The Semantic Web Iswc 2014 13th International Semantic Web Conference Riva Del Garda Italy October 19 23 2014 Proceedings Part Ii Lecture Notes In Computer Science

Proceedings of the International Workshop on Semantic Big Data (SBD 2016)The Semantic Web – ISWC 2014Social Networks and the Semantic WebLinked Data ManagementLinked Data VisualizationLinked DataOntology Engineering with Ontology Design Patterns: Foundations and ApplicationsThe Semantic Web. Latest Advances and New DomainsThe Semantic Web – ISWC 2018Semantic Web Evaluation ChallengeFoundations of Semantic Web TechnologiesProvenanceThe Semantic Web. Latest Advances and New DomainsThe Semantic Web – ISWC 2017Provenance and Annotation of Data and ProcessesSemantic Web for the Working OntologistNatural Language Processing for the Semantic WebThe Semantic Web: ESWC 2019 Satellite EventsDemystifying OWL for the EnterpriseThe Semantic Web - ISWC 2015The Semantic Web - ISWC 2010The Semantic Web – ISWC 2016Exploiting Semantic Web Knowledge Graphs in Data MiningThe Semantic Web - ISWC 2003The Semantic Web {u2013} ISWC 2014Advances in Information RetrievalThe Semantic Web ExplainedThe Semantic Web – ISWC 2018Rules and Rule Markup Languages for the Semantic WebSemantic Web Services, Processes and ApplicationsLinked Data ManagementOntology MatchingThe Semantic Web: ESWC 2012 Satellite EventsJournal on Data Semantics XVSemantic Web-Based SystemsQuerying a Web of Linked DataPopulation ReconstructionLinked DataUncertainty Reasoning for the Semantic Web III

Proceedings of the International Workshop on Semantic Big Data (SBD 2016)

The two-volume set LNCS 11136 and 11137 constitutes the refereed proceedings of the 17th International Semantic Web Conference, ISWC 2018, held in Monterey, USA, in October 2018. The ISWC conference is the premier international forum for the Semantic Web / Linked Data Community. The total of 62 full papers included in this volume was selected from 250 submissions. The conference is organized in three tracks: for the Research Track 39 full papers were selected from 164 submissions. The Resource Track contains 17 full papers, selected from 55 submissions; and the In-Use track features 6 full papers which were selected from 31 submissions to this track.

The Semantic Web – ISWC 2014

Social Networks and the Semantic Web offers valuable information to practitioners developing social-semantic software for the Web. It provides two major case studies. The first case study shows the possibilities of tracking a research community over the Web. It reveals how social network mining from the web plays an important role for obtaining large scale, dynamic network data beyond the possibilities of survey methods. The second case study highlights the role of the

social context in user-generated classifications in content, such as the tagging systems known as folksonomies.

Social Networks and the Semantic Web

After a slow incubation period of nearly 15 years, a large and growing number of organizations now have one or more projects using the Semantic Web stack of technologies. The Web Ontology Language (OWL) is an essential ingredient in this stack, and the need for ontologists is increasing faster than the number and variety of available resources for learning OWL. This is especially true for the primary target audience for this book: modelers who want to build OWL ontologies for practical use in enterprise and government settings. The purpose of this book is to speed up the process of learning and mastering OWL. To that end, the focus is on the 30% of OWL that gets used 90% of the time. Others who may benefit from this book include technically oriented managers, semantic technology developers, undergraduate and post-graduate students, and finally, instructors looking for new ways to explain OWL. The book unfolds in a spiral manner, starting with the core ideas. Each subsequent cycle reinforces and expands on what has been learned in prior cycles and introduces new related ideas. Part 1 is a cook's tour of ontology and OWL, giving an informal overview of what things need to be said to build an ontology, followed by a detailed look at how to say them in OWL. This is illustrated using a healthcare example. Part 1 concludes with an explanation of some foundational ideas about meaning and semantics to prepare the reader for subsequent chapters. Part 2 goes into depth on properties and classes, which are the core of OWL. There are detailed descriptions of the main constructs that you are likely to need in every day modeling, including what inferences are sanctioned. Each is illustrated with real world examples. Part 3 explains and illustrates how to put OWL into practice, using examples in healthcare, collateral, and financial transactions. A small ontology is described for each, along with some key inferences. Key limitations of OWL are identified, along with possible workarounds. The final chapter gives a variety of practical tips and guidelines to send the reader on their way.

