

Oxford Semantic Technologies

This book includes a selection of thoroughly refereed papers accepted at the Satellite Events of the 17th International Semantic Web Conference, ISWC 2018, held in Monterey, CA in October 2018. The key areas addressed by these events include the core Semantic Web technologies such as knowledge graphs and scalable knowledge base systems, ontology design and modelling, semantic deep learning and statistics. Furthermore, several novel applications of semantic technologies to the topics of Internet of Things (IoT), healthcare, social media and social good are discussed. Finally, important topics at the interface of the Semantic Web technologies and their human users are addressed, including visualization and interaction paradigms for Web Data as well as crowdsourcing applications.

This handbook addresses words in all their multifarious aspects and brings together scholars from every relevant discipline to do so. The many subjects covered include word frequencies; sounds and sound symbolism; the structure of words; taboo words; lexical borrowing; words in dictionaries and thesauri; word origins and change; place and personal names; nicknames; taxonomies; word acquisition and bilingualism; words in the mind; word disorders; and word games, puns, and puzzles. Words are the most basic of all linguistic units, the aspect of language of which everyone is likely to be most conscious. A 'new' word that makes it into the OED is prime news; when baby says its first word its parents reckon it has started to speak; knowing a language is often taken to mean knowing its words; and languages are seen to be related by the similarities between their words. Up to the twentieth century linguistic description was mainly an account of words and all the current subdivisions of linguistics have something to say about them. A notable feature of human languages is the sheer vastness of their word inventories, and scholars and writers have sometimes deliberately increased the richness of their languages by coining or importing new items into their word-hoards. The book presents scholarship and research in a manner that meets the interests of students and professionals and satisfies the curiosity of the educated reader.

This book constitutes the refereed proceedings of the 10th International Conference on Web Reasoning and Rule Systems, RR 2016, held in Aberdeen, Scotland, UK, in September 2016. The 10 full papers and 3 technical communications presented were carefully reviewed and selected from 17 submissions. Extensions and adaptations of classical rule-based languages have found their application in a range of areas, such as ontologies for the semantic web; querying web data; semantic data management; common-sense reasoning on the web

In the mid 1990s, Tim Berners-Lee had the idea of developing the World Wide Web into a „Semantic Web“, a web of information that could be interpreted by machines in order to allow the automatic exploitation of data, which until then had to be done by humans manually. One of the first people to research topics related to the Semantic Web was Professor Rudi Studer. From the beginning, Rudi drove projects like ONTOBROKER and On-to-Knowledge, which later resulted in W3C standards such as RDF and OWL. By the late 1990s, Rudi had established a research group at the University of Karlsruhe, which later became the

nucleus and breeding ground for Semantic Web research, and many of today's well-known research groups were either founded by his disciples or benefited from close cooperation with this think tank. In this book, published in celebration of Rudi's 60th birthday, many of his colleagues look back on the main research results achieved during the last 20 years. Under the editorship of Dieter Fensel, once one of Rudi's early PhD students, an impressive list of contributors and contributions has been collected, covering areas like Knowledge Management, Ontology Engineering, Service Management, and Semantic Search. Overall, this book provides an excellent overview of the state of the art in Semantic Web research, by combining historical roots with the latest results, which may finally make the dream of a "Web of knowledge, software and services" come true.

The two volumes LNCS 10249 and 10250 constitute the refereed proceedings of the 14th International Semantic Web Conference, ESWC 2017, held in Portorož, Slovenia. The 51 revised full papers presented were carefully reviewed and selected from 183 submissions. In addition, 10 PhD papers are included, selected out of 14 submissions. The papers are organized in the following tracks: semantic data management, big data, and scalability; linked data; machine learning; mobile web, sensors, and semantic streams; natural language processing and information retrieval; vocabularies, schemas, and ontologies; reasoning; social web and web science; semantic web and transparency; in use and industrial track; and PhD symposium. The paper 'Linked Data Notifications: A Resource-Centric Communication Protocol' is published open access under a CC BY 4.0 license at link.springer.com.

