healthcare	Shirin Sohrabi	Stolz 2
15:50	Minute Madness	Nadeschda Nikitina, Dezhao Song	Lehár 1-3
	Ontology Engineering II	Jean Paul Calbimonte	Stolz 1
17:30	Business Event + setup for poster session		WU Building LC (Festsaal 2)
18:30	Poster and Demo reception		WU Builing LC (Forum & Fest- saal 1)
21:30	Jam session		WU Builing LC (Festsaal 1)

#### Opening Ceremony

9:00

Welcome addresses and general information, overview of the conference program, announcements of award nominees.

Spotlight papers (including award nominees)

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#### Stolz 2, 11:00 **Open Government, Risk & Compliance,** Chair: Achille Fokoue

SW at the department 'Omgeving' of the Flemish Gov, Paul Hermans

**Business intelligence Using the Knowledge Graph Built over the Russian Legal Entities Registry,** *Eugene Hlyzov, Sergey Isaev, Dmitry Pavlov, Yury Emelyanov, Olga Belyaeva, Dmitry Mouromtsev, Olga Parkchimovich and Maxim Kolchin* 

**The Qualification Data Repository (QDR): Enhancing Interoperability of Qualifications in Europe,** *Agissilaos Papantoniou, Jan Forster, Gregory Debacker, Natan Cox, Anders Fuglseth, Straton Samaridis, Pieter Fannes and Dominique Vandensteen* 

Semantic Concept Discovery Over Event Data,

Oktie Hassanzadeh, Shari Trewin and Alfio Massimiliano Gliozzo

Using Lightweight Semantic Models to Assist Risk Management in a Large Enterprise, Shirin Sohrabi, Anton Riabov, Octavian Udrea and Fang Yuan

NextAngles: The Semantic Platform for Compliance,

Tara Raafat, Erin Plettenberg and Nikolaos Trokanas

Lehár 1-3, 11:00	Data Quality, Chair: Philipp Cimiano		
Research	Blockchain Enabled Privacy Audit Logs, Andrew Sutton and Reza Samavi		
In-Use	Lessons Learned in Building Linked Data for the American Art Collaborative, Craig Knoblock, Pedro Szekely, Eleanor Fink, Duane Degler, David Newbury, Robert Sanderson, Kate Blanch, Sara Snyder, Nilay Chheda, Nimesh Jain, Ravi Raju Krishna, Nikhila Begur Sreekanth and Yixiang Yao		
Research	Provenance Information in a Collaborative Knowledge Graph: an Evaluation of Wikidata External References, Alessandro Piscopo, Lucie-Aimée Kaffee, Christopher Phethean and Elena Simperl		
Research	Reliable Granular References to Changing Linked Data, Tobias Kuhn, Egon Willigha- gen, Chris Evelo, Núria Queralt Rosinach, Emilio Centeno and Laura Furlong		

Stolz 1, 11:00	Multilinguality, Chair: Vanessa Lopez	
Research	Encoding Category Correlations into Bilingual Topic Modeling for Cross-Lingual Taxonomy Alignment, Tianxing Wu, Lei Zhang, Guilin Qi, Xuan Cui and Kang Xu	
Research	AMUSE: Multilingual Semantic Parsing for Question Answering over Linked Data, Sherzod Hakimov, Soufian Jebbara and Philipp Cimiano	
Research	<b>Cross-lingual infobox alignment in Wikipedia using Entity-Attribute Factor Graph</b> , Yan Zhang, Thomas Paradis, Lei Hou and Juanzi Li	
Research	Cross-Lingual Entity Alignment via Joint Attribute-Preserving Embedding, Zequn Sun, Wei Hu and Chengkai Li	

Lehár 4, 11:00	Reassoning I, chair: Ernesto Jimenez Ruiz
Research	Entity Comparison in RDF Graphs, Alina Petrova, Evgeny Sherkhonov, Bernardo Cuenca Grau and Ian Horrocks
In-Use	Semantic Rule-Based Equipment Diagnostic, Gulnar Mehdi, Evgeny Kharlamov, Ognjen Savkovic, Guohui Xiao, Elem Guzel Kalayci, Sebastian Brandt, Ian Horrocks, Mikhail Roshchin and Thomas Runkler
Research	Meta Structures in Knowledge Graphs, Valeria Fionda and Giuseppe Pirrò
Resources	Distributed Semantic Analytics using the SANSA Stack, J Lehmann, G Sejdiu, L Bühmann, P Westphal, C Stadler, I Ermilov, S Bin, M Saleem, A Ngonga Ngomo and H Jabeen,

#### **ISWC** 2017 \_\_\_\_

#### MONDAY, October 23

Stolz 2, 14:00	Industry, Manufacturing & Automation, Chair: Peter Haase
	Reasoning to Capture Product Complexity in Automation Industry,
	d Foued and Anees Ul Mehdi
HoloMiracle: Intuitive In-Situ Querying for Industrial Environments, Simon Mayer, Jack Hodges, Dan Yu and Konrad Diwold	
A Semantically Enriched Hypercat-enabled Internet of Things Data Hub, Ilias Tachmazidis, John Davies, Sotiris Batsakis, Alistair Duke, Grigoris Antoniou and Sandra Stincic Clarke	
Entering the Digital Customer Onboarding Era: How the Semantic Web Can Help, Fabien Chevalier and Sébastien Ferré	
Nuance Reasoning Framework, Prateek Jain, Peter Yeh, Ezra Story, Julien Villemure, David Martin and William Jarrold	
FootballWhispers: Transfer Rumour Detection, Neil Ireson and Fabio Ciravegna	

Lehár 1-3, 14:00	Ontology Engineering I, Chair: Vojtech Svatek
In-Use	A Controlled Crowdsourcing Platform for High-Quality Ontology Development and Data Annotation, Yolanda Gil, Daniel Garijo, Varun Ratnakar, Deborah Khider, Julien Emile-Geay and Nicholas McKay
Journal	Crowd-based Ontology Engineering with the uComp Protege Plugin, Gerhard Wohlgenannt, Marta Sabou, Florian Hanika
Research	Computing Authoring Tests from Competency Questions: Experimental Validation, Matt Dennis, Kees Van Deemter, Daniele Dell'Aglio and Jeff Pan
Resources	WIDOCO: A Wizard for Documenting Ontologies, D.I Garijo

Stolz 1, 14:00	Alignment, Chair: Sofia Pinto
Research	<b>Ontolex JeuxDeMots and Its Alignement to the Lexical Linked Open Data Cloud,</b> <i>Théophile Mandon, Mathieu Lafourcade, Anne Laurent, Andon Tchechmedjiev and Konstan-</i> <i>tin Todorov</i>
Journal	Instance Matching Benchmarks in the Era of Linked Data, Evangelia Daskalaki, Giorgos Flouris, Irini Fundulaki, Tzanina Saveta
Research	Alignment Cubes: Towards Interactive Visual Exploration and Evaluation of Multiple Ontology Alignments, Valentina Ivanova, Benjamin Bach, Emmanuel Pietriga and Patrick Lambrix
Journal	Language and Domain Aware Lightweight Ontology Matching, Gábor Bella, Fausto Giunchiglia, Fiona McNeill

Lehár 4, 14:00	Multimodal Linked Data, Chair: Alasdair Gray
Resources	Linked Data Publication of Live Music Archives and Analysis, Sean Bechhofer, Kevin Page, David Weigl, Gyorgy Fazekas and Thomas Wilmering
Resources	The MIDI Linked Data Cloud, Albert Meroño-Peñuela, Rinke Hoekstra, Victor de Boer, Stefan Schlobach, Berit Janssen, Aldo Gangemi, Alo Allik, Reinier de Valk, Peter Bloem, Bas Stringer and Kevin Page
Resources	IMGpedia: a Linked Dataset with Content-based Analysis from the Wikimedia Commons Images, Sebastián Ferrada, Benjamin Bustos and Aidan Hogan
Resources	An Entity Relatedness Test Dataset, José Eduardo Talavera Herrera, Marco Antonio Casanova, Bernardo Pereira Nunes, Luiz André P. Paes Leme and Giseli Rabello Lopes

Stolz 2, 15:50	Publishing & Healthcare, Chair: Shirin Sohrabi	
Supporting Springer Nature Editors by means of Semantic Technologies, Francesco Osborne, Angelo Antonio Salatino, Aliaksandr Birukou, Thiviyan Thanapalasingam and Enrico Motta		
	and disintegration: Managing Springer Nature SciGraph with SHACL and ond, Michele Pasin and Evangelos Theodoridis	
data.world: A Platform for Global-Scale Semantic Publishing, Bryon Jacob, Dave Griffith and Triet Le		
	ology Management for Applications: Contextualized SKOS-XL, her, Martin Romacker and Joachim Rupp	
1 0	tic Technologies in Public Health Documentation, and Frédéric Riondet	
Federated Semantic Data Management for Business Intelligence and Healthcare:		

**Two Case Studies,** Juan F. Sequeda and Wayne Heideman

Lehár 1-3, 15:50	Minute Madness, Chair: Nadeschda Nikitina, Dezhao Song
	Short presentations for all posters and demo.