Linked Data Management

In recent years, an increasing number of organizations and individuals have contributed to the Semantic Web by publishing data according to the Linked Data principles. In addition, a significant body of Semantic Web research exists that studies various aspects of knowledge representation and automated reasoning over collections of such data. However, a challenge that is crucial for achieving the vision of a Semantic Web – but that has not yet been studied to a comparable extent – is to enable automated software agents to operate directly on decentralized Linked Data that is distributed over the WWW. In particular, fundamental questions related to querying this data on the WWW have received very limited research attention. This book contributes towards filling this gap by studying the foundations of declarative queries over Linked Data on the WWW. Our particular focus in this book are approaches to use the SPARQL query language and execute queries by traversing Linked Data live during the query execution process. More specifically, we first provide formal foundations to adapt SPARQL to the given context. Thereafter, we use an abstract machine model to formally show

computational feasibility and related properties of the resulting types of SPARQL queries. Additionally, we investigate fundamental properties of applying the traversal-based approach to query execution that is tailored to the use case of querying Linked Data directly on the WWW.

Linked Data Visualization

Linked Data (LD) is a well-established standard for publishing and managing structured information on the Web, gathering and bridging together knowledge from different scientific and commercial domains. The development of Linked Data Visualization techniques and tools has been adopted as the established practice for the analysis of this vast amount of information by data scientists, domain experts, business users, and citizens. This book covers a wide spectrum of visualization topics, providing an overview of the recent advances in this area, focusing on techniques, tools, and use cases of visualization and visual analysis of LD. It presents core concepts related to data visualization and LD technologies, techniques employed for data visualization based on the characteristics of data, techniques for Big Data visualization, tools and use cases in the LD context, and, finally, a thorough assessment of the usability of these tools under different scenarios. The purpose of this book is to offer a complete guide to the evolution of LD visualization for interested readers from any background and to empower them to get started with the visual analysis of such data. This book can serve as a course textbook or as a primer for all those interested in LD and data visualization.

Linked Data

The World Wide Web has enabled the creation of a global information space comprising linked documents. As the Web becomes ever more enmeshed with our daily lives, there is a growing desire for direct access to raw data not currently available on the Web or bound up in hypertext documents. Linked Data provides a publishing paradigm in which not only documents, but also data, can be a first class citizen of the Web, thereby enabling the extension of the Web with a global data space based on open standards - the Web of Data. In this Synthesis lecture we provide readers with a detailed technical introduction to Linked Data. We begin by outlining the basic principles of Linked Data, including coverage of relevant aspects of Web architecture. The remainder of the text is based around two main themes - the publication and consumption of Linked Data. Drawing on a practical Linked Data scenario, we provide guidance and best practices on: architectural approaches to publishing Linked Data; choosing URIs and vocabularies to identify and describe resources; deciding what data to return in a description of a resource on the Web; methods and frameworks for automated linking of data sets; and testing and debugging approaches for Linked Data deployments. We give an overview of existing Linked Data applications and then examine the architectures that are used to consume Linked Data from the Web, alongside existing tools and frameworks that enable these. Readers can expect to gain a rich technical understanding of Linked Data fundamentals, as the basis for application development, research or further study. Table of Contents: List of Figures / Introduction / Principles of Linked Data / The Web of Data / Linked Data Design Considerations / Recipes for Publishing Linked Data / Consuming Linked Data / Summary and Outlook

Ontology Engineering with Ontology Design Patterns: Foundations and Applications

This book contains revised and significantly extended versions of selected papers from three workshops on Uncertainty Reasoning for the Semantic Web (URSW), held at the International Semantic Web Conferences (ISWC) in 2011, 2012, and 2013. The 16 papers presented were carefully reviewed and selected from numerous submissions. The papers included in this volume are organized in topical sections on probabilistic and Dempster-Shafer models, fuzzy and possibilistic models, inductive reasoning and machine learning, and hybrid approaches.

The Semantic Web. Latest Advances and New Domains

This book constitutes the refereed proceedings of the 7th International Semantic Web Conference, ISWC 2008, held in Karlsruhe, Germany, during October 26-30, 2008. The volume contains 43 revised full research papers selected from a total of 261 submissions, of which an additional 3 papers were referred to the semantic Web in-use track; 11 papers out of 26 submissions to the semantic Web in-use track, and 7 papers and 12 posters accepted out of 39 submissions to the doctorial consortium. The topics covered in the research track are ontology engineering; data management; software and service engineering; non-standard reasoning with ontologies; semantic retrieval; OWL; ontology alignment; description logics; user interfaces; Web data and knowledge; semantic Web services; semantic social networks; and rules and relatedness. The semantic Web in-use track covers knowledge management; business applications; applications from home to space; and services and infrastructure.

