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Towards the Semantic Web Ontology-driven Knowledge Management John Wiley & Sons With the current changes driven by the expansion of the World Wide Web, this book uses a different approach from other books on the market: it applies ontologies to electronically available information to improve the quality of knowledge management in large and distributed organizations. Ontologies are formal theories supporting knowledge sharing and reuse. They can be used to explicitly represent semantics of semi-structured information. These enable sophisticated automatic support for acquiring, maintaining and accessing information. Methodology and tools are developed for intelligent access to large volumes of semi-structured and textual information sources in intra- and extra-, and internet-based environments to employ the full power of ontologies in supporting knowledge management from the information client perspective and the information provider. The aim of the book is to support efficient and effective knowledge management and focuses on weakly-structured online information sources. It is aimed primarily at researchers in the area of knowledge management and information retrieval and will also be a useful reference for students in computer science at the postgraduate level and for business managers who are aiming to increase the corporations' information infrastructure. The Semantic Web is a very important initiative affecting the future of the WWW that is currently generating huge interest. The book covers several highly significant contributions to the semantic web research effort, including a new language for defining ontologies, several novel software tools and a coherent methodology for the application of the tools for business advantage. It also provides 3 case studies which give examples of the real benefits to be derived from the adoption of semantic-web based ontologies in "real world" situations. As such, the book is an excellent mixture of theory, tools and applications in an important area of WWW research. * Provides guidelines for introducing knowledge management concepts and tools into enterprises, to help knowledge providers present their knowledge efficiently and effectively. * Introduces an intelligent search tool that supports users in accessing information and a tool environment for maintenance, conversion and acquisition of information sources. * Discusses three large case studies which will help to develop the technology according to the actual needs of large and or virtual organisations and will provide a testbed for evaluating tools and methods. The book is aimed at people with at least a good understanding of existing WWW technology and some level of technical understanding of the underpinning technologies (XML/RDF). It will be of interest to graduate students, academic and industrial researchers in the field, and the many industrial personnel who are tracking WWW technology developments in order to understand the business implications. It could also be used to support undergraduate courses in the area but is not itself an introductory text. **Semantic Web Ontology and Knowledge Base Enabled Tools, Services, and Applications** IGI Global Semantic web continues to be an increasingly important system for allowing end-users to share and communicate information online. **Semantic Web: Ontology and Knowledge Base Enabled Tools, Services and Application** focuses on the information systems discipline and the tools and techniques utilized for the emerging use of semantic web. Covering topics on semantic search, ontologies, and recommendation systems, this publication is essential for academics, practitioners, and industry professionals. **Ontology Learning for the Semantic Web** Springer Science & Business Media Ontology Learning for the Semantic Web explores techniques for applying knowledge discovery techniques to different web data sources (such as HTML documents, dictionaries, etc.), in order to support the task of engineering and maintaining ontologies. The approach of ontology learning proposed in **Ontology Learning for the Semantic Web** includes a number of complementary disciplines that feed in different types of unstructured and semi-structured data. This data is necessary in order to support a semi-automatic ontology engineering process. **Ontology Learning for the Semantic Web** is designed for researchers and developers of semantic web applications. It also serves as an excellent supplemental reference to advanced level courses in ontologies and the semantic web. **Applied Semantic Web Technologies** CRC Press 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 st **Foundations of Semantic Web Technologies** CRC Press 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 **Advancing Information Management through Semantic Web Concepts and Ontologies** IGI Global "This book provides an analysis and introduction on the concept of combining the areas of semantic web and web mining, emphasizing semantics in technologies, reasoning, content searching and social media"--Provided by publisher. **Introduction to the Semantic Web and Semantic Web Services** CRC Press Even though the semantic Web is a relatively new and dynamic area of research, a whole suite of components, standards, and tools have already been developed around it. Using a concrete approach, **Introduction to the Semantic Web and Semantic Web Services** builds a firm foundation in the concept of the semantic Web, its principal technologies, its real-world applications, and its relevant coding examples. This introductory yet comprehensive book covers every facet