Stolz 1, 15:50	Ontology Engineering II, Chair: Jean Paul Calbimonte
Journal	Adapting ontologies to best-practice artifacts using transformation patterns: Method, implementation and use cases, Vojtěch Svátek, Marek Dudáš, Ondřej Zamazal
Research	The Efficacy of OWL and DL on User Understanding of Axioms and Their Entailments, Eisa Alharbi, John Howse, Gem Stapleton, Ali Hamie and Anestis Touloumis
In-Use	Sustainable Linked Data generation: the case of DBpedia, Wouter Maroy, Anastasia Dimou, Dimitris Kontokostas, Ben De Meester, Jens Lehmann, Erik Mannens and Sebastian Hellmann
Journal	Using ontologies for verification and validation of workflow-based experiments, Tomasz Miksa and Andreas Raube



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THE 16<sup>TH</sup> INTERNATIONAL SEMANTIC WEB CONFERENCE

# POSTERS

Registered attendees can vote for their favorite poster and demo for the People's Choice awards. For further details on the voting procedure, please visit: https://iswc2017.semanticweb.org/program/posters-and-demos/

P01	Hash Tree Indexing for Fast SPARQL Query in Large Scale RDF Data Management Systems, Wenwen Li, Bingyi Zhang, Guozheng Rao, Renhai Chen and Zhiyong Feng
P02	<b>Ephedra: SPARQL federation over RDF data and services,</b> Andriy Nikolov, Peter Haase, Johannes Trame and Artem Kozlov
P03	Answering Visuo-semantic Queries with IMGpedia, Sebastián Ferrada, Benjamin Bustos and Aidan Hogan
P04	Pattern-based analysis of SPARQL queries from the LSQ dataset, Timo Stegemann and Jürgen Ziegler
P05	Yasper 1.0: Towards an RSP-QL Engine, Riccardo Tommasini and Emanuele Della Valle
P06	An Adaptive Framework for RDF Stream Reasoning, Qiong Li, Xiaowang Zhang, Zhiyong Feng and Guohui Xiao
P07	Predicting the Cost of Online Reasoning on Knowledge Graphs: Some Heuristics, Varsha Ravichandra Mouli, Unmesh Joshi, Ceriel Jacobs and Jacopo Urbani
P08	Incosistency-tolerant forgetting in DL-lite, Peng Xiao, Kewen Wang and Zhe Wang
P09	Integrating Building Information Models with Authoritative Irish Geospatial Informa- tion, Kris McGlinn, Christophe Debruyne, Lorraine McNerney and Declan O'Sullivan
P10	Conversion of Physical Quantity and its Application, Takanori Ugai and Shohei Yamane
P11	<b>QBOAirbase: The European Air Quality Database as an RDF Cube,</b> Luis Galárraga, Kim Ahlstrøm Meyn Mathiassen and Katja Hose
P12	MobileWave: Publishing RDF Streams From SmartPhones, Yehia Abo Sedira, Riccardo Tommasini and Emanuele Della Valle
P13	Type-safe programming with OWL in Semantics4J, Carsten Hartenfels, Martin Leinber- ger, Ralf Lämmel and Steffen Staab
P14	New Facets of Semantic Interoperability: Adding JSON – JSON-LD Transformation Fun- ctionality to the BIG IoT API, Yulia Svetashova, Stefan Schmid and York Sure-Vetter
P15	Representing Dockerfiles in RDF
P16	Frame Embeddings for Event-Based Knowledge Reconciliation
P17	Investigating Stroke-Level Information for Learning Chinese Word Embeddings
P18	Predicting relations of embedded RDF entities by Deep Neural Network
P19	Binary Vector based Propositionalization Strategy for Multivalued Relations in Linked Data, Florian Jakobs, Yordan Terziev and Volker Gruhn
	DBkWik: Towards Knowledge Graph Creation from Thousands of Wikis, Alexandra

P21	Towards Comprehensive Noise Detection in Automatically-Created Knowledge Graphs, Nandana Mihindukulasooriya, Oktie Hassanzadeh, Sarthak Dash and Alfio Gliozzo
P22	Frame Semantic Parsing using Framester Knowledge Graphs, Diego Reforgiato, Meh- wish Alam, Aldo Gangemi and Valentina Presutti
P23	Question Answering Benchmarks for Wikidata, Dennis Diefenbach, Thomas Pellissier Tanon, Kamal Singh and Pierre Maret
P24	How to Revert Question Answering on Knowledge Graphs, Gaurav Maheshwari, Moh- nish Dubey, Priyansh Trivedi and Jens Lehmann
P25	GPS Trajectory Linked Open Data based on Open POI Information- Through an Experiment in ISWC2016, Kouji Kozaki, Teruaki Yokoyama and Yoshiaki Fukami
P26	Towards Automatic Classification of EU Projects for Supporting Open Fiscal Data Analysis, Ondřej Zamazal
P27	Adding Biodiversity Datasets from Argentinian Patagonia to the Web of Data, Marcos Zarate, Germán Alejandro Braun and Pablo Fillottrani
P28	A Change Management Dashboard for the SIEMA Global Malaria Surveillance Infra- structure, Jon Hael Brenas, Mohammad Sadnan Al-Manir, Christopher J. O. Baker and Arash Shaban-Nejad
P29	Bioschemas: From Potato Salad to Protein Annotation, Alasdair Gray, Carole Goble, Rafael Jimenez and Bioschemas Community
P30	UMLS-OWL: an OWL-2 translation of the Unified Medical Language System (UMLS®) Semantic-Network and MetaThesaury for ontology publishing in the Semantic Web, Michel Héon, Joseph Aubut and Sheila Gaudreau
P31	WInte.r - A Web Data Integration Framework, Oliver Lehmberg, Christian Bizer and Alexander Brinkmann
P32	Koral: A Glass Box Profiling System for Individual Components of Distributed RDF Stores
P33	Forecasting Technology Migrations by means of the Technology-Topic Framework
P34	Towards a Pay-as-you-go Methodology for Ontology and Mapping Engineering in Ontology Based Data Access
P35	Ontology Population and Alignment for the Legal Domain: YAGO, Wikipedia and LKIF
P36	On Partitioning for Ontology Alignment
P37	<b>A Framework for Efficient Representative Summarization of RDF Graphs,</b> Sejla Cebiric, Francois Goasdoue and Ioana Manolescu
P38	Enhancing Categorization of Learning Resources in the DAtaset of Joint Educational Entities, Carla Limongelli, Matteo Lombardi, Alessandro Marani and Davide Taibi
P39	Entity Suggestion Ranking via Context Hashing, Rima Türker, Maria Koutraki, Jörg Waite- Ionis and Harald Sack
P40	<b>Reasonable Ontology Templates: APIs for OWL,</b> Martin G. Skjæveland, Henrik Forssell, Johan W. Klüwer, Daniel Lupp, Evgenij Thorstensen and Arild Waaler
P41	<b>Correcting Range Violation Errors in DBpedia,</b> Piyawat Lertvittayakumjorn, Natthawut Kertkeidkachorn and Ryutaro Ichise

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P42	OntoQAV: A Pipeline for Visualising Ontology Quality, Silvio Mc Gurk, Jeremy Debattista and Charlie Abela
P43	Learning Semantic Relatedness from Human Feedback Using Relative Relatedness learning, Thomas Niebler, Martin Becker, Christian Pölitz and Andreas Hotho
P44	Language Agnostic Dictionary Extraction, Alfredo Alba, Anni Coden, Anna Lisa Gentile, Daniel Gruhl, Petar Ristoski and Steve Welch
P45	Annotation based automatic action processing, Elias Kärle and Dieter Fensel
P46	<b>RDF* and SPARQL*: An Alternative Approach to Annotate Statements in RDF,</b> Olaf Hartig