The use of ontologies for data and knowledge organization has become ubiquitous in many data-intensive and knowledge-driven application areas, in science, industry, and the humanities. At the same time, ontology engineering best practices continue to evolve. In particular, modular ontology modeling based on ontology design patterns is establishing itself as an approach for creating versatile and extendable ontologies for data management and integration. This book is the very first comprehensive treatment of Ontology Engineering with Ontology Design Patterns. It contains both advanced and introductory material accessible for readers with only a minimal background in ontology modeling. Some introductory material is written in the style of tutorials, and specific chapters are devoted to examples and to applications. Other chapters convey the state of the art in research regarding ontology design patterns. The editors and the contributing authors include the leading contributors to the development of ontology-design-pattern-driven ontology engineering.

The Semantic Web – ISWC 2018

This book describes efficient and effective techniques for harnessing the power of Linked Data by tackling the various aspects of managing its growing volume: storing, querying, reasoning, provenance management and benchmarking. To this end, Chapter 1 introduces the main concepts of the Semantic Web and Linked Data

and provides a roadmap for the book. Next, Chapter 2 briefly presents the basic concepts underpinning Linked Data technologies that are discussed in the book. Chapter 3 then offers an overview of various techniques and systems for centrally querying RDF datasets, and Chapter 4 outlines various techniques and systems for efficiently querying large RDF datasets in distributed environments. Subsequently, Chapter 5 explores how streaming requirements are addressed in current, state-of-the-art RDF stream data processing. Chapter 6 covers performance and scaling issues of distributed RDF reasoning systems, while Chapter 7 details benchmarks for RDF query engines and instance matching systems. Chapter 8 addresses the provenance management for Linked Data and presents the different provenance models developed. Lastly, Chapter 9 offers a brief summary, highlighting and providing insights into some of the open challenges and research directions. Providing an updated overview of methods, technologies and systems related to Linked Data this book is mainly intended for students and researchers who are interested in the Linked Data domain. It enables students to gain an understanding of the foundations and underpinning technologies and standards for Linked Data, while researchers benefit from the in-depth coverage of the emerging and ongoing advances in Linked Data storing, querying, reasoning, and provenance management systems. Further, it serves as a starting point to tackle the next research challenges in the domain of Linked Data management.

Semantic Web Evaluation Challenge

The two-volume set LNCS 8796 and 8797 constitutes the refereed proceedings of the 13th International Semantic Web Conference, ISWC 2014, held in Riva del Garda, in October 2014. The International Semantic Web Conference is the premier forum for Semantic Web research, where cutting edge scientific results and technological innovations are presented, where problems and solutions are discussed, and where the future of this vision is being developed. It brings together specialists in fields such as artificial intelligence, databases, social networks, distributed computing, Web engineering, information systems, human-computer interaction, natural language processing, and the social sciences. Part 1 (LNCS 8796) contains a total of 38 papers which were presented in the research track. They were carefully reviewed and selected from 180 submissions. Part 2 (LNCS 8797) contains 15 papers from the 'semantic Web in use' track which were accepted from 46 submissions. In addition, it presents 16 contributions of the RBDS track and 6 papers of the doctoral consortium.

Foundations of Semantic Web Technologies

This book constitutes the refereed proceedings of the Second International Semantic Web Conference, ISWC 2003, held at Sanibel Island, Florida, USA in October 2003. The 58 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on foundations; ontological reasoning; semantic Web services; security, trust, and privacy; agents and the semantic Web; information retrieval; multimedia; tools and methodologies; applications; and industrial perspectives.

Provenance

The 47 revised full papers presented together with three invited talks were carefully reviewed and selected from 204 submissions. This program was completed by a demonstration and poster session, in which researchers had the chance to present their latest results and advances in the form of live demos. In addition, the PhD Symposium program included 10 contributions, selected out of 21 submissions. The core tracks of the research conference were complemented with new tracks focusing on linked data; machine learning; mobile web, sensors and semantic streams; natural language processing and information retrieval; reasoning; semantic data management, big data, and scalability; services, APIs, processes and cloud computing; smart cities, urban and geospatial data; trust and privacy; and vocabularies, schemas, and ontologies.