of this exciting technology. After an introduction to the semantic Web concept, it discusses its major technical enablers and the relationships among these components. The author then presents several applications of the semantic Web, including Swoogle, FOAF, and a detailed design of a semantic Web search engine. The book concludes with discussions on how to add semantics to traditional Web service descriptions and how to develop a search engine for semantic Web services. Covering the building blocks of an advanced Web technology, this practical resource equips you with the tools to further explore the world of the semantic Web on your own. **Ontology Management Semantic Web, Semantic Web Services, and Business Applications** Springer Science & Business Media Ontology Management provides an up-to-date, scientifically correct, concise and easy-to-read reference on this topic. The book includes relevant tasks, practical and theoretical challenges, limitations and methodologies, plus available tooling support. The editors discuss integrating the conceptual and technical dimensions with a business view on using ontologies, stressing the cost dimension of ontology engineering and offering guidance on how to derive ontologies semi-automatically from existing standards and specifications. **Soft Computing in Ontologies and Semantic Web** Springer Science & Business Media This book covers in a great depth the fast growing topic of tools, techniques and applications of soft computing (e.g., fuzzy logic, genetic algorithms, neural networks, rough sets, Bayesian networks, and other probabilistic techniques) in the ontologies and the Semantic Web. The author shows how components of the Semantic Web (like the RDF, Description Logics, ontologies) can be covered with a soft computing methodology. **Semantic Web for the Working Ontologist Effective Modeling in RDFS and OWL** Elsevier **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 **Web Semantics Cutting Edge and Future Directions in Healthcare** Academic Press **Web Semantics** strengthens the description of web resources to exploit them better and make them more meaningful for both humans and machines, thereby contributing to the development of a knowledgeintensive data web. The world is experiencing the movement of concept from data to knowledge and the movement of web from document model to data model. The underlying idea is making the data machine understandable and processable. In the light of these trends, conciliation of Semantic and the Web is of paramount importance for further progress in the area. **Web Semantics: Cutting Edge and Future Directions in Healthcare** describes the three major components of the study of Semantic Web, namely Representation, Reasoning, and Security with a special focus on the healthcare domain. This book summarizes the trends and current research advances in web semantics, emphasizing the existing tools and techniques, methodologies, and research solutions. It provides easily comprehensible information on Web Semantics including semantics for data and semantics for services. Presents a comprehensive examination of the emerging research in areas of the semantic web, including ontological engineering, semantic annotation, reasoning and intelligent processing, semantic search paradigms, semantic web mining, and semantic sentiment analysis Helps readers understand key concepts in semantic web applications for biomedical engineering and healthcare, including mapping disparate knowledge bases, security issues, multilingual semantic web, and integrating databases with knowledge bases Includes coverage of key application areas of the semantic web, including clinical decision-making, biodiversity science, interactive healthcare, intelligent agent systems, decision support systems, and clinical natural language processing **Semantic Web and Peer-to-Peer Decentralized Management and Exchange of Knowledge and Information** Springer Science & Business Media Just like the industrial society of the last century depended on natural resources, today's society depends on information and its exchange. Staab and Stuckenschmidt structured the selected contributions into four parts: Part I, "Data Storage and Access", prepares the semantic foundation, i.e. data modelling and querying in a flexible and yet scalable manner. These foundations allow for dealing with the organization of information at the individual peers. Part II, "Querying the Network", considers the routing of queries, as well as continuous queries and personalized queries under the conditions of the permanently changing topological structure of a peer-to-peer network. Part III, "Semantic Integration", deals with the mapping of heterogeneous data representations. Finally Part IV, "Methodology and Systems", reports experiences from case studies and sample applications. The overall result is a state-of-the-art description of the potential of Semantic Web and peer-to-peer technologies for information sharing and knowledge management when applied jointly. **Knowledge Engineering and Knowledge Management Ontologies and the Semantic Web** Springer th This volume contains the papers presented at the 13 International Conference on Knowledge Engineering and Knowledge Management (EKAW 2002) held in Sig enza, Spain, October 1-4, 2002. Papers were invited on topics related to Knowledge Acquisition, Knowledge Management, Ontologies, and the Semantic Web. A total of 110 papers were submitted. Each submission was evaluated by at least two reviewers. The selection process has resulted in the acceptance of 20 long and 14 short papers for publication and presentation at the conference; an acceptance rate of about 30%. In addition, one invited paper by a keynote speaker is included. This volume contains 8 papers on Knowledge Acquisition, 4 about Knowledge Management, 16 on Ontologies, and 6 papers about the Semantic Web. This was the second time (EKAW 2000 being the first) that the event was organized as a conference rather than as the usual workshop (hence the acronym: European Knowledge Acquisition Workshop). The large number of submissions (110 versus the usual 40-60) is an indication that the scientific