# DEMOS

D01	Ranking, Aggregation, and Reachability in Faceted Search with SemFacet, Evgeny Kharlamov, Luca Giacomelli, Evgeny Sherkhonov, Bernardo Cuenca Grau, Egor Kostylev and Ian Horrocks
D02	<b>Efficient synonym search by semantic linking of multiple data sets,</b> Kenny Knecht, Bérénice Wulbrecht, Filip Pattyn and Hans Constandt
D03	BatWAn: A Binary and Multi-Way Query Plan Analyzer, Mikhail Galkin and Maria-Esther Vidal
D04	Federated SPARQL Query Processing Via CostFed, Alexander Potocki, Muhammad Sa- leem, Tommaso Soru, Olaf Hartig, Martin Voigt and Axel-Cyrille Ngonga Ngomo
D05	BreXearch: Exploring Brexit Data Using Cross-Lingual and Cross-Media Semantic Search, Lei Zhang, Maribel Acosta, Michael Färber, Steffen Thoma and Achim Rettinger
D06	SQID: Towards Ontological Reasoning for Wikidata, Maximilian Marx and Markus Krötzsch
D07	Wolpertinger: A Fixed-Domain Reasoner, Sebastian Rudolph, Lukas Schweizer and Satyadharma Tirtarasa
D08	Querying non-RDF Datasets using Triple Patterns, Benjamin Moreau, Patricia Serrano Alvarado, Emmanuel Desmontils and David Thoumas
D09	A Faceted Search Index for OptiqueVQS, Vidar N. Klungre and Martin Giese
D10	A Tool for Efficiently Processing SPARQL Queries on RDF Quads, Anas Katib, Praveen Rao and Vasil Slavov
D11	Using Word Embeddings for Search in Linked Data with Ontodia, Gerhard Wohlge- nannt, Nikolay Klimov, Dmitry Mouromtsev, Daniil Razdyakonov, Dmitry Pavlov and Yury Emelyanov
D12	Measuring the Performance of Continuous Query Processing Approaches with dief@t and dief@k, Maribel Acosta and Maria Esther Vidal
D13	Exploring semantic datasets with RDF Surveyor, Guillermo Vega-Gorgojo, Martin Giese and Laura Slaughter

D14	<b>Connecting the Dots in Million-Nodes Knowledge Graphs with SemSpect,</b> Thorsten Liebig, Vincent Vialard and Michael Opitz	
D15	Alexa, Ask Wikidata! Voice interaction with knowledge graphs using Amazon Alexa, Peter Haase, Andriy Nikolov, Johannes Trame, Artem Kozlov and Daniel Herzig	
D16	<b>CM-Well: A Data Warehouse for Linked Data,</b> Dan Bennett, Jason Engelbrecht and Dudi Landau	
D17	Science Graph for characterizing the recent scientific landscape, Takahiro Kawamura, Katsutaro Watanabe, Naoya Matsumoto, Shusaku Egami and Mari Jibu	
D18	OKBQA: an open collaboration framework for development of natural language question-answering over knowledge bases, Jin-Dong Kim, Christina Unger, Axel-Cyrille Ngonga Ngomo, Andre Freitas, Young-Gyun Hahm, Jiseong Kim, Gyu-Hyun Choi, Jeong-Uk Kim, Ricardo Usbeck, Myoung-Gu Kang and Key-Sun Choi	
D19	<b>QAestro Framework - Semantic Composition of QA Pipelines,</b> Kuldeep Singh, Ioanna Lytra, Kunwar Abhinav Aditya and Maria Esther Vidal	
D20	Towards the automatic deployment of data in Linked Data Platforms, Mohammad Noorani Bakerally and Antoine Zimmermann	
D21	TAA: A Platform for Triple Accuracy Measuring and Evidence Triples Discovering, Shuangyan Liu, Carlo Allocca, Mathieu D'Aquin and Enrico Motta	
D22	Springer LOD Conference Portal. Demo paper, Aliaksandr Birukou, Volha Bryl, Kai Eckert, Andrey Gromyko and Markus Kaindl	
D23	<b>EGG: A Framework for Generating Evolving RDF Graphs,</b> Karim Alami, Radu Ciucanu and Engelbert Mephu Nguifo	
D24	<b>The Tale of Sansa Spark,</b> Ivan Ermilov, Jens Lehmann, Gezim Sejdiu, Buehmann Lorenz, Patrick Westphal, Claus Stadler, Simon Bin, Nilesh Chakraborty, Henning Petzka, Muham- mad Saleem, Axel-Cyrille Ngonga Ngomo and Hajira Jabeen	
D25	An OLAP Endpoint for RDF Data Analysis Using Analysis Graphs, Median Hilal, Christoph Schütz and Michael Schrefl	
D26	<b>Dagger: Digging for Interesting Aggregates in RDF Graphs</b> , Yanlei Diao, Ioana Manolescu and Shu Shang	
D27	SWEEP: a Streaming Web Service to Deduce Basic Graph Patterns from Triple Pattern Fragments, Emmanuel Desmontils, Patricia Serrano Alvarado and Pascal Molli	
D28	Towards Semantically Aggregating Indian Open Government Data from data.gov.in, Asha Subramanian, Anmol Garg, Omang Poddar and Srinath Srinivasa	
D29	<b>Repairing regular expressions by adding missing words,</b> Thomas Rebele, Katerina Tzompanaki and Fabian M. Suchanek	
D30	<b>COOL-WD: A Completeness Tool for Wikidata,</b> Fariz Darari, Radityo Eko Prasojo, Simon Razniewski and Werner Nutt	
D31	A Vocabulary-Independent Generation Framework for DBpedia and beyond, Ben De Meester, Anastasia Dimou, Wouter Maroy, Dimitris Kontokostas, Ruben Verborgh, Jens Lehmann, Erik Mannens and Sebastian Hellmann	
D32	data.world: A Platform for Global-Scale Semantic Publishing, Bryon Jacob and Jonathan Ortiz	

D33	<b>The smartAPI ecosystem for making web APIs FAIR,</b> Shima Dastgheib, Trish Whetzel, Amrapali Zaveri, Cyrus Afrasiabi, Pedro Assis, Paul Avillach, Kathleen Jagodnik, Gabor Korodi, Marcin Pilarczyk, Jeff de Pons, Stephan Schürer, Raymond Terryn, Ruben Verborgh, Chunlei Wu and Michel Dumontier	
D34	CKR:Live Demo: Representing an Evolving Scenario by Contexts and Exceptions, Loris Bozzato, Luciano Serafini and Gaetano Calabrese	
D35	Smart Book Recommender: A Semantic Recommendation Engine for Editorial Pro- ducts, Francesco Osborne, Thiviyan Thanapalasingam, Angelo Antonio Salatino, Aliaksandr Birukou and Enrico Motta	
D36	DriveSCOVER: A Tourism Recommender System Based on External Driving Factors, Benjamin Klotz, Pasquale Lisena, Raphaël Troncy, Daniel Wilms and Christian Bonnet	
D37	CityMUS: Music Recommendation When Exploring a City, Pasquale Lisena, Lorenzo Canale, Fabio Ellena and Raphaël Troncy	
D38	Big Data Processing and Semantic Web Technologies for Decision Making in Hazardous Substance Dispersion Emergencies, Athanasios Davvetas, Iraklis Klampanos, Spyros Andronopoulos, Giannis Mouchakis, Stasi- nos Konstantopoulos, Andreas Ikonomopoulos and Vangelis Karkaletsis	
D39	CodeOntology: Querying Source Code in a Semantic Framework, Mattia Atzeni and Maurizio Atzori	
D40	Rikamap—An educational application using RDF-formatted learning paths, Makoto Urakawa and Hiroshi Fujisawa	
D41	Semantic Rule-Based Equipment Diagnostic, Gulnar Mehdi, Evgeny Kharlamov, Ognjen Savkovic, Guohui Xiao, Elem Guzel Kalayci, Sebastian Brandt, Ian Horrocks, Mikhail Roshchin and Thomas Runkler	
D42	Providing Reliable Access to Real-Time and Historic Public Transport Data Using Linked Connections, Julián Rojas, David Chaves, Pieter Colpaert, Ruben Verborgh and Erik Mannens	
D43	A Demo: Semantic-Based Re-Engineering of Automation Systems, Aparna Saisree Thu- luva, Kirill Dorofeev, Monika Wenger, Darko Anicic and Sebastian Rudolph	
D44	A Demonstration of Tools for Building Linked Data for the American Art Collabora- tive, Craig Knoblock, Pedro Szekely, Eleanor Fink, Duane Degler, David Newbury, Robert Sanderson, Kate Blanch, Sara Snyder, Nilay Chheda, Nimesh Jain, Ravi Raju Krishna, Nikhila Begur Sreekanth and Yixiang Yao	
D45	A Semantic Search Engine For Investigating Human Trafficking, Mayank Kejriwal, Tho- mas Schellenberg and Pedro Szekely	
D46	Predicting Human Associations with Graph Patterns Learned from Linked Data, Jörn	