This volume contains the Proceedings of The Third International Conference on Software, Services & Semantic Technologies (S3T) held in Bourgas, Bulgaria on September 1-3, 2011. It is the third S3T conference in a series of annually organized events supported by the F7 EU SISTER Project and hosted by Sofia University. The conference is aimed at providing a forum for researchers and practitioners to discuss the latest developments in the area of Software, Services and Intelligent Content and Semantics. The conference sessions and the contents of this volume are structured according to the conference track themes: Intelligent Content and Semantics (10 papers), Knowledge Management, Business Intelligence and Innovation (4 papers), Software and Services (6 papers), and Technology Enhanced Learning (9 papers). The papers published in this volume cover a wide range of topics related to the track themes. Particular emphasis is placed on applying intelligent semantic technologies in educational and professional environments with papers in the areas of Ontologies and Semantic Web Technologies, Web Data and Knowledge, Social Networks Analysis, Information Extraction and Visualisation, Semantic Search and Retrieval, E-learning, and User Modelling and Personalization.

"The book provides a sound theoretical foundation for the application of semantic methods, concepts, technologies for practical problem solving offering original research on advanced concepts, methods, algorithms, technologies, and applications of semantic computing in real-world situations"--

"This book discusses the new technologies of semantic Web, transforming the way we use information and knowledge"--Provided by publisher.

This volume contains the lecture notes of the 9th Reasoning Web Summer School 2013, held in Mannheim, Germany, in July/August 2013. The 2013 summer school program covered diverse aspects of Web reasoning, ranging from scalable lightweight formalisms such as RDF to more expressive ontology languages based on description logics. It also featured foundational reasoning techniques used in answer set programming and ontology-based data access as well as emerging topics like geo-spatial information handling and reasoning-driven information extraction and integration.

The Semantic Web aims at enriching the existing Web with meta-data and processing methods so as to provide web-based systems with advanced capabilities, in particular with context awareness and decision support. The objective of this book is to provide a coherent introduction to semantic web methods and research issues with a particular emphasis on reasoning. The 7th reasoning web Summer School, held in August 2011, focused on the central topic of applications of reasoning for the emerging “Web of Data”. The 12 chapters in the present book provide excellent educational material as well as a number of references for further reading. The book not only addresses students working in the area, but also those seeking an entry point to various topics related to reasoning over Web data.

The two volume set LNCS 12506 and 12507 constitutes the proceedings of the 19th International Semantic Web Conference, ISWC 2020, which was planned to take place in Athens, Greece, during November 2-6, 2020. The conference changed to a virtual format due to the COVID-19 pandemic. The papers included in this volume deal with the latest advances in fundamental research, innovative technology, and applications of the Semantic Web, linked data, knowledge graphs, and knowledge processing on the Web. They were carefully reviewed and selected for inclusion in the proceedings as follows: Part I: Features 38 papers from the research track which were accepted from 170 submissions; Part II: Includes 22 papers from the resources track which were accepted from 71 submissions; and 21 papers in the in-use track, which had a total of 46 submissions.

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 author looks at the construction of the Semantic Web, which enables computers to automatically and independently consume Web-based information.

Idea Management Systems are web applications that implement the notion of open innovation though crowdsourcing. Typically, organizations

use those kind of systems to connect to large communities in order to gather ideas for improvement of products or services. Originating from simple suggestion boxes, Idea Management Systems advanced beyond collecting ideas and aspire to be a knowledge management solution capable to select best ideas via collaborative as well as expert assessment methods. In practice, however, the contemporary systems still face a number of problems usually related to information overflow and recognizing questionable quality of submissions with reasonable time and effort allocation. This thesis focuses on idea assessment problem area and contributes a number of solutions that allow to filter, compare and evaluate ideas submitted into an Idea Management System. With respect to Idea Management System interoperability the thesis proposes theoretical model of Idea Life Cycle and formalizes it as the Gi2MO ontology which enables to go beyond the boundaries of a single system to compare and assess innovation in an organization wide or market wide context. Furthermore, based on the ontology, the thesis builds a number of solutions for improving idea assessment via: community opinion analysis (MARL), annotation of idea characteristics (Gi2MO Types) and study of idea relationships (Gi2MO Links). The main achievements of the thesis are: application of theoretical innovation models for practice of Idea Management to successfully recognize the differentiation between communities, opinion metrics and their recognition as a new tool for idea assessment, discovery of new relationship types between ideas and their impact on idea clustering. Finally, the thesis outcome is establishment of Gi2MO Project that serves as an incubator for Idea Management solutions and mature open-source software alternatives for the widely available commercial suites. From the academic point of view the project delivers resources to undertake experiments in the Idea Management Systems area and managed to become a forum that gathered a number of academic and industrial partners.