community values EKAW as an important event to share experiences in the Knowledge Technology area, worthy of being organized as a prestigious international conference. Knowledge is the fuel of the upcoming Knowledge Economy. Therefore, we believe that conferences such as EKAW, that focus on Knowledge Technologies, will continue to play a major role as a platform for sharing and exchanging experiences and knowledge between key players in the area. Law and the Semantic Web Legal Ontologies, Methodologies, Legal Information Retrieval, and Applications Springer by Roberto Cencioni At the Lisbon Summit in March 2000, European heads of state and government set a new goal for the European Union — to become the most competitive knowledge-based society in the world by 2010. As part of this objective, ICT (information and communication technologies) services should become available for every citizen, and for all schools, homes and businesses. The book you have in front of you is about Semantic Web technology and law. Law is something omnipresent; all citizens — at some points in their lives — have to deal with it. In addition, law involves a large group of professionals, and is a multi-billion business world wide. Information technology is important because it that can improve citizens' interaction with law, as well as improve legal professionals' work environment. Legal professionals dedicate a significant amount of their time to finding, reading, analyzing and synthesizing information in order to take decisions, and prepare advice and trials, among other tasks. As part of the "Semantic-Based Knowledge and Content Systems" Strategic Objective, the European Commission is funding projects to construct technology to make the Semantic Web vision come true. 1 The articles in this book are related to two current foci of the Strategic Objective : • Knowledge acquisition and modelling, capturing knowledge from raw information and multimedia content in webs and other distributed repositories to turn poorly structured information into machine-processable knowledge. A Developer's Guide to the Semantic Web Springer The Semantic Web represents a vision for how to make the huge amount of information on the Web automatically processable by machines on a large scale. For this purpose, a whole suite of standards, technologies and related tools have been specified and developed over the last couple of years and they have now become the foundation for numerous new applications. A Developer's Guide to the Semantic Web helps the reader to learn the core standards, key components and underlying concepts. It provides in-depth coverage of both the what-is and how-to aspects of the Semantic Web. From Yu's presentation, the reader will obtain not only a solid understanding about the Semantic Web, but also learn how to combine all the pieces to build new applications on the Semantic Web. The second edition of this book not only adds detailed coverage of the latest W3C standards such as SPARQL 1.1 and RDB2RDF, it also updates the readers by following recent developments. More specifically, it includes five new chapters on schema.org and semantic markup, on Semantic Web technologies used in social networks and on new applications and projects such as data.gov and Wikidata and it also provides a complete coding example of building a search engine that supports Rich Snippets. Software developers in industry and students specializing in Web development or Semantic Web technologies will find in this book the most complete guide to this exciting field available today. Based on the step-by-step presentation of real-world projects, where the technologies and standards are applied, they will acquire the knowledge needed to design and implement state-of-the-art applications. Semantic Web Technologies Trends and Research in Ontology-based Systems John Wiley & Sons The Semantic Web combines the descriptive languages RDF (Resource Description Framework) and OWL (Web Ontology Language), with the data-centric, customizable XML (eXtensible Mark-up Language) to provide descriptions of the content of Web documents. These machine-interpretable descriptions allow more intelligent software systems to be written, automating the analysis and exploitation of web-based information. Software agents will be able to create automatically new services from already published services, with potentially huge implications for models of e-Business. Semantic Web Technologies provides a comprehensive overview of key semantic knowledge technologies and research. The authors explain (semi-)automatic ontology generation and metadata extraction in depth, along with ontology management and mediation. Further chapters examine how Semantic Web technology is being applied in knowledge management ("Semantic Information Access") and in the next generation of Web services. Semantic Web Technologies: Provides a comprehensive exposition of the state-of-the-art in Semantic Web research and key technologies. Explains the use of ontologies and metadata to achieve machine-interpretable. Describes methods for ontology learning and metadata