D47	<b>RelVis: Benchmarking OpenIE Systems,</b> Rudolf Schneider, Tom Oberhauser, Tobias Klatt, Felix A. Gers and Alexander Löser	
D48	<b>Stressless RSP Benchmarking With RSPLab</b> , Andrea Mauri, Riccardo Tommasini, Emanue- le Della Valle and Marco Brambilla	
D49	Benchmarking RDF Storage Solutions with IGUANA, Felix Conrads, Jens Lehmann, Muhammad Saleem and Axel-Cyrille Ngonga Ngomo	
D50	VOAR 3.0 : a configurable environment for manipulating multiple ontology alignments, Bernardo Severo, Cassia Trojahn and Renata Vieira	
D51	Alignment Cubes: Interactive Visual Exploration and Evaluation of Multiple Ontology Alignments, Valentina Ivanova, Benjamin Bach, Emmanuel Pietriga and Patrick Lambrix	
D52	Clover Quiz: a Mobile Trivia Game Based on DBpedia Data, Guillermo Vega-Gorgojo	
D53	SPARQL-DJ: The MIDI Linked Data Mashup Mixer for Your Next Semantic Party, Albert Meroño-Peñuela, Rick Meerwaldt and Stefan Schlobach	
D54	Interacting with Subterranean Infrastructure Linked Data using Augmented Reality, Dina Sukhobok, Nikolay Nikolov, Till C. Lech, Arnt-Henning Moberg, Roar Frantsvaag, Helene Risti Bergaas and Dumitru Roman	
D55	Linked Data for the Norwegian State of Estate Reporting Service, Ling Shi, Bjorg Elsa Pettersen, Dina Sukhobok, Nikolay Nikolov and Dumitru Roman	
D56	<b>proDataMarket: A Data Marketplace for Monetizing Linked Data,</b> Dumitru Roman, Javier Paniagua, Tatiana Tarasova, Georgi Georgiev, Dina Sukhobok, Nikolay Nikolov and Till C. Lech	
D57	Publishing Socio-Economic Territory Indices as Linked Data and their Visualization for Real Estate Valuation, Dina Sukhobok, Divna Djordjevic, Diego Sanvito, Javier Paniagua and Dumitru Roman	
D58	Linked Data for Common Agriculture Policy: Enabling Semantic Querying over Senti- nel-2 and LiDAR Data, Dina Sukhobok, Hector Sanchez, Jesus Estrada and Dumitru Roman	
D59	DataGraft beta v2: New Features and Capabilities, Nikolay Nikolov, Dina Sukhobok, Stefan Dragnev, Steffen Dalgard, Brian Elvesæter, Bjørn Marius von Zernichow and Dumitru Roman	
D60	<b>RDF Spreadsheet Editor: Get (G)rid of Your RDF Data Entry Problems,</b> Markus Schröder, Christian Jilek, Jörn Hees, Sven Hertling and Andreas Dengel	
D61	The Mastro OBDA plug-in for Protégé, Valerio Santarelli, Giacomo Ronconi, Marco Ruzzi and Domenico Fabio Savo	
Destaur	of the compartic web challenge entrants will also be presented at the DRD session	

Posters of the semantic web challenge entrants will also be presented at the P&D session.

# **Database 12c** Built for the Cloud

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## SESSIONS TUESDAY, OCTOBER 24

	Name	Chair	Room
9:00	Keynote 2: Nada Lavrač		Lehár 1-3
10:00	Coffee Break		
	Knowledge Mining	Mathieu d'Aquin	Lehár 1-3
10:30	Querying: Benchmarks and Tools	Jeff Z. Pan	Stolz 1
	Ontologies and Datasets I	Serena Villata	Stolz 2
11:50	Lunch, Mentoring Lunch		
	Linking	Fabien Gandon	Lehár 1-3
	Description Logics	Pascal Hitzler	Stolz 1
13:30	Semantic Web Challenge	Dan Bennett, Axel Ngonga Ngomo, Heiko Pauleim	Stolz 2
14:50	Coffee Break		
	Querying I	Diego Calvanese	Lehár 1-3
15:30	Learning	Craig Knoblock	Stolz 1
	Biomedical and scientific applications	Daniel Garijo	Stolz 2
17:00	Town Hall		Stolz 1
18:30	Conference Dinner		

Lehár 1-3, 10:30	Knowledge Mining, Chair: Mathieu d'Aquin
Research	Mining Hypotheses from Data in OWL: Advanced Evaluation and Complete Construction, Viachaslau Sazonau and Uli Sattler
Research	Improving Visual Relationship Detection using Semantic Modeling of Scene Descriptions, Stephan Baier, Volker Tresp and Yunpu Ma
Research	Language-agnostic Relation Extraction from Wikipedia Abstracts, Nicolas Heist and Heiko Paulheim
Research	VICKEY: Mining Conditional Keys on RDF datasets, Danai Symeonidou, Fabian M. Suchanek, Luis Galárraga, Nathalie Pernelle and Fatiha Saïs

Stolz 1, 10:30	Querying: Benchmarks and Tools, Chair: Jeff Z. Pan	
In-Use	Automatic Query-centric API for Routine Access to Linked Data, Albert Meroño-Peñuela and Rinke Hoekstra	
Resources	LOD-a-lot: A Queryable Dump of the LOD cloud, Javier D. Fernández, Wouter Beek, Miguel A. Martinez-Prieto and Mario Arias	C
Resources	A Corpus for Complex Question Answering over Knowledge Graphs, Priyansh Trivedi, Gaurav Maheshwari, Mohnish Dubey and Jens Lehmann	۲
Journal	The YASGUI Family of SPARQL Clients, Lauren Rietveld, Rinke Hoekstra	

Stolz 2, 10:30	Ontologies and Datasets I, Chair: Serena Villata	
In-Use	Modeling and Using an Actor Ontology of Second World War Military Units and Personnel, Petri Leskinen, Mikko Koho, Erkki Heino, Minna Tamper, Esko Ikkala, Jouni Tuominen, Eetu Mäkelä and Eero Hyvönen	
Resources	One year of the OpenCitations Corpus - Releasing RDF-based scholarly citation data into the Public Domain, Silvio Peroni, David Shotton and Fabio Vitali	
Resources	<sup>2S</sup> UNDO: the United Nations System Document Ontology, Silvio Peroni, Monica Palmirani and Fabio Vitali	
Journal	Dimensional enrichment of statistical linked open data, Jovan Varga, Alejandro A. Vaisman, Oscar Romero, Lorena Etcheverry, Torben Bach Pedersen, Christian Thomsen	

Lehár 1-3, 13:30	Linking, Chair: Fabien Gandon
Resources	SocialLink: Linking DBpedia Entities to Corresponding Twitter Accounts, Y Nechaev, F Corcoglioniti and C Giuliano
Journal	Semantic Web Machine Reading with FRED, Aldo Gangemi, Valentina Presutti, Diego Reforgiato Recupero, Andrea Giovanni Nuzzolese, Francesco Draicchio, Misael Mongiovi
Journal	From hyperlinks to Semantic Web properties using Open Knowledge Extraction, Valentina Presutti, Andrea Giovanni Nuzzolese, Sergio Consoli, Aldo Gangemi, Diego Reforgiato Recupero
Resources	WebIsALOD: Providing Hypernymy Relations extracted from the Web as Linked Open Data, Sven Hertling and Heiko Paulheim

Stolz 1, 13:30	Description Logics, Chair: Pascal Hitzler	
Research	Tractable Query Answering for Expressive Ontologies and Existential Rules, David Carral, Irina Dragoste and Markus Krötzsch	(
Research	Attributed Description Logics: Ontologies for Knowledge Graphs, Markus Krötzsch, Maximilian Marx, Ana Ozaki and Veronika Thost	(
Research	A Decidable Very Expressive Description Logic for Databases, Alessandro Artale, Enrico Franconi, Rafael Penaloza and Francesco Sportelli	
Research	Zooming in on Ontologies: Minimal Modules and Best Excerpts, Jieying Chen, Michel Ludwig, Yue Ma and Dirk Walther	

Stolz 2, 13:30	Semantic Web Challenge, Chair: Dan Bennett, Axel Ngonga Ngomo, Heiko Pauleim
	The finalists of the two tasks of the Semantic Web Challenge 2017 - attribute prediction and attribute validation in knowledge graphs - present their solutions.