The rapid advancement of semantic web technologies, along with the fact that they are at various levels of maturity, has left many practitioners confused about the current state of these technologies. Focusing on the most mature technologies, Applied Semantic Web Technologies integrates theory with case studies to illustrate the history, current state, and future direction of the semantic web. It maintains an emphasis on real-world applications and examines the technical and practical issues related to the use of semantic technologies in intelligent information management. The book starts with an introduction to the fundamentals—reviewing ontology basics, ontology languages, and research related to ontology alignment, mediation, and mapping. Next, it covers ontology engineering issues and presents a collaborative ontology engineering tool that is an extension of the Semantic MediaWiki. Unveiling a novel approach to data and knowledge engineering, the text: Introduces cutting-edge taxonomy-aware algorithms Examines semantics-based service composition in transport logistics Offers ontology alignment tools that use information visualization techniques Explains how to enrich the representation of entity semantics in an ontology Addresses challenges in tackling the content creation bottleneck Using case studies, the book provides authoritative insights and highlights valuable lessons learned by the authors—information systems veterans with decades of experience. They explain how to create social ontologies and present examples of the application of semantic technologies in building automation, logistics, ontology-driven business process intelligence, decision making, and energy efficiency in smart homes.

This book provides a coherent introduction to semantic web methods and research issues with a particular emphasis on reasoning. It is based on a collection of six thoroughly revised tutorial papers culled from lectures given by leading researchers.

This book constitutes the refereed proceedings of the 10th International Conference on Open Semantic Technologies for Intelligent System, OSTIS 2020, held in Minsk, Belarus, in February 2020. The 14 revised full papers and 2 short papers

were carefully reviewed and selected from 62 submissions. The papers mainly focus on standardization of intelligent systems and cover wide research fields including knowledge representation and reasoning, semantic networks, natural language processing, temporal reasoning, probabilistic reasoning, multi-agent systems, intelligent agents.

Internet Studies has been one of the most dynamic and rapidly expanding interdisciplinary fields to emerge over the last decade. The Oxford Handbook of Internet Studies has been designed to provide a valuable resource for academics and students in this area, bringing together leading scholarly perspectives on how the Internet has been studied and how the research agenda should be pursued in the future. The Handbook aims to focus on Internet Studies as an emerging field, each chapter seeking to provide a synthesis and critical assessment of the research in a particular area. Topics covered include social perspectives on the technology of the Internet, its role in everyday life and work, implications for communication, power, and influence, and the governance and regulation of the Internet. The Handbook is a landmark in this new interdisciplinary field, not only helping to strengthen research on the key questions, but also shape research, policy, and practice across many disciplines that are finding the Internet and its political, economic, cultural, and other societal implications increasingly central to their own key areas of inquiry.

This book constitutes the refereed proceedings of the 10th Metadata and Semantics Research Conference, MTSR 2016, held in Göttingen, Germany, in November 2016. The 26 full papers and 6 short papers presented were carefully reviewed and selected from 67 submissions. The papers are organized in several sessions and tracks: Digital Libraries, Information Retrieval, Linked and Social Data, Metadata and Semantics for Open Repositories, Research Information Systems and Data Infrastructures, Metadata and Semantics for Agriculture, Food and Environment, Metadata and Semantics for Cultural Collections and Applications, European and National Projects.

Content Management Systems (CMSs) are used in almost every industry by millions of end-user organizations. In contrast to the 90s, they are no longer used as isolated applications in one organization but they support critical core operations in business ecosystems. Content management today is more interactive and more integrative: interactive because end-users are increasingly content creators themselves and integrative because content elements can be embedded into various other applications. The authors of this book investigate how Semantic Technologies can increase interactivity and integration capabilities of CMSs and discuss their business value to millions of end-user organizations. This book has therefore the objective, to reflect existing applications as well as to discuss and present new applications for CMSs that use Semantic Technologies. An evaluation of 27 CMSs concludes this book and provides a basis for IT executives that plan to adopt or replace a CMS in the near future.

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Today's work is characterized by a high degree of innovation and thus demands a thorough overview of relevant knowledge in the world and in organizations. Semantic Work Environments support the work of the user by collecting knowledge about needs and providing processed and improved knowledge to be integrated into work. Emerging Technologies for Semantic Work Environments: Techniques, Methods, and Applications describes an overview of the emerging field of Semantic Work Environments by combining various research studies and underlining the similarities between different processes, issues and approaches in order to provide the reader with techniques, methods, and applications of the study.