generation. Discusses ontology management and evolution, covering ontology change detection and propagation, ontology dependency and mediation. Illustrates the theoretical concepts with three case studies on industrial applications in digital libraries, the legal sector and the telecommunication industry. Graduate and advanced undergraduate students, academic and industrial researchers in the field will all find Semantic Web Technologies an essential guide to the technologies of the Semantic Web. Advances in Web Semantics I Ontologies, Web Services and Applied Semantic Web Springer Science & Business Media This book constitutes the first volume of a series of books focusing on the vital and ever-growing field of web semantics. The primary aim of the series is to investigate, present and promote core concepts, ideas and exemplary technologies for the next generation of semantic web research, stemming from both academia and industry. Topics covered will include process semantics, web services, ontologies, workflows, trust and reputation, and web applications. The 14 papers in this volume, written by key scientists in the field, are preceded by an introduction written by the volume editors. The papers have been divided into three sections on Ontologies and Knowledge Sharing, Applied Semantic Web, and Web Services. Web Semantics & Ontology IGI Global "This book provides an overview of current research and development activities in the area of web semantics and ontology, giving an in-depth description of different issues, including modeling, using ontologies in enterprise systems, querying and knowledge discovering of ontologies"--Provided by publisher. Semantic Web Programming John Wiley & Sons The next major advance in the Web-Web 3.0-will be built on semantic Web technologies, which will allow data to be shared and reused across application, enterprise, and community boundaries. Written by a team of highly experienced Web developers, this book explains examines how this powerful new technology can unify and fully leverage the ever-growing data, information, and services that are available on the Internet. Helpful examples demonstrate how to use the semantic Web to solve practical, real-world problems while you take a look at the set of design principles, collaborative working groups, and technologies that form the semantic Web. The companion Web site features full code, as well as a reference section, a FAQ section, a discussion forum, and a semantic blog. The Semantic Web: Semantics and Big Data 10th International Conference, ESWC 2013, Montpellier, France, May 26-30, 2013. Proceedings Springer This book constitutes the refereed proceedings of the 10th Extended Semantic Web Conference, ESWC 2013, held in Montpellier, France, in May 2013. The 42 revised full papers presented together with three invited talks were carefully reviewed and selected from 162 submissions. They are organized in tracks on ontologies; linked open data; semantic data management; mobile Web, sensors and semantic streams; reasoning; natural language processing and information retrieval; machine learning; social Web and Web science; cognition and semantic Web; and in-use and industrial tracks. The book also includes 17 PhD papers presented at the PhD Symposium. Programming the Semantic Web Build Flexible Applications with Graph Data "O'Reilly Media, Inc." With this book, the promise of the Semantic Web -- in which machines can find, share, and combine data on the Web -- is not just a technical possibility, but a practical reality Programming the Semantic Web demonstrates several ways to implement semantic web applications, using current and emerging standards and technologies. You'll learn how to incorporate existing data sources into semantically aware applications and publish rich semantic data. Each chapter walks you through a single piece of semantic technology and explains how you can use it to solve real problems. Whether you're writing a simple mashup or maintaining a high-performance enterprise solution, Programming the Semantic Web provides a standard, flexible approach for integrating and future-proofing systems and data. This book will help you: Learn how the Semantic Web allows new and unexpected uses of data to emerge Understand how semantic technologies promote data portability with a simple, abstract model for knowledge representation Become familiar with semantic standards, such as the Resource Description Framework (RDF) and the Web Ontology Language (OWL) Make use of semantic programming techniques to both enrich and simplify current web applications Mastering Structured Data on the Semantic Web From HTML5 Microdata to Linked Open Data Apress A major limitation of conventional web sites is their unorganized and isolated contents, which is created mainly for human consumption. This limitation can be addressed by organizing and publishing data, using powerful formats that add structure and meaning to the content of web pages and link related data to one another. Computers can "understand" such data better, which can be useful for task automation. The web sites that provide semantics (meaning) to software agents form the Semantic Web, the Artificial Intelligence extension of the World Wide Web. In contrast to the conventional Web (the "Web of Documents"), the Semantic Web includes the "Web of Data", which connects "things" (representing real-world humans and objects) rather than documents meaningless to computers. Mastering Structured Data on the Semantic Web explains the practical aspects and the theory behind the Semantic Web and how structured data, such as HTML5 Microdata and JSON-LD, can be used to improve your