Lehár 1-3, 15:30	Querying I, Chair: Diego Calvanese
Research	<b>Temporal Query Answering in DL-Lite over Inconsistent Data,</b> <i>Camille Bourgaux and Anni-Yasmin Turhan</i>
Research	A Formal Framework for Comparing Linked Data Fragments, Olaf Hartig, Ian Letter and Jorge Pérez
Research	<b>Computing FO-Rewritings in EL in Practice: from Atomic to Conjunctive Queries</b> , <i>Peter Hansen and Carsten Lutz</i>
Research	Strider: A Hybrid Adaptive Distributed RDF Stream Processing Engine, Xiangnan Ren and Olivier Curé

Stolz 1, 15:30	Learning, Chair: Craig Knoblock
Research	Learning Commonalities in SPARQL, Sara El Hassad, Francois Goasdoue and Helene Jaudoin
Journal	DWRank: Learning Concept Ranking for Ontology Search, Anila Sahar Butt, Armin Haller, Lexing Xie
Research Completeness-aware Rule Learning from Knowledge Graphs, Thomas Pellissier Tanon, Daria Stepanova, Simon Razniewski, Paramita Mirza and Gerhard Weikum	
Journal	Knowledge Graph Refinement: A Survey of Approaches and Evaluation, Heiko Paulheim

Stolz 2, 15:30	Biomedical and scientific applications, Chair: Daniel Garijo	
Resources	The CEDAR Workbench: An Ontology-Assisted Environment for Authoring Me- tadata that Describe Scientific Experiments, Rafael S. Gonçalves, Martin J. O'Connor, Marcos Martínez-Romero, Attila L. Egyedi, Debra Wilrett, John Graybeal and Mark A. Musen	
Resources	PDD Graph: Bridging Electronic Medical Records and Biomeidcal Knowledge Graphs via Entity Linking, Meng Wang, Jiaheng Zhang, Jun Liu, Wei Hu, Sen Wang and Wengiang Liu	
Resources	BiOnIC: A Catalog of User Interactions with Biomedical Ontologies, Maulik Kamdar, Simon Walk, Tania Tudorache and Mark Musen	
Resources	<b>The MedRed Ontology for Representing Clinical Data Acquisition Metadata,</b> Jean-Paul Calbimonte, Fabien Dubosson, Roger Hilfiker, Alexandre Cotting and Michael Schumacher	

Spotlight papers (including award nominees)

iswc2017.semanticweb.org

## SESSIONS WEDNESDAY, OCTOBER 25

	Name	Chair	Room
9:00	Keynote 3: Jamie Taylor		Lehár 1-3
10:00	Coffee Break		
	Embeddings and Deep Learning	Abraham Bernstein	Lehár 1-3
10:30	Languages	Olaf Hartig	Stolz 1
	Ontologies and Datasets II	Philippe Cudre-Mauroux	Stolz 2
11:50	Lunch, <i>ISWC OC Lunch</i>		
	Ontology-BasedData Access	Markus Kroetzsch	Lehár 1-3
13:30	Federation	Maria Ester Vidal	Stolz 1
	Reasoning II	Stefan Schlobach	Stolz 2
14:50	Coffee Break		
15:30	Querying II	Daniele Dell'Aglio	Lehár 1-3
15.50	Lightning Talks	Nadeschda Nikitina	Stolz 2
17:00	Closing Session (Awards, ISWC 2018, closing remarks)		Lehár 1-3

Lehár 1-3, 10:30	Embeddings and Deep Learning, Chair: Abraham Bernstein
Research	Semantic Wide and Deep Learning for Detecting Crisis-Information Categories on Social Media, Gregoire Burel, Hassan Saif and Harith Alani
Research	Towards Holistic Concept Representations: Embedding Relational Knowledge, Visual Attributes, and Distributional Word Semantics, Steffen Thoma, Achim Rettinger and Fabian Both
Research	Global RDF Vector Space Embeddings, Michael Cochez, Petar Ristoski, Simone Paolo Ponzetto and Heiko Paulheim
Research	Matching Web Tables with Knowledge Base Entities: From Entity Lookups to Entity Embeddings, Vasilis Efthymiou, Oktie Hassanzadeh, Mariano Rodríguez Muro and Vassilis Christophides

Stolz 1, 10:30	Languages, Chair: Olaf Hartig
Research	<b>LDScript:</b> a Linked Data Script Language, Olivier Corby, Catherine Faron-Zucker and Fabien Gandon
Research	An extension of SPARQL for expressing preferences, Antonis Troumpoukis, Stasinos Konstantopoulos and Angelos Charalambidis
Research	Investigating learnability, user performance, and preferences of the path query language SemwidgQL compared to SPARQL, <i>Timo Stegemann and Jürgen Ziegler</i>
Research	Semantics and Validation of Shapes Schemas for RDF, Iovka Boneva, Jose Emilio Labra Gayo and Eric Prud'Hommeaux

Stolz 2, 10:30	Ontologies and Datasets II, Chair: Philippe Cudre-Mauroux
Resources	Neural Embeddings for Populated Geonames Locations, Mayank Kejriwal and Pedro Szekely
Journal	<b>Towards a Sales Assistant using a Product Knowledge Graph,</b> Haklae Kim and Jungyeon Yang
Resources	Ireland's Authoritative Geospatial Linked Data, Christophe Debruyne, Alan Meehan, Eamonn Clinton, Lorraine McNerney, Atul Nautiyal, Peter Lavin and Declan O'Sullivan
In-Use	Personalizing Actions in Context for Risk Management using Semantic Web Tech- nologies, Jiewen Wu, Freddy Lecue, Christophe Gueret, Jer Hayes, Sara van de Moosdijk, Gemma Gallagher, Peter McCanney and Eugene Eichelberger

Lehár 1-3, 13:30	Ontology-Based Data Access, Chair: Markus Kroetzsch
Research	Cost-Driven Ontology-Based Data Access, Davide Lanti, Guohui Xiao and Diego Calvanese
Resources	Ontology-Based Data Access to Slegge, Dag Hovland, Roman Kontchakov, Martin G. Skjæveland, Arild Waaler and Michael Zakharyaschev
Research	Practical Update Management in Ontology-based Data Access, Giuseppe De Giacomo, Domenico Lembo, Xavier Oriol, Domenico Fabio Savo and Ernest Teniente
Resources	CodeOntology: RDF-ization of Source Code, Mattia Atzeni and Maurizio Atzori

Stolz 1, 13:30	Federation, Chair: Maria Esther Vidal
Research	Challenges of source selection in the WoD, Tobias Grubenmann, Abraham Bernstein, Dmitry Moor and Sven Seuken
In-Use	Realizing an RDF-based Information Model for a Manufacturing Company, Niklas Petersen, Lavdim Halilaj, Irlán Grangel-González, Steffen Lohmann, Christoph Lange and Sören Auer
Research	The Odyssey Approach for Optimizing Federated SPARQL Queries, Gabriela Montoya, Hala Skaf-Molli and Katja Hose
Research	Automated Fine-grained Trust Assessment in Federated Knowledge Bases, Andreas Nolle, Melisachew Wudage Chekol, Christian Meilicke, German Nemiorvskij and Heiner Stuckenschmidt

Stolz 2, 10:30	Reasoning II, Chair: Stefan Schlobach
Research	An Empirical Study on How the Distribution of Ontologies Affects Reasoning on the Web, Hamid Bazoobandi, Jacopo Urbani, Frank Van Harmelen and Henri Bal
Research	Expressive Stream Reasoning with Laser, Hamid R. Bazoobandi, Harald Beck and Jacopo Urbani
Resources	RSPLab, RDF Stream Processing Benchmarking made easy, Riccardo Tommasini, Andrea Mauri, Emanuele Della Valle and Marco Brambilla
Research	Multi-Label Based Learning for Better Multi-Criteria Ranking of Ontology Reasoners, Nourhène Alaya, Myriam Lamolle and Sadok Ben Yahia

( Spotlight papers (including award nominees)

Lehár 1-3, 15:30	Querying II, Chair: Daniele Dell'Aglio
In-Use	An Investigative Search Engine for Social Good, Mayank Kejriwal and Pedro Szekely
Research	Semantic Faceted Search with Aggregation and Recursion, Evgeny Sherkhonov, Bernardo Cuenca Grau, Evgeny Kharlamov and Egor V. Kostylev
Resources	Diefficiency Metrics: Measuring the Continuous Efficiency of Query Processing Approaches, Maribel Acosta, Maria Esther Vidal and York Sure-Vetter
Resources	Iguana: A Generic Framework for Benchmarking the Read-Write Performance of Triple Stores, Felix Conrads, Jens Lehmann, Axel-Cyrille Ngonga Ngomo, Muhammad Saleem and Mohamed Morsey
Stolz 2, 15:30	Lightning Talks, Chair: Nadeschda Nikitina
	This session provides an open forum for short talks on topics that are potentially of interest to the attendees of ISWC such as reports on late breaking research, position statements, announcements of software or datasets, announcements of events related to the conference. For details please refer to page 50.