The Semantic Web. Latest Advances and New Domains

The two-volume set LNCS 8796 and 8797 constitutes the refereed proceedings of the 13th International Semantic Web Conference, ISWC 2014, held in Riva del Garda, in October 2014. The International Semantic Web Conference is the premier forum for Semantic Web research, where cutting edge scientific results and technological innovations are presented, where problems and solutions are discussed, and where the future of this vision is being developed. It brings together specialists in fields such as artificial intelligence, databases, social networks, distributed computing, Web engineering, information systems, human-computer interaction, natural language processing, and the social sciences. Part 1 (LNCS 8796) contains a total of 38 papers which were presented in the research track. They were carefully reviewed and selected from 180 submissions. Part 2 (LNCS 8797) contains 15 papers from the 'semantic Web in use' track which were accepted from 46 submissions. In addition, it presents 16 contributions of the RBDS track and 6 papers of the doctoral consortium.

The Semantic Web – ISWC 2017

The World Wide Web is now deeply intertwined with our lives, and has become a catalyst for a data deluge, making vast amounts of data available online, at a click of a button. With Web 2.0, users are no longer passive consumers, but active publishers and curators of data. Hence, from science to food manufacturing, from data journalism to personal well-being, from social media to art, there is a strong interest in provenance, a description of what influenced an artifact, a data set, a document, a blog, or any resource on the Web and beyond. Provenance is a crucial piece of information that can help a consumer make a judgment as to whether something can be trusted. Provenance is no longer seen as a curiosity in art circles, but it is regarded as pragmatically, ethically, and methodologically crucial for our day-to-day data manipulation and curation activities on the Web. Following the recent publication of the PROV standard for provenance on the Web, which the two authors actively help shape in the Provenance Working Group at the World Wide Web Consortium, this Synthesis lecture is a hands-on introduction to PROV aimed at Web and linked data professionals. By means of recipes, illustrations, a website at www.provbook.org, and tools, it guides practitioners through a variety of issues related to provenance: how to generate provenance, publish it on the Web, make it discoverable, and how to utilize it. Equipped with this knowledge, practictioners will be in a position to develop novel applications that can bring

open-ness, trust, and accountability. Table of Contents: Preface / Acknowledgments / Introduction / A Data Journalism Scenario / The PROV Ontology / Provenance Recipes / Validation, Compliance, Quality, Replay / Provenance Management / Conclusion / Bibliography / Authors' Biographies / Index

Provenance and Annotation of Data and Processes

Data Mining and Knowledge Discovery in Databases (KDD) is a research field concerned with deriving higher-level insights from data. The tasks performed in this field are knowledge intensive and can benefit from additional knowledge from various sources, so many approaches have been proposed that combine Semantic Web data with the data mining and knowledge discovery process. This book, Exploiting Semantic Web Knowledge Graphs in Data Mining, aims to show that Semantic Web knowledge graphs are useful for generating valuable data mining features that can be used in various data mining tasks. In Part I, Mining Semantic Web Knowledge Graphs, the author evaluates unsupervised feature generation strategies from types and relations in knowledge graphs used in different data mining tasks such as classification, regression, and outlier detection. Part II, Semantic Web Knowledge Graphs Embeddings, proposes an approach that circumvents the shortcomings introduced with the approaches in Part I, developing an approach that is able to embed complete Semantic Web knowledge graphs in a low dimensional feature space where each entity and relation in the knowledge graph is represented as a numerical vector. Finally, Part III, Applications of Semantic Web Knowledge Graphs, describes a list of applications that exploit Semantic Web knowledge graphs like classification and regression, showing that the approaches developed in Part I and Part II can be used in applications in various domains. The book will be of interest to all those working in the field of data mining and KDD.

Semantic Web for the Working Ontologist

This book constitutes the thoroughly refereed post-conference proceedings of the Satellite Events of the 16th Extended Semantic Web Conference, ESWC 2019, held in Portorož, Slovenia, in June 2019. The volume contains 38 poster and demonstration papers, 2 workshop papers,5 PhD symposium papers, and 3 industry track papers, selected out of a total of 68 submissions. They deal with all areas of semantic web research, semantic technologies on the Web and Linked Data.

Natural Language Processing for the Semantic Web

The two-volume set LNCS 9981 and 9982 constitutes the refereed proceedings of the 15th International Semantic Web Conference, ISWC 2016, which was held in Kobe, Japan, in October 2016. The 75 full papers presented in these proceedings were carefully reviewed and selected from 326 submissions. The International Semantic Web Conference is the premier forum for Semantic Web research, where cutting edge scientific results and technological innovations are presented, where problems and solutions are discussed, and where the future of this vision is being developed. It brings together specialists in fields such as artificial intelligence,

databases, social networks, distributed computing, Web engineering, information systems, human-computer interaction, natural language processing, and the social sciences. The Research Track solicited novel and significant research contributions addressing theoretical, analytical, empirical, and practical aspects of the Semantic Web. The Applications Track solicited submissions exploring the benefits and challenges of applying semantic technologies in concrete, practical applications, in contexts ranging from industry to government and science. The newly introduced Resources Track sought submissions providing a concise and clear description of a resource and its (expected) usage. Traditional resources include ontologies, vocabularies, datasets, benchmarks and replication studies, services and software. Besides more established types of resources, the track solicited submissions of new types of resources such as ontology design patterns, crowdsourcing task designs, workflows, methodologies, and protocols and measures.