site's performance on next-generation Search Engine Result Pages and be displayed on Google Knowledge Panels. You will learn how to represent arbitrary fields of human knowledge in a machine-interpretable form using the Resource Description Framework (RDF), the cornerstone of the Semantic Web. You will see how to store and manipulate RDF data in purpose-built graph databases such as triplestores and quadstores, that are exploited in Internet marketing, social media, and data mining, in the form of Big Data applications such as the Google Knowledge Graph, Wikidata, or Facebook's Social Graph. With the constantly increasing user expectations in web services and applications, Semantic Web standards gain more popularity. This book will familiarize you with the leading controlled vocabularies and ontologies and explain how to represent your own concepts. After learning the principles of Linked Data, the five-star deployment scheme, and the Open Data concept, you will be able to create and interlink five-star Linked Open Data, and merge your RDF graphs to the LOD Cloud. The book also covers the most important tools for generating, storing, extracting, and visualizing RDF data, including, but not limited to, Protégé, TopBraid Composer, Sindice, Apache Marmotta, Callimachus, and Tabulator. You will learn to implement Apache Jena and Sesame in popular IDEs such as Eclipse and NetBeans, and use these APIs for rapid Semantic Web application development. Mastering Structured Data on the Semantic Web demonstrates how to represent and connect structured data to reach a wider audience, encourage data reuse, and provide content that can be automatically processed with full certainty. As a result, your web contents will be integral parts of the next revolution of the Web. Ontologies: A Silver Bullet for Knowledge Management and Electronic Commerce Springer Science & Business Media Ontologies have been developed and investigated for quite a while now in artificial intelligence and natural language processing to facilitate knowledge sharing and reuse. More recently, the notion of ontologies has attracted attention from fields such as intelligent information integration, cooperative information systems, information retrieval, electronic commerce, and knowledge management. The author systematically introduces the notion of ontologies to the non-expert reader and demonstrates in detail how to apply this conceptual framework for improved intranet retrieval of corporate information and knowledge and for enhanced Internet-based electronic commerce. In the second part of the book, the author presents a more technical view on emerging Web standards, like XML, RDF, XSL-T, or XQL, allowing for structural and semantic modeling and description of data and information. A Semantic Web Primer, third edition MIT Press A new edition of the widely used guide to the key ideas, languages, and technologies of the Semantic Web The development of the Semantic Web, with machine-readable content, has the potential to revolutionize the World Wide Web and its uses. A Semantic Web Primer provides an introduction and guide to this continuously evolving field, describing its key ideas, languages, and technologies. Suitable for use as a textbook or for independent study by professionals, it concentrates on undergraduate-level fundamental concepts and techniques that will enable readers to proceed with building applications on their own and includes exercises, project descriptions, and annotated references to relevant online materials. The third edition of this widely used text has been thoroughly updated, with significant new material that reflects a rapidly developing field. Treatment of the different languages (OWL2, rules) expands the coverage of RDF and OWL, defining the data model independently of XML and including coverage of N3/Turtle and RDFa. A chapter is devoted to OWL2, the new W3C standard. This edition also features additional coverage of the query language SPARQL, the rule language RIF and the possibility of interaction between rules and ontology languages and applications. The chapter on Semantic Web applications reflects the rapid developments of the past few years. A new chapter offers ideas for term projects. Additional material, including updates on the technological trends and research directions, can be found at <http://www.semanticwebprimer.org>. Fuzzy Logic and the Semantic Web Elsevier These are exciting times in the fields of Fuzzy Logic and the Semantic Web, and this book will add to the excitement, as it is the first volume to focus on the growing connections between these two fields. This book is expected to be a valuable aid to anyone considering the application of Fuzzy Logic to the Semantic Web, because it contains a number of detailed accounts of these combined fields, written by leading authors in several countries. The Fuzzy Logic field has been maturing for forty years. These years have witnessed a tremendous growth in the number and variety of applications, with a real-world impact across a wide variety of domains with humanlike behavior and reasoning. And we believe that in the coming years, the Semantic Web will be