Lehár 1-3, 17:00	Closing Session
	Awards, ISWC 2018, closing remarks

(E) Spotlight papers (including award nominees)

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#### **Semantic Services**

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#### **Semantic Solutions**

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Classification
Recommendation
Search and Discovery
Metadata Management
Data Publishing
Master Data Refinement and Linking
Knowledge Graph Enrichment

#### Products

Ontotext Platform
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 GraphDB

# JOB FAIR

ISWC 2017 is happy to announce the 1st edition of the ISWC job fair, a brilliant way to bring together job candidates with open positions in both industry and academia. If you want to advance your career, increase your chances of finding the perfect job for you, or find your ideal future employee, make sure to participate in the job fair!

You will find a number of organisations advertising their open positions in various timeslots throughout the main conference. Make sure to check the schedule on the ISWC 2017 Website so you don't miss your chance to talk to your favourite organisations! You can find the job fair at the permanently open coffee corner.

Also, recruiters from various organisations will be wearing an "I'm HIRING" sticker. Feel free to approach them at any time during the conference to learn more about the job opportunities they offer. If, on the other hand, you are a conference attendee looking for a career opportunity, you can pick up an "I'm LOOKING for a job!" sticker from the registration desk, so that you can also be easily contacted. Don't miss the chance to participate!

https://iswc2017.semanticweb.org/ program/job-fair/



... is a **semantic search and data integration** company based in Gent BE and Cambridge US.

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Check out the full **ISWC 2017** conference program in DISQOVER, integrated with 120+ public data sources. Get your free user account at www.DISQOVER.com.

> **Come meet us** at the **Poster & Demo Session** Monday evening 23/09/2017

www.ONTOFORCE.com

## SESSIONS LIGHTNING TALKS

This session provides an open forum for short talks on topics that are potentially of interest to the attendees of ISWC such as reports on late breaking research, position statements, announcements of software or datasets, announcements of events related to the conference. Each presentation is limited to one slide and two minutes time. Presentation slots will be awarded on a first-come, first-served basis. Submissions must be sent in PDF format to iswc.lightningtalks@gmail.com before October 23<sup>rd</sup>, 2017. In addition to your slide, please include in your email the title of your talk and the name and affiliation of the authors.

## SOCIAL EVENTS WELCOME RECEPTION

#### Mayor's Reception @ Vienna City Hall

Sunday, October 22, 2017, 19:00 Address: Vienna City Hall, Lichtenfelsgasse 2, 1010 Vienna

The Office of the Mayor of Vienna is inviting us to a **Mayor's Reception at the Vienna City Hall.** A **cocktail** will be offered in one of Vienna's most beautiful ballrooms.

For details on how to get to the venue, cf. p. 54.



## SOCIAL EVENTS CONFERENCE DINNER

Conference Dinner: Traditional Viennese Dinner @ Heuriger

#### Tuesday, October 24, 2017, 18:30

Address: Fuhrgassl-Huber, Neustift am Walde 68, A-1190 Wien



With 612 ha of vineyards, Vienna is the only capital worldwide maintaining a large viniculture within the city boundaries. The "Wiener Gemischter Satz" is Vienna's showcase wine which will be offered (pure or as "Spritzer", i.e. mixed with sparkling water) at our **ISWC 2017 Traditional Viennese Dinner**.

Besides homegrown white wine and grape juices **you will** enjoy traditional Austrian food and music – that's the whole agenda for the evening! The dinner will take place at a "Heuriger" (traditional wine tavern), located on the outskirts of Vienna. A "Heuriger" is the East Austrian name for taverns where local winemakers serve their new homegrown wines in a pleasant and cheerful atmosphere. ISWC organisation will provide buses to get there and back (for detals, cf. p. 54).

## JAM SESSION

#### Monday, October 23, 2017

starting after the Poster & Demo session (at around 21:30) at WU Library & Learning Center.

The Semantic Web community is crowded with music lovers and several of our fine researchers are also excellent musicians! The Vienna-Jam-Session is a music party for all ISWC participants. Everyone is encouraged to participate either as a performer or a spectator. Share your musical skills with the Semantic Web community and jump on the stage.

Musical instruments will be provided, but you are also welcome to bring your own. There will be time to rehearse before the jam. We have a studio reserved at "Studio 5" (http://rehearsal.at) on 21st October between 19:00-22:00, with standard equipment.

The Vienna-Jam-Session will be hosted straight after the Poster and Demo session. The event is sponsored by data.world (https://data.world).

#### Jam Session Chairs

Aldo Gangemi, Université Paris 13, Paris, France and ISTC-CNR, Rome, Italy Anna Lisa Gentile, IBM Research Almaden, US



Photo of the ISWC2013

# GENERAL INFORMATION

#### **Registration desk**

The registration desk is open from Saturday through Wednesday. See below for the times and location on each day.

#### Workshops and Tutorials

Saturday and Sunday (Day 1 and Day 2): 8:00am - 5:30pm, ground floor in Building TC of Campus WU

#### **Conference Days**

Monday to Wednesday (Day 3 to Day 5): The registration is in the entrance hall of the venue. Opening hours: Monday: 8:00am - 5:15pm Tuesday and Wednesday: 8:00am - 5:00pm

#### Lunch

Saturday and Sunday: Lunch will be held at Mensa, which is located at the ground floor of building D1 which is directly reachable from TC.

Monday to Wednesday: Lunch buffet will be held in the dedicated lunch area at the back section of the conference center.

#### Taking a break

Need a place to relax, have a discussion, or power up your devices?

At WU, there are several study areas which you can find on each floor. They are equipped with power outlets.

At Messe, there is a dedicated relaxation area. right after the entrance which is equipped with cozy furniture and power sockets.

#### Student corner and rehearsal room

Are you a student and/or first-timer at ISWC and want to meet other students? A good place to do so is in the student corner we have set up in the media lounge in the entrance area,

THE 16<sup>™</sup> INTERNATIONAL SEMANTIC WEB CONFERENCE

where you can gather and meet other students. The room also features a screen so you can rehearse your talk. The room is intended as a meeting spot particularly for PhD students, but it is of course open and may be used by everyone.

#### Poster printing

If you need to print any posters, you can do so at the following print shops:

#### dieKopie02

Ausstellungsstraße 53, 1020 Wien +43 1 996 21 26

#### **Printshop Stadioncenter**

Olympiaplatz 2, 1020 Wien +43 1 726 51 29

#### Wireless Internet

Please use the following information to connect via WiFi at both venues:

SSID:	wu-conference
Username	wu0041
password:	SWSA2017

WiFi should also work automatically for you everywhere at WU if you are an eduroam user. Note, however, that eduroam is not available at Messe

#### Twitter

Feed: @iswc2017, Hashtag: #iswc2017

#### Contact

For any conference-related inquiries or questions, please contact the registration desk or iswc2017@ai.wu.ac.at.

In urgent cases please contact Bettina Bauer or Yvonne Poul events@sba-research.org Tel: +43 664 254 03 14 / +43 699 100 41 066

# LOCAL INFORMATION

#### **Getting to the Conference Venues**

Both venues, the TC building at WU Campus (Workshops) and the Congress Center Messe Wien (Main Conference) can easily be reached via public transport. You can also consult our guide on the web site.

From the city center, take subway line U2 towards Seestadt and exit at Krieau for WU Campus (workshops) or Messe-Prater for Messe (main conference). Please refer to the subway map on the last page. Volunteers in red T-Shirts and high-visibility jackets will welcome you at the subway stations on Sat and Mon mornings and direct you towards the venues.

WU Campus Map: https://campus.wu.ac.at/en/

#### Workshops and Tutorials (Sat and Sun):

: Main Conference:

Welthandelsplatz 1 A-1020 Vienna Messe Wien Exhibition Congress Center Messeplatz 1 A-1021 Vienna

#### **Getting to the Social Event Venues**

#### Welcome Reception

The Office of the Mayor of Vienna is inviting us to a **Mayor's Dinner at the Vienna City Hall**. The dinner will take place in one of Vienna's most beautiful ballrooms: the **Festive Hall of the Vienna City Hall**.

To get there, take the metro U2 (purple line) from the conference Venue (station Messe Prater), direction "Karlsplatz". Get out at "Rathaus" and take the exit "Friedrich-Schmidt-Platz". **Please bring your badge, it is your ticket for the dinner and the Vienna City Hall will check those!** Address: Festsaal, Wiener Rathaus (City Hall Vienna), Lichtenfelsgasse 2, Feststiege 1, 1082 Vienna

#### The Conference Dinner

The conference dinner will be held at Fuhrgasslhuber, a traditional wine tavern.

"Man bringe den Spritzwein!" aka "Get me the sparkling wine!" (Quote: Michael Häupl, Mayor of the City of Vienna)

With 612ha of vineyards, Vienna is the only capital in the world maintaining a large-scale viniculture within the city boundaries. The "Wiener Gemischter Satz" is Vienna's showcase wine which will be offered (pure or as "Spritzer", i.e. mixed with sparkling water) at our ISWC 2017 Traditional Viennese Dinner.