The study of expertise weaves its way through various communities of practice, across disciplines, and over millennia. To date, the study of expertise has been primarily concerned with how human beings perform at a superior level in complex environments and sociotechnical systems, and at the highest levels of proficiency. However, more recent research has continued the search for better descriptions, and causal mechanisms that explain the complexities of expertise in context, with a view to translating this understanding into useful predictions and interventions capable of improving the performance of human systems as efficiently as possible. The Oxford Handbook of Expertise provides a comprehensive picture of the field of Expertise Studies. It offers both traditional and contemporary perspectives, and importantly, a multidiscipline-multimethod view of the science and engineering research on expertise. The book presents different perspectives, theories, and methods of conducting expertise research, all of which have had an impact in helping us better understand expertise across a broad range of domains. The Handbook also describes how researchers and practitioners have addressed practical problems and societal challenges. Throughout, the authors have sought to demonstrate the heterogeneity of approaches and conceptions of expertise, to place current views of expertise in context, to show how these views can be used to address current issues, and to examine ways to advance the study of expertise. The Oxford Handbook of Expertise is an essential resource both to those wanting to gain an up-to-date knowledge of the science of expertise and those wishing to study experts.

A lively introduction to methods for articulating the meanings of words and sentences, and revealing connections between language and culture. It shows that the study of meaning can be rigorous, insightful, and exciting.

This book constitutes the thoroughly refereed proceedings of the 7th Joint International Semantic Technology Conference, JIST 2017, held in Goldcoast, QLD, Australia, in November 2017. The 19 full papers and 4 short papers presented were carefully reviewed and selected from 37 submissions. They present applications of semantic technologies, theoretical results, new algorithms and tools to facilitate the adoption of semantic technologies and are organized in topical sections on ontology and data management; ontology reasoning; linked data and query; information retrieval and knowledge discovery; knowledge graphs; and applications of semantic technologies.

This book constitutes the thoroughly refereed proceedings of the 6th Joint International Semantic Technology Conference, JIST 2016, held in

Singapore, Singapore, in November 2016. The main topics of JIST 2016 include among others ontology and reasoning; linked data; knowledge graph. The JIST 2016 conference consists of two keynotes, a main technical track, including (full and short papers) from the research and the in-use tracks, a Poster and Demo session, a workshop and two tutorials. The 16 full and 8 short papers presented were carefully reviewed and selected from 34 submissions. The papers cover the following topics: ontology and data management; linked data; information retrieval and knowledge discovery; RDF and query; knowledge graph; application of semantic technologies.

This volume contains the lecture notes of the 8th Reasoning Web Summer School 2012, held in Vienna, Austria, in September 2012, in the form of worked out tutorial papers on the various topics that have been covered in that school. The 2012 summer school program had been put together under the general leitmotif of advanced query answering topics for the Web. The idea was to address on the one hand foundations and computational aspects of query answering, in formalisms, methods and technology, and on the other hand to also spotlight some rising or emerging application fields relating to the Semantic Web in which query answering plays a role, and which by their nature also pose new challenges and problems for this task; linked stream processing, geospatial data, semantic wikis, and argumentation on the web fall in this category.

This book constitutes the thoroughly refereed post-conference proceedings of the Satellite Events of the 14th European Conference on the Semantic Web, ESWC 2017, held in Portoroz, Slovenia, in May/June 2017. The volume contains 8 poster and 24 demonstration papers, selected from 105 submissions. Additionally, this book includes a selection of 13 best workshop papers. The papers cover various aspects of the semantic web. The chapter 'Scholia, Scientometrics and Wikidata' is available open access under a CC BY 4.0 license via link.springer.com.

The two-volume set LNCS 7649 + 7650 constitutes the refereed proceedings of the 11th International Semantic Web Conference, ISWC 2012, held in Boston, MA, USA, in November 2012. 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. Volume 1 contains a total of 41 papers which were presented in the research track. They were carefully reviewed and selected from 186 submissions. Volume 2 contains 17 papers from the in-use track which were accepted from 77 submissions. In addition, it presents 8 contributions to the evaluations and experiments track and 7 long papers and 8 short papers of the doctoral consortium.

Implement state-of-the-art semantic search engine optimization techniques to meet your client's communication, and ROI goals. Armed with a sound understanding of the semantic technologies and practical case studies that demonstrate implementations you are ready to introduce your clients to this major shift in search technology, keeping them within the information loop that will continue to attract their audience to their sites. * Detailed real-world examples of companies or organizations who have implemented these techniques and reaped the benefits. * GUI screen grabs, color images and code snippets illustrate specific implementations that can be re-purposed. * Companion Web site that is regularly updated with relevant content, copy/paste code, live links, RSS feeds and more.