major field of applications of Fuzzy Logic. This book, the first in the new series Capturing Intelligence, shows the positive role Fuzzy Logic, and more generally Soft Computing, can play in the development of the Semantic Web, filling a gap and facing a new challenge. It covers concepts, tools, techniques and applications exhibiting the usefulness, and the necessity, for using Fuzzy Logic in the Semantic Web. It finally opens the road to new systems with a high Web IQ. Most of today's Web content is suitable for human consumption. The Semantic Web is presented as an extension of the current web in which information is given well-defined meaning, better enabling computers and people to work in cooperation. For example, within the Semantic Web, computers will understand the meaning of semantic data on a web page by following links to specified ontologies. But while the Semantic Web vision and research attracts attention, as long as it will be used two-valued-based logical methods no progress will be expected in handling ill-structured, uncertain or imprecise information encountered in real world knowledge. Fuzzy Logic and associated concepts and techniques (more generally, Soft Computing), has certainly a positive role to play in the development of the Semantic Web. Fuzzy Logic will not supposed to be the basis for the Semantic Web but its related concepts and techniques will certainly reinforce the systems classically developed within W3C. In fact, Fuzzy Logic cannot be ignored in order to bridge the gap between human-understandable soft logic and machine-readable hard logic. None of the usual logical requirements can be guaranteed: there is no centrally defined format for data, no guarantee of truth for assertions made, no guarantee of consistency. To support these arguments, this book shows how components of the Semantic Web (like XML, RDF, Description Logics, Conceptual Graphs, Ontologies) can be covered, with in each case a Fuzzy Logic focus. First volume to focus on the growing connections between Fuzzy Logic and the Semantic Web Keynote chapter by Lotfi Zadeh The Semantic Web is presently expected to be a major field of applications of Fuzzy Logic It fills a gap and faces a new challenge in the development of the Semantic Web It opens the road to new systems with a high Web IQ Contributed chapters by Fuzzy Logic leading experts Applications and Practices in Ontology Design, Extraction, and Reasoning IOS Press Semantic Web technologies enable people to create data stores on the Web, build vocabularies, and write rules for handling data. They have been in use for several years now, and knowledge extraction and knowledge discovery are two key aspects investigated in a number of research fields which can potentially benefit from the application of semantic web technologies, and specifically from the development and reuse of ontologies. This book, Applications and Practices in Ontology Design, Extraction, and Reasoning, has as its main goal the provision of an overview of application fields for semantic web technologies. In particular, it investigates how state-of-the-art formal languages, models, methods, and applications of semantic web technologies reframe research questions and approaches in a number of research fields. The book also aims to showcase practical tools and background knowledge for the building and querying of ontologies. The first part of the book presents the state-of-the-art of ontology design, applications and practices in a number of communities, and in doing so it provides an overview of the latest approaches and techniques for building and reusing ontologies according to domain-dependent and independent requirements. Once the data is represented according to ontologies, it is important to be able to query and reason about them, also in the presence of uncertainty, vagueness and probabilities. The second part of the book covers some of the latest advances in the fields of ontology, semantics and reasoning, without losing sight of the book's practical goals. Ontological Engineering with examples from the areas of Knowledge Management, e-Commerce and the Semantic Web. First Edition Springer Science & Business Media Ontological Engineering refers to the set of activities that concern the ontology development process, the ontology life cycle, the methods and methodologies for building ontologies, and the tool suites and languages that support them. During the last decade, increasing attention has been focused on ontologies and Ontological Engineering. Ontologies are now widely used in Knowledge Engineering, Artificial Intelligence and Computer Science; in applications related to knowledge management, natural language processing, e-commerce, intelligent integration information, information retrieval, integration of databases, b- informatics, and education; and in new emerging fields like the Semantic Web. Primary goals of this book are to acquaint students, researchers and developers of information systems with the basic concepts and major issues of Ontological Engineering, as well as to make ontologies more understandable to those computer science engineers that integrate ontologies into their information systems. We have paid special attention to the influence that ontologies have on the Semantic Web. Pointers to the Semantic Web appear in all the chapters, but specially in the chapter on ontology languages and tools. Handbook on Ontologies Springer Science & Business Media An ontology is a formal description of concepts and relationships that can exist for a community of human and/or machine agents. The notion of ontologies is crucial for the purpose of enabling knowledge sharing and reuse. The Handbook on Ontologies provides a comprehensive overview of the current status and future perspectives of the field of ontologies considering ontology languages, ontology engineering methods, example ontologies, infrastructures and technologies for ontologies, and how to bring this all into ontology-based infrastructures and applications that are among the best of their kind. The field of ontologies has tremendously developed and grown in the five years since