#### Agenda:

18.00	Meeting point in front of the Conference Venue entrance
18.10	Departure of the buses (20min drive)
22.00 - 24.00	Buses at regular intervals back to the Conference Venue

#### **Public Transport Tickets**

You can buy a congress ticket (for you and any accompanying person) and choose a validity from a single to up to 5 days. Depending on the number of days, the rate will be slightly reduced. Also note that the 4-day and 5-day passes are heavily discounted and not available elsewhere. Furthermore, you can optionally include the ticket for the direct train from and to Vienna Airport (CAT City Airport Train). Use the following link to claim your discounted tickets: https://shop. wienerlinien.at/index.php/special\_customer/1378/join/nbxOut\$Imn

#### Tickets are also available

- at the Vienna transport Authority's
- ticket offices
- ticket machines
- tobacconists
- online: https://shop.wienerlinien.at/

#### **WIFI in Public Transport**

There are 10 public Wifi Hotspots available in the public transport systems. They are set up near the information offices in the following metro stations:

- Südtiroler Platz/Hauptbahnhof (U1, red line)
- Karlsplatz (U1, red line/U2, purple line/
- U4, green line)
- Stephansplatz (U1, red line/ U3, orange line)
- Praterstern (U1, red line/U2, purple line)
- Schottentor (U2, purple line)
- Westbahnhof (U6, brown line/ U3, orange line)
- Landstraße (U3, orange line/ U4, green line)
- Erdberg (U3, orange line)
- Meidling (U6, brown line)
- Floridsdorf (U6, brown line)

#### **Emergency numbers**

122
133
144
141
112

#### **Opening hours**

Shops are usually open Mon. - Fri. from 9.00 am - 6.30 pm, Sat until 5.00 pm or 6.00 pm; some shopping centres are open until 8.00 pm or 9.00 pm from Mon - Fri. Shops are generally closed on Sundays, with the exception of groceries at the large railway stations and the airport and museum shops.

Drugstores are open Mon.--Fri. from 8.00 am - 6.00 pm, usually without a lunch break, and on Sat. from 8.00 am - 12.00 noon. Outside these hours, a 24-hour drugstore standby service is available throughout the city. Details of the nearest open drugstore are posted at every drugstore or you can call 1455 for information.

#### **Tourist Information**

You can find the main office of Tourist Info Vienna in the city centre at Albertinaplatz/ Maysedergasse, open daily from 9.00 am to 7.00 pm.

#### **Tips from the locals**

Here you can find some hand-picked restaurant tips from the local organizing committee (suggested arbitrarily in a brainstorming session - no guarantees ;)). Watch out, some of these are usually very crowded places, so it's generally a good idea to reserve a table before going there. Another warning: not all of these places are around the corner from the conference venue, but all should be reasonably well reachable with Vienna's efficient public transport system. For more tips: ask the locals!:-)

#### **Restaurants**

- Ramasuri: Nice hip restaurant, rich breakfast, serving regional meat and vegetables. http://ramasuri.at/, Praterstraße 19, 1020 Vienna
- Café Ansari: Nice interior, georgian-oriental food, very delicious, sometimes slow in serving, but definitely worth it. http://www.cafeansari.at/, Praterstraße 15, 1020 Vienna
- Le Cedre offers Lebanese specialities this restaurant is just opposite Messe's congress center, https://www.restaurant-lecedre.at Ausstellungsstraße 51, 1020, Vienna
- L'Osteria serves Italian food, especially huge Pizzas, located on the back of WU's campus, http://losteria.at/restaurant/wien-wirtschaftsuni/, Freudplatz 2, 1020 Vienna.
- Das Campus is a Pub/Restaurant popular and well-attended by both students and faculty on the Campus of WU, just opposite to the building TC, the venue of ISWC's workshops and tutorials. http://dascampus.at/ Welthandelsplatz 1, 1020 Vienna
- Burgers Bar is another typical Burger Restaurant with good reviews close to WU and Messe. https://www.facebook.com/burgersbarvienna, Vorgartenstraße 204, 1020 Vienna
- Figlmüller is probably Vienna's most famous and well known restaurant if you're up for the traditional "Wiener Schnitzel", popular with tourists so probably better to book in advance https://www.figlmueller.at/ Bäckerstrasse 6, 1010 Vienna
- Würstlstand am Hohen Markt: throughout Vienna the Würstelstand (sausage booth) is the traditional fastfood place: they serve various boiled or grilled sausages, typically with mustard ("scharf" or "süss" - spicy or sweet, depending on your taste). As a representative, we picked one in the center of Vienna, at Hoher Markt, 1010 Wien.
- Flatschers: The best steak in town. Steaks starting at € 25 without side dishes. Superprofessional personnel. http://www.flatschers.at/, Kaiserstraße 121, 1070 Vienna
- Brickmakers: Smoked barbecue, Cider and one of the best beer collections in Vienna. Meat is smoked 13 hours before serving, http://www.brickmakers.at/, Zieglergasse 42, 1070 Vienna
- **Toma tu Tiempo:** Spanish tapas just as good (or even better) than in Spain. Good collection of Spanish wines. http://www.tomatutiempo.at/, Zieglergasse 44, 1070 Vienna
- Schweizerhaus: Restaurant where they have the famous "Stelze" (part of the pig's leg). They
  also have drought Budweiser beer. Awesome beer garden. http://www.schweizerhaus.at/,
  Prater 116, 1020 Vienna
- Wratschko: Viennese atmosphere, delicious Viennese food. (no website) Neustiftgasse 51, 1070 Vienna

#### **Cocktail Bars**

- Ebert's Cocktail Bar: In my opinion, the best cocktails in town. They also have a cocktail school where you can learn how to mix awesome cocktails yourself. http://www.eberts.at/, Gumpendorfer Straße 51, 1060 Vienna
- The Sign: Equal in quality, but way better-looking cocktails than in Ebert's. http://www.thesignlounge.at/, Liechtensteinstraße 104-106, 1090 Vienna
- Dino's American Bar: One of the old and classic American cocktail bars in Vienna. Awesome cocktails (try the Whiskey Sour with egg white). http://www.dinos.at/, Salzgries 19, 1010 Vienna
- Barfly's: Another old and classic American cocktail bar. It is inside a hotel. Huge collection of Whiskey and Rum. http://www.castillo.at/en/, Esterzahygasse 33, 1060 Vienna (Hotel Fürst Metternich)
- **Das Loft** is a stylish cocktail bar with an amazing view over Vienna's city on the top floor of Sofitel Vienna Stephansdom https://www.dasloftwien.at/ Praterstrasse 1, 1020 Vienna.

#### **Bars and Pubs**

- Känguruh: Awesome bar that has a collection of about 300 beers (mostly Belgian, German and Austrian). http://www.kaenguruh-pub.at/, Bürgerspitalgasse 20, 1060 Vienna
- Wein & Co: Elegant bar, great opportunity to taste a huge collection of Austrian and international wines. Smart dress code if you go there. Mariahilfer Straße 36, 1070 Vienna https://www.weinco.at/filiale/wien-mariahilfer-strasse-9321
- Hawidere: (Hawidere = an Austrian way of greeting a good friend), extremely cozy and friendly Austrian pub in the 15th district. Good selection of beers, also burgers and other pub food. http://www.hawidere.at/, Ullmannstraße 31, 1150 Vienna

#### Cafés

- Café Josefine: Young, fresh and small café in the 8th district of Vienna. Awesome coffee, breakfast and lite bites. http://cafejosefine.at/, Laudongasse 10, 1080 Vienna
- Café Sperl: Traditional Austrian café with a nice garden. http://www.cafesperl.at/, Gumpendorfer Straße 11, 1060 Vienna

#### Drinking Water?



Many visitors to a foreign city want to know if you can drink the water. Well in Vienna, drinking water comes out of the taps! Vienna has excellent water, in fact most of Vienna's tap water comes straight from springs in the Alps:

Vienna's drinking water originates in the Lower Austrian-Styrian Alps. The spring zone of the First Vienna Spring Water Main comprises the mountains Schneeberg, Rax and Schneealpe, while the spring zone of the Second Vienna Spring Water Main encompasses the Hochschwab Massif (see https://www.wien.gv.at/english/ environment/watersupply/supply/way.html for details)!

Please note also that we do NOT provide plastic cups at the water dispensers, instead please use the re-usable drinking bottle you find in your conference bag for water! You can refill the bottle at water dispensers and drinking fountains in the conference buildings, and in fact, you can refill the bottles at any tap.

## ABOUT VIENNA

Vienna is old, Vienna is new – and so diverse: from the magnificent Baroque buildings to "golden" Art Nouveau or the latest architecture. Vienna is packed with imperial history; at the same time it has exciting contemporary museums, lively eating and a vibrant nightlife, but also many quiet corners to explore.