The Semantic Web: ESWC 2019 Satellite Events

Ontologies tend to be found everywhere. They are viewed as the silver bullet for many applications, such as database integration, peer-to-peer systems, e-commerce, semantic web services, or social networks. However, in open or evolving systems, such as the semantic web, different parties would, in general, adopt different ontologies. Thus, merely using ontologies, like using XML, does not reduce heterogeneity: it just raises heterogeneity problems to a higher level. Euzenat and Shvaiko's book is devoted to ontology matching as a solution to the semantic heterogeneity problem faced by computer systems. Ontology matching aims at finding correspondences between semantically related entities of different ontologies. These correspondences may stand for equivalence as well as other relations, such as consequence, subsumption, or disjointness, between ontology entities. Many different matching solutions have been proposed so far from various viewpoints, e.g., databases, information systems, and artificial intelligence. The second edition of Ontology Matching has been thoroughly revised and updated to reflect the most recent advances in this quickly developing area, which resulted in more than 150 pages of new content. In particular, the book includes a new chapter dedicated to the methodology for performing ontology matching. It also covers emerging topics, such as data interlinking, ontology partitioning and pruning, context-based matching, matcher tuning, alignment debugging, and user involvement in matching, to mention a few. More than 100 state-of-the-art matching systems and frameworks were reviewed. With Ontology Matching, researchers and practitioners will find a reference book that presents currently available work in a uniform framework. In particular, the work and the techniques presented in this book can be equally applied to database schema matching, catalog integration, XML schema matching and other related problems. The objectives of the book include presenting (i) the state of the art and (ii) the latest research results in ontology matching by providing a systematic and detailed account of matching techniques and matching systems from theoretical, practical and application perspectives.

Demystifying OWL for the Enterprise

With more substantial funding from research organizations and industry, numerous large-scale applications, and recently developed technologies, the Semantic Web is

quickly emerging as a well-recognized and important area of computer science. While Semantic Web technologies are still rapidly evolving, Foundations of Semantic Web Technologies focuses

The Semantic Web - ISWC 2015

Semantic Web for the Working Ontologist: Effective Modeling in RDFS and OWL, Second Edition, discusses the capabilities of Semantic Web modeling languages, such as RDFS (Resource Description Framework Schema) and OWL (Web Ontology Language). Organized into 16 chapters, the book provides examples to illustrate the use of Semantic Web technologies in solving common modeling problems. It uses the life and works of William Shakespeare to demonstrate some of the most basic capabilities of the Semantic Web. The book first provides an overview of the Semantic Web and aspects of the Web. It then discusses semantic modeling and how it can support the development from chaotic information gathering to one characterized by information sharing, cooperation, and collaboration. It also explains the use of RDF to implement the Semantic Web by allowing information to be distributed over the Web, along with the use of SPARQL to access RDF data. Moreover, the reader is introduced to components that make up a Semantic Web deployment and how they fit together, the concept of inferencing in the Semantic Web, and how RDFS differs from other schema languages. Finally, the book considers the use of SKOS (Simple Knowledge Organization System) to manage vocabularies by taking advantage of the inferencing structure of RDFS-Plus. This book is intended for the working ontologist who is trying to create a domain model on the Semantic Web. Updated with the latest developments and advances in Semantic Web technologies for organizing, querying, and processing information, including SPARQL, RDF and RDFS, OWL 2.0, and SKOS Detailed information on the ontologies used in today's key web applications, including ecommerce, social networking, data mining, using government data, and more Even more illustrative examples and case studies that demonstrate what semantic technologies are and how they work together to solve real-world problems

The Semantic Web - ISWC 2010

The Semantic Web – ISWC 2016

The LNCS Journal on Data Semantics is devoted to the presentation of notable work that, in one way or another, addresses research and development on issues related to data semantics. The scope of the journal ranges from theories supporting the formal definition of semantic content to innovative domain-specific applications of semantic knowledge. The journal addresses researchers and advanced practitioners working on the semantic web, interoperability, mobile information services, data warehousing, knowledge representation and reasoning, conceptual database modeling, ontologies, and artificial intelligence. Volume XV results from a rigorous selection among 25 full papers received in response to two calls for contributions issued in 2009 and 2010. In addition, this volume contains a special report on the Ontology Alignment Evaluation Initiative, an event that has been held once a year in the last five years and has attracted considerable attention from the

ontology community. This is the last LNCS transactions volume of the Journal on Data Semantics; the next issue will appear as a regular Springer Journal, published quarterly starting from 2012.