the first edition of the "Handbook on Ontologies". Therefore, its revision includes 21 completely new chapters as well as a major re-working of 15 chapters transferred to this second edition. Theory and Applications of Ontology: Computer Applications Springer Science & Business Media Ontology was once understood to be the philosophical inquiry into the structure of reality: the analysis and categorization of 'what there is'. Recently, however, a field called 'ontology' has become part of the rapidly growing research industry in information technology. The two fields have more in common than just their name. Theory and Applications of Ontology is a two-volume anthology that aims to further an informed discussion about the relationship between ontology in philosophy and ontology in information technology. It fills an important lacuna in cutting-edge research on ontology in both fields, supplying stage-setting overview articles on history and method, presenting directions of current research in either field, and highlighting areas of productive interdisciplinary contact. Theory and Applications of Ontology: Computer Applications presents ontology in ways that philosophers are not likely to find elsewhere. The volume offers an overview of current research in ontology, distinguishing basic conceptual issues, domain applications, general frameworks, and mathematical formalisms. It introduces the reader to current research on frameworks and applications in information technology in ways that are sure to invite reflection and constructive responses from ontologists in philosophy. Enabling Semantic Web Services The Web Service Modeling Ontology Springer Science & Business Media Service-oriented computing is an emerging factor in IT research and development. Organizations like W3C and the EU have begun research projects to develop industrial-strength applications. This book offers a thorough, practical introduction to one of the most promising approaches - the Web Service Modeling Ontology (WSMO). After a brief review of technologies and standards of the Worldwide Web, the Semantic Web, and Web Services, the book examines WSMO from the fundamentals to applications in e-commerce, e-government and e-banking; it also describes its relation to OWL-S and WSDL-S and other applications. The book offers an up-to-date introduction, plus pointers to future applications. Visualizing the Semantic Web XML-based Internet and Information Visualization Springer Science & Business Media The first book that deals specifically with visualization of the XML-based Web. It presents the state-of-the-art research in this area and focuses on key topics such as: visualization of semantic and structural information and metadata; exploring and querying XML documents using interactive multimedia interfaces; topic map visualization; visual modelling of XML/RDF ontologies and schemas; rendering and viewing of XML documents; SVG/X3D: new visualization techniques for the semantic web; and methods used to construct high quality metadata/metadata taxonomies. Most of the techniques and methods discussed here can be applied now, making this book essential reading for SML and Web developers as well as visualization researchers. Information Sharing on the Semantic Web Springer Science & Business Media Details recent research in areas such as ontology design for information integration, metadata generation and management, and representation and management of distributed ontologies. Provides decision support on the use of novel technologies, information about potential problems, and guidelines for the successful application of existing technologies. Visual Knowledge Modeling for Semantic Web Technologies: Models and Ontologies Models and Ontologies IGI Global "This book addresses how we can make the Web more useful, more intelligent, more knowledge intensive to fulfill our more and more demanding learning and working needs? It is based on the premise that representing knowledge visually is key for individuals and organizations to enable useful access to the knowledge era"--Provided by publisher. The Semantic Web: Research and Applications Second European Semantic Web Conference, ESWC 2005, Heraklion, Crete, Greece, May 29-June 1, 2005, Proceedings Springer This volume contains the papers presented at the 2nd European Semantic Web Conference (ESWC 2005) held in Heraklion, Crete, Greece, from 29th May to 1st June, 2005. The vision of the Semantic Web is to enhance today's Web via the exploitation of machine-processable metadata. The explicit representation of the semantics of data, accompanied with domain theories (ontologies), will enable a web that provides a qualitatively new level of service. It will weave together a - crediblylargenetworkofhumanknowledgeandwillcomplementitwithmachine processability. Various automated services will help the user to achieve goals by accessing and providing information in a machine-understandable form. This process may ultimately create extremely knowledgeable systems with various specialized reasoning services systems. Many technologies and methodologies are being developed within artificial intelligence, human language technology, machine learning, databases, software engineering and information systems that can contribute to the realization of this vision. The 2nd Annual European Semantic Web Conference presented the latest results in research and applications of Semantic Web technologies. Following the success of the 1st edition, ESWC showed a significant increase in participation. With 148 submissions, the number of papers doubled that of the previous edition. Each submission was evaluated by at least