Few cities can boast the imperial grandeur of Vienna, once the center of the powerful Habsburg monarchy. Lipizzaner stallions performing elegant equine ballet, the angelic tones of the Vienna Boys' Choir drifting across a courtyard and, outrageously opulent palaces.

The Mercer Study has chosen Vienna as the world's number one most livable city for the sixth time in a row in 2015. More than half of the metropolitan area is made up of green spaces. 280 imperial parks and gardens enrich the cityscape. In spring, 400 species of rose bloom in the Volksgarten alone. The nearby recreation areas of Prater, Vienna Woods and Lobau invite visitors to go on walks, day trips, hikes and bicycle tours. Vienna has a total of 2,000 parks.



It's hard to imagine a more livable city than Vienna. This is a metropolis where regulars sit in cozy coffee houses for hours and hours; where "Beisln" (bistro pubs) serve delicious brews, wines and traditional food; where talented chefs are taking the capital in new culinary directions; and where an efficient transport system will ferry you across town from a restaurant to a postdinner drink in no time at all. It's safe, it has lots of bicycle tracks and it even has its own droll sense of humor.

Vienna is a city where postmodernist and contemporary architectural designs contrast and fuse with the monumental and historic. The

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MuseumsQuartier is a perfect example, with modern museum architecture integrated into a public space created around former stables for the Habsburgs' horses.

Twentieth-century designs are little short of inspiring, while contemporary Vienna is constantly being given new and exciting infrastructural designs such as the new Twin City Liners boat landing and the enormous Hauptbahnhof.

Vienna is one the most musical cities in the world. This is partly due to the vast number of great composers and musicians who were born here or lived and worked here. Visiting Austria's capital therefore means experiencing the works of Mozart, Haydn, Schubert, Beethoven, Johann Strauss and many others in venues like the Staatsoper and Musikverein. The music of Bach and Händel continues to be performed in Vienna's historic churches today, and Vienna's Collection of Ancient Musical Instruments, paired with a visit to the Haus der Musik, takes you deeper into the texture of music and how it is created.

Vienna also hosts several international events such as the famous opera ball that takes place every year in February, which is taking place in the Vienna State Opera. The Life Ball, one of the biggest AIDS charity events worldwide also takes place in Vienna and is held in front of the city hall. Each Life Ball is attended by stars, designers and politicians from all over the world such as Bill Clinton, Katy Perry and Charlize Theron and Jean Paul Gaultier. Furthermore Vienna hosted the 60thEurovision Song Contest in May 2015.

There are many events hosted in Vienna every year such as the "Jazz-Fest Wien", the "Wiener Wiesn-Fest" (similar to the Oktoberfest in Munich, but smaller), the Vienna Design Week, the Summer-Night Concert in Schönbrunn and several Christmas markets all around the city.

## ATTRACTIONS IN VIENNA

Walk in the footsteps of the Habsburgs, visit the splendid baroque Schönbrunn or Belvedere Palaces, or stroll along the magnificent Ring Boulevard to take a look at the heart of the former vast Habsburg Empire, the Imperial Palace. Get a sense of the luster and glory of the old empire by visiting St. Stephen's Cathedral, the Spanish Riding School, and the Giant Ferris Wheel at the Prater, as well as the sarcophagi in the Imperial Vault.

- Schönbrunn Palace: Visit Empress Sisi's former summer residence. This baroque complex contains an enchanting park, the Palm House, the Gloriette and the zoo. Spend an entire day at Schönbrunn: visit the show rooms with a "Grand Tour with Audio Guide," admire the splendid Bergl Rooms, and stroll through the "Labyrinth". The Schönbrunn Zoo in Vienna is the oldest existing zoo in the world and has been named Europe's best on three occasions. Each year more than two million visitors come to see the pandas, new-born elephants and many other rare animals.
- **Stephens Cathedral:** St. Stephen's Cathedral is the symbol of Vienna. Construction commenced in the 12th century. Today, it is one of the most important Gothic structures in Austria. Stephen's Cathedral is located directly in the city center, at the religious and geographical heart of Vienna. It's giant Pummerin bell features on television as it rings in the New Year.
- **The Ring Boulevard:** Emperor Franz Joseph officially opened Vienna's Ring Boulevard (Ringstrasse) on May 1, 1865. Vienna celebrated its 150th birthday in 2015 with numerous events and exhibitions. The most beautiful boulevard in the world not only rich in sights, it also has large parks, important monuments, and much more. About 800 buildings line the boulevard today. Additional sights on the Ring Boulevard, aside from the many opulent buildings, include the black-gold lattice fence in front of the Hofburg, the world's longest fence from the age of Historicism, the 5.5-meter-tall Pallas Athene statue in front of the Parliament, and the "Rathausmann", a statue of a man on the tower of the City Hall.
- The Vienna Giant Ferris Wheel and its Square: You may want to visit this landmark of Vienna and enjoy the view of the city from almost 200 feet up. The Giant Ferris Wheel is open year round and is one of the most frequented attractions in the Danube metropolis. Now this entrance to the Prater amusement park is a nostalgic theme world reminiscent of the Prater in the year 1900. At Madame Tussauds, visitors can encounter celebrities from around the world up close: from Arnold Schwarzenegger to Falco, Empress Elisabeth and Gustav Klimt to Robbie Williams and Nicole Kidman.
- Viennese Prater: The Wiener Prater is a large public park in Vienna's 2nd district. When
  people talk about the Wiener Prater they often mean the "Wurstelprater". The so called
  "Wurstelprater" is the oldest amusement park in the world. But the Wiener Prater consists of
  more: the Hauptallee (the main alley), the Krieau and the Praterstadium (Ernst Happel
  Stadium) belong to the area of the "Wiener Prater".
- **The Spanish Riding School:** The Spanish Riding School in only a few steps away from the Sisi Museum and celebrated its 450th anniversary of its first written mention with gala performances on Heldenplatz in 2015.
- **Sisi Museum:** Beautiful and celebrated Empress Elisabeth has long since become a cult figure. The Sisi Museum in the Imperial Apartments of the Imperial Palace compares the myth and the facts. Among the highlights are numerous personal objects once owned by Elisabeth as well as the most famous portraits of the beautiful empress.

## THE CULINARY SIDE OF VIENNA

Vienna is famous for its cuisine, its coffee house culture and the 'Heurige' wine taverns. Vienna boasts one of the world's most famous culinary traditions. A diverse yet delectably harmonious range of dishes reflects the city's mix of nationalities and food cultures through the centuries, and inspires visitors from all over the globe. The most famous Viennese dishes are:

- Wiener Schnitzel (bread-crumbed and fried veal escalope)
- Apfelstrudel (an apple-filled pastry)
- Palatschinken (Viennese crêpes)
- Sachertorte (a special Viennese chocolate cake)
- Kaiserschmarrn (dessert of shredded pancake and stewed fruit)

The Viennese coffee house is known around the globe for its informal pleasantness, as an oasis of "Gemütlichkeit". Traditional cafés entice with a wide variety of coffee drinks, international newspapers and pastry creations. Since 2011, the traditional Viennese coffee house culture has even belonged to the intangible cultural heritage of UNESCO. Modern representatives of the genre enrich the tradition with stylish flair. A close relative of the café is the pastry shop. Their specialty, pies and cakes, are the icing on Vienna's dolce vita in the form of Bundt cake and Sachertorte. The inner city of Vienna hosts many traditional coffee houses, some of them serving coffee since 1847:

- Café Central, the legendary literati café, which counted Arthur Schnitzler, Peter Altenberg and Adolf Loos among its regulars.
- A. Gerstner K&K Hofzuckerbäcker, represents the highest-quality confectionery since 1847.
- Café Imperial, serving fine Viennese coffeehouse cakes since 1873.
- **Café Sacher**, offers the perfect chance to treat yourself to a slice of the legendary Original Sacher-Torte.

Vienna's eateries – ranging from the typical Viennese "Beisl" (tavern) to the luxurious gourmet temple – offer the entire spectrum of regional and international delights to please the palate.

Sources: Vienna Info, Lonely Planet, TripAdvisor

## VIENNA LOCAL MAP



Subway station "Messe-Prater"

- 2 Main conference venue
- 3 Workshops and Tutorials venue
- (4) Subway station "Krieau" (and airport bus)
- 5 Posters and Demo venue

## VIENNA SUBWAY NETWORK MAP



City Centre

- 2 Lines to Vienna Int. Airport (S7 / CAT)
- 3 Rathaus Wien
- Subway station "Messe Prater" WU/Messe Wien

Airtport Bus directly at WU subway station "Krieau" (cf. p.61): Airport Train stations: Wien Praterstern Wien Landstrasse, Wien Hbf

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