Exploiting Semantic Web Knowledge Graphs in Data Mining

This book introduces core natural language processing (NLP) technologies to non-experts in an easily accessible way, as a series of building blocks that lead the user to understand key technologies, why they are required, and how to integrate them into Semantic Web applications. Natural language processing and Semantic Web technologies have different, but complementary roles in data management. Combining these two technologies enables structured and unstructured data to merge seamlessly. Semantic Web technologies aim to convert unstructured data to meaningful representations, which benefit enormously from the use of NLP technologies, thereby enabling applications such as connecting text to Linked Open Data, connecting texts to each other, semantic searching, information visualization, and modeling of user behavior in online networks. The first half of this book describes the basic NLP processing tools: tokenization, part-of-speech tagging, and morphological analysis, in addition to the main tools required for an information extraction system (named entity recognition and relation extraction) which build on these components. The second half of the book explains how Semantic Web and NLP technologies can enhance each other, for example via semantic annotation, ontology linking, and population. These chapters also discuss sentiment analysis, a key component in making sense of textual data, and the difficulties of performing NLP on social media, as well as some proposed solutions. The book finishes by investigating some applications of these tools, focusing on semantic search and visualization, modeling user behavior, and an outlook on the future.

The Semantic Web - ISWC 2003

The book initially presents the basic concepts related to the Semantic Web, Semantic Web-based applications, Web applications, Ontology, and their qualitative aspects. It then presents the evaluation of the structural quality of modular ontologies and review on metrics for the evaluation of ontology behavior. Further, the book discusses the qualitative evaluation of Semantic Web applications deployed on the Cloud, helping readers understand, maintain, integrate, and reuse these applications. The book offers software engineers in general and ontology engineers in particular a single, valuable guide to help them find the best modularization on the basis of goodness of (re) use. It can also serve as an initial source of information for starting research in this domain.

The Semantic Web {u2013} ISWC 2014

This book constitutes the revised selected papers of the 5th International Provenance and Annotation Workshop, IPAW 2014, held in Cologne, Germany in June 2014. The 14 long papers, 20 short papers and 4 extended abstracts presented were carefully reviewed and selected from 53 submissions. The papers include tools that enable provenance capture from software compilers, from web

publications and from scripts, using existing audit logs and employing both static and dynamic instrumentation.

Advances in Information Retrieval

This book constitutes the refereed proceedings of the 12th Extended Semantic Web Conference, ESWC 2014, held in Anissaras, Portoroz, Slovenia, in May/June 2015. The 43 revised full papers presented together with three invited talks were carefully reviewed and selected from 164 submissions. This program was completed by a demonstration and poster session, in which researchers had the chance to present their latest results and advances in the form of live demos. In addition, the PhD Symposium program included 12 contributions, selected out of 16 submissions. The core tracks of the research conference were complemented with new tracks focusing on linking machine and human computation at web scale (cognition and Semantic Web, Human Computation and Crowdsourcing) beside the following subjects Vocabularies, Schemas, Ontologies, Reasoning, Linked Data, Semantic Web and Web Science, Semantic Data Management, Big data, Scalability, Natural Language Processing and Information Retrieval, Machine Learning, Mobile Web, Internet of Things and Semantic Streams, Services, Web APIs and the Web of Things, Cognition and Semantic Web, Human Computation and Crowdsourcing and In-Use Industrial Track as well.

The Semantic Web Explained

The two-volume set LNCS 10587 + 10588 constitutes the refereed proceedings of the 16th International Semantic Web Conference, ISWC 2017, held in Vienna, Austria, in October 2017. ISWC 2017 is the premier international forum, for the Semantic Web / Linked Data Community. The total of 55 full and 21 short papers presented in this volume were carefully reviewed and selected from 300 submissions. They are organized according to the tracks that were held: Research Track; Resource Track; and In-Use Track.