three reviewers. The selection process resulted in the acceptance of 48 papers for publication and presentation at the conference (an acceptance rate of 32%). Papers did not come only from Europe but also from other continents. The Semantic Web: Semantics and Big Data 10th International Conference, ESWC 2013, Montpellier, France, May 26-30, 2013. Proceedings Springer This book constitutes the refereed proceedings of the 10th Extended Semantic Web Conference, ESWC 2013, held in Montpellier, France, in May 2013. The 42 revised full papers presented together with three invited talks were carefully reviewed and selected from 162 submissions. They are organized in tracks on ontologies; linked open data; semantic data management; mobile Web, sensors and semantic streams; reasoning; natural language processing and information retrieval; machine learning; social Web and Web science; cognition and semantic Web; and in-use and industrial tracks. The book also includes 17 PhD papers presented at the PhD Symposium. Semantic Management of Middleware Springer Science & Business Media Current middleware solutions, e.g., application servers and Web services, are very complex software products that are hard to tame because of intricacies of distributed systems. Their functionalities have mostly been developed and managed with the help of administration tools and corresponding configuration files, recently in XML. Though this constitutes flexibility for developing and administering a distributed application, the conceptual model underlying the different configurations is only implicit. To remedy such problems, Semantic Management of Middleware contributes an ontology-based approach to support the development and administration of middleware-based applications. The ontology is an explicit conceptual model with formal logic-based semantics. Its descriptions may therefore be queried, may foresight required actions, or may be checked to avoid inconsistent system configurations. This book builds a rigorous approach towards giving the declarative descriptions of components and services a well-defined meaning by specifying ontological foundations and by showing how such foundations may be realized in practical, up-and-running systems. Publishing and Using Cultural Heritage Linked Data on the Semantic Web Morgan & Claypool Publishers "This book gives an overview on why, when, and how Linked (Open) Data and Semantic Web technologies can be employed in practice in publishing CH collections and other content on the Web. The text first motivates and presents a general semantic portal model and publishing framework as a solution approach to distributed semantic content creation, based on an ontology infrastructure. On the Semantic Web, such an infrastructure includes shared metadata models, ontologies, and logical reasoning, and is supported by shared ontology and other Web services alleviating the use of the new technology and linked data in legacy cataloging systems."-- Publisher's website. Ontologies A Handbook of Principles, Concepts and Applications in Information Systems Springer Science & Business Media This book describes the state-of-the-art in ontology-driven information systems (ODIS) and gives a complete perspective on the problems, solutions and open research questions in this field. The book covers four broad areas: foundations of ODIS, ontological engineering, ODIS architectures, and ODIS applications. It will trigger innovative thought processes and open up significant new domains in ODIS research. Law, Ontologies and the Semantic Web Channelling the Legal Information Flood IOS Press Based on workshops and conferences on Artificial Intelligence (AI) and Law, this work deals with legal ontologies and Semantic Web applications, covering both theoretical aspects and practical systems. The Semantic Web: Research and Applications 5th European Semantic Web Conference, ESWC 2008, Tenerife, Canary Islands, Spain Springer Science & Business Media This volume contains the papers from the technical programme of the 5th European Semantic Web Conference, ESWC 2008, that took place during June 1-5, 2008 in Tenerife, Islas Canarias, Spain. ESWC 2008 was the latest in a series

of annual, international events focusing on the dissemination and discussion of the latest research and applications of Semantic Web technologies. The call for papers saw over 270 submissions, a comparable figure to the previous year, indicating that the conference series has reached a certain level of maturity. The review process was organized using a two-tiered system. First, each submission was reviewed by at least three members of the Programme Committee. Submissions were also assigned to a senior Programme Committee member, who led discussions between reviewers and provided a metareview and provisional decision. A physical Programme Committee meeting was then held, where the final decisions were made. Competition was as strong as ever, and the Programme Committee selected 51 papers to be presented at the conference. In addition to the technical research paper track, a system demo track was included, with its own review process. Twenty-seven demo papers were selected for publication. System demo authors were given the opportunity to present their work in dedicated sessions during the conference, while an evening reception was also devoted to the presentation of posters and demonstrations of systems. As in past years, ESWC subscribed to the call to "eat our own dog food," with the publication of a rich set of semantic metadata describing the conference. Three invited talks were given by distinguished scientists: Nigel Shadbolt (Garlik Ltd).