This book constitutes the refereed proceedings of the 17th International Conference on Conceptual Structures, ICCS 2009, which took place in Moscow, Russia, on July 26-31, 2009. The 18 papers presented together with 5 invited contributions were carefully reviewed and selected from approximately 50 submissions. Originally centered around research on knowledge representation and reasoning with conceptual

graphs, over the years ICCS has broadened its scope to include innovations from a wider range of theories and related practices, among them other forms of graph-based formalisms like RDF or existential graphs, formal concept analysis, semantic Web technologies, ontologies, concept mapping and more.

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

This book constitutes the proceedings of the Second Joint International Semantic Technology Conference, JIST 2012, held in Nara, Japan, in December 2012. The 20 full papers and 13 short papers included in this volume were carefully reviewed and selected from 90 submissions. The regular papers deal with ontology and description logics; RDF and SPARQL; learning and discovery; semantic search; knowledge building; semantic Web application. The in-use track papers cover topics on social semantic Web and semantic search; and the special track papers have linked data in practice and database integration as a topic. The success of the World Wide Web depends on the ability of users to store, process and retrieve digital information regardless of distance boundaries, languages and domains of knowledge. The universality and flexibility of the World Wide Web have also enabled the rapid growth of a variety of new services and applications based on human-machine interaction. The semantics of exchanged information and services should be useful not only for human to human communications, but also in that machines would be able to understand and automatically process web content. Semantics give well-defined meaning to web content and enable computers and people to work in cooperation. Today, the crucial challenge becomes the development of languages to express information in a machine processable format. Now more than ever, new advanced techniques and intelligent approaches are required to transform the Web into a universal reasoning and computing machine. Web intelligence attempts to deal with this challenge by exploiting information technologies and artificial intelligence approaches to design the next generation of web-empowered systems and services.

This book constitutes the thoroughly refereed post conference proceedings of the 4th edition of the Semantic Web Evaluation Challenge, SemWebEval 2017, co-located with the 14th European Semantic Web conference, held in Portoroz, Slovenia, in May/June 2017. This book includes the descriptions of all methods and tools that competed at SemWebEval 2017, together with a detailed description of the tasks, evaluation procedures and datasets. The 11 revised full papers presented in this volume were carefully reviewed and selected from 21 submissions. The contributions are grouped in the areas: the mighty storage challenge; open knowledge extraction challenge; question answering over linked data challenge; semantic sentiment analysis.

E-government faces huge challenges in achieving interoperability and integration, taking into account differences in laws, regulations, services, administrative processes and languages across regions and countries. On the other hand, issues like service, data and process integration have been researched by the Semantic Web community for several years now, and in the last two to three years we have witnessed the first applications of semantic technologies in real, operational e-government

systems in both Europe and the US which address exactly these challenges. With this book, the editors present the latest research results on how to use semantic technologies in order to improve or even revolutionize the use of ICT in public administration systems. The contributions are organized into three parts: architectures and process integration, ontologies and interoperability, and portals and user interactions. They give a broad overview of how semantic technologies have been applied in different e-government projects funded from the European program for ICT Research and Development, and they cover a wide spectrum of semantic technologies such as development of domain and service ontologies, semantic enhancements of business process models, semantic Service-Oriented Architectures (SOAs) based on Semantic Web Services (SWS) frameworks, and ontology-based knowledge management. In this volume, researchers of Semantic Web technologies will find a wealth of challenging real-world scenarios to stimulate new fields of research, while developers of e-government systems as well as other stakeholders in public administration will appreciate the detailed presentations and discussions of numerous applications in areas such as e-government portals, personalization of Web-based public services, or integration and orchestration of public administration processes.

This book constitutes the thoroughly refereed proceedings of the 9th Joint International Semantic Technology Conference, JIST 2019, held in Hangzhou, China, in November 2019. The 24 full papers presented were carefully reviewed and selected from 70 submissions. They present applications of semantic technologies, theoretical results, new algorithms and tools to facilitate the adoption of semantic technologies and are organized in topical sections on knowledge graphs; data management; question answering and NLP; ontology and reasoning; government open data; and semantic web for life sciences.

A state-of-the-art reference to one of the most active and productive fields in linguistics: computational linguistics. Thirty-eight chapters, commissioned from experts all over the world, describe the major concepts, methods, and applications. Part I provides an overview of the field; Part II describes current tasks, techniques, and tools in natural language processing; and Part III surveys current applications.

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