The Semantic Web – ISWC 2018

The two-volume set LNCS 9366 and 9367 constitutes the refereed proceedings of the 14th International Semantic Web Conference, ISWC 2015, held in Bethlehem, PA, USA, in October 2015. The International Semantic Web Conference is the premier forum for Semantic Web research, where cutting edge scientific results and technological innovations are presented, where problems and solutions are discussed, and where the future of this vision is being developed. It brings together specialists in fields such as artificial intelligence, databases, social networks, distributed computing, Web engineering, information systems, human-computer interaction, natural language processing, and the social sciences. The papers cover topics such as querying with SPARQL; querying linked data; linked data; ontology-based data access; ontology alignment; reasoning; instance matching, entity resolution and topic generation; RDF data dynamics; ontology extraction and generation; knowledge graphs and scientific data publication; ontology instance alignment; knowledge graphs; data processing, IoT, sensors; archiving and publishing scientific data; I oT and sensors; experiments; evaluation; and empirical

studies. Part 1 (LNCS 9366) contains a total of 38 papers which were presented in the research track. They were carefully reviewed and selected from 172 submissions. Part 2 (LNCS 9367) contains 14 papers from the in-use and software track, 8 papers from the datasets and ontologies track, and 7 papers from the empirical studies and experiments track, selected, respectively, from 33, 35, and 23 submissions.

Rules and Rule Markup Languages for the Semantic Web

This book constitutes the refereed proceedings of the Third International Workshop on Rules and Rule Markup Languages for the Semantic Web, RuleML 2004, held in Hiroshima, Japan, in November 2004, together with ISWC 2004. The 11 revised full papers presented together with 2 invited papers and 5 tool presentation abstracts were carefully reviewed and selected from 25 submissions. Among the topics addressed are nonmonotonic rule systems, rule learning for feature extraction, logic reasoners for the Semantic Web, deductive RDF rule languages, description logic programs, defeasible description logics, conceptual logic programs, OWL inferencing, and Semantic Web reasoning.

Semantic Web Services, Processes and Applications

This book constitutes the thoroughly refereed post conference proceedings of the first edition of the Semantic Web Evaluation Challenge, SemWebEval 2014, co-located with the 11th Extended Semantic Web conference, held in Anissaras, Crete, Greece, in May 2014. This book includes the descriptions of all methods and tools that competed at SemWebEval 2014, together with a detailed description of the tasks, evaluation procedures and datasets. The contributions are grouped in three areas: semantic publishing (sempub), concept-level sentiment analysis (ssa), and linked-data enabled recommender systems (recsys).

Linked Data Management

Semantics, Web services, and Web processes promise better re-use, universal interoperability and integration. Semantics has been recognized as the primary tool to address the challenges of a broad spectrum of heterogeneity and for improving automation through machine understandable descriptions. Semantic Web Services, Processes and Applications brings contributions from researchers who study, explore and understand the semantic enabling of all phases of semantic Web processes. This encompasses design, annotation, discovery, choreography and composition. Also this book presents fundamental capabilities and techniques associated with ontological modeling or services, annotation, matching and mapping, and reasoning. This is complemented by discussion of applications in e-Government and bioinformatics. Special bulk rates are available for course adoption through Publishing Editor.

Ontology Matching

The two-volume set LNCS 11136 and 11137 constitutes the refereed proceedings of the 17th International Semantic Web Conference, ISWC 2018, held in Monterey,

USA, in October 2018. The ISWC conference is the premier international forum for the Semantic Web / Linked Data Community. The total of 62 full papers included in this volume was selected from 250 submissions. The conference is organized in three tracks: for the Research Track 39 full papers were selected from 164 submissions. The Resource Track contains 17 full papers, selected from 55 submissions; and the In-Use track features 6 full papers which were selected from 31 submissions to this track.Paper 'The SPAR Ontologies' is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.

The Semantic Web: ESWC 2012 Satellite Events

Journal on Data Semantics XV

Linked Data Management presents techniques for querying and managing Linked Data that is available on today's Web. The book shows how the abundance of Linked Data can serve as fertile ground for research and commercial applications. The text focuses on aspects of managing large-scale collections of Linked Data. It offers a detailed introduction to Linked Data and related standards, including the main principles distinguishing Linked Data from standard database technology. Chapters also describe how to generate links between datasets and explain the overall architecture of data integration systems based on Linked Data. A large part of the text is devoted to query processing in different setups. After presenting methods to publish relational data as Linked Data and efficient centralized processing, the book explores lookup-based, distributed, and parallel solutions. It then addresses advanced topics, such as reasoning, and discusses work related to read-write Linked Data for system interoperation. Despite the publication of many papers since Tim Berners-Lee developed the Linked Data principles in 2006, the field lacks a comprehensive, unified overview of the state of the art. Suitable for both researchers and practitioners, this book provides a thorough, consolidated account of the new data publishing and data integration paradigm. While the book covers query processing extensively, the Linked Data abstraction furnishes more than a mechanism for collecting, integrating, and querying data from the open Web—the Linked Data technology stack also allows for controlled, sophisticated applications deployed in an enterprise environment.

Semantic Web-Based Systems

This two-volume set LNCS 11437 and 11438 constitutes the refereed proceedings of the 41st European Conference on IR Research, ECIR 2019, held in Cologne, Germany, in April 2019. The 48 full papers presented together with 2 keynote papers, 44 short papers, 8 demonstration papers, 8 invited CLEF papers, 11 doctoral consortium papers, 4 workshop papers, and 4 tutorials were carefully reviewed and selected from 365 submissions. They were organized in topical sections named: Modeling Relations; Classification and Search; Recommender Systems; Graphs; Query Analytics; Representation; Reproducibility (Systems); Reproducibility (Application); Neural IR; Cross Lingual IR; QA and Conversational Search; Topic Modeling; Metrics; Image IR; Short Papers; Demonstration Papers;

CLEF Organizers Lab Track; Doctoral Consortium Papers; Workshops; and Tutorials.

Querying a Web of Linked Data

This book constitutes the thoroughly refereed post-proceedings of the satellite events of the 9th International Conference on the Semantic Web, ESWC 2012, held in Heraklion, Crete, Greece, in May 2012. This volume contains 49 full papers and 13 short papers describing the posters and demonstrations. (SUGGESTION/ HELP needed).

Population Reconstruction

"The Semantic Web is a new area of research and development in the field of computer science that aims to make it easier for computers to process the huge amount of information on the Web, and indeed other large databases, by enabling them not only to read, but also to understand the information. Based on successful courses taught by the authors, and liberally sprinkled with examples and exercises, this comprehensive textbook describes not only the theoretical issues underlying the Semantic Web, but alsoalgorithms, optimisation ideas and implementation details. The book will therefore be valuable to practitioners as well as students, indeed to anyone who is interested in Internet technology, knowledge engineering or description logics. Supplementary materials available online include the source code of program examples and solutions to selected exercises"--

Linked Data

This book addresses the problems that are encountered, and solutions that have been proposed, when we aim to identify people and to reconstruct populations under conditions where information is scarce, ambiguous, fuzzy and sometimes erroneous. The process from handwritten registers to a reconstructed digitized population consists of three major phases, reflected in the three main sections of this book. The first phase involves transcribing and digitizing the data while structuring the information in a meaningful and efficient way. In the second phase, records that refer to the same person or group of persons are identified by a process of linkage. In the third and final phase, the information on an individual is combined into a reconstruction of their life course. The studies and examples in this book originate from a range of countries, each with its own cultural and administrative characteristics, and from medieval charters through historical censuses and vital registration, to the modern issue of privacy preservation. Despite the diverse places and times addressed, they all share the study of fundamental issues when it comes to model reasoning for population reconstruction and the possibilities and limitations of information technology to support this process. It is thus not a single discipline that is involved in such an endeavor. Historians, social scientists, and linguists represent the humanities through their knowledge of the complexity of the past, the limitations of sources, and the possible interpretations of information. The availability of big data from digitized archives and the need for complex analyses to identify individuals calls for the involvement of computer scientists. With contributions from all these fields, often in direct cooperation, this book is at the heart of the digital humanities, and

will hopefully offer a source of inspiration for future investigations.

Uncertainty Reasoning for the Semantic Web III

Linked Data Management presents techniques for querying and managing Linked Data that is available on today's Web. The book shows how the abundance of Linked Data can serve as fertile ground for research and commercial applications. The text focuses on aspects of managing large-scale collections of Linked Data. It offers a detailed introduction to Linked Data and related standards, including the main principles distinguishing Linked Data from standard database technology. Chapters also describe how to generate links between datasets and explain the overall architecture of data integration systems based on Linked Data. A large part of the text is devoted to query processing in different setups. After presenting methods to publish relational data as Linked Data and efficient centralized processing, the book explores lookup-based, distributed, and parallel solutions. It then addresses advanced topics, such as reasoning, and discusses work related to read-write Linked Data for system interoperation. Despite the publication of many papers since Tim Berners-Lee developed the Linked Data principles in 2006, the field lacks a comprehensive, unified overview of the state of the art. Suitable for both researchers and practitioners, this book provides a thorough, consolidated account of the new data publishing and data integration paradigm. While the book covers query processing extensively, the Linked Data abstraction furnishes more than a mechanism for collecting, integrating, and querying data from the open Web—the Linked Data technology stack also allows for controlled, sophisticated applications deployed in an enterprise environment.