Law And The Semantic Web Legal Ontologies Methodologies Legal Information Retrieval And Applications Lecture Notes In Computer Science

Legal Theory, Sources of Law and the Semantic Web is an attempt to construct an integrated conceptual framework for the application-neutral and problem-neutral representation of sources of law using Semantic Web technology and concepts, and some technically straightforward extensions to Semantic Web technology based on established practices found in fielded applications. To construct this framework, the author disentangled some problems that are often mixed up in legal theory and – in extension – legal knowledge representation. The purpose of this framework is to provide a theoretical background for the creation of reusable and maintainable knowledge components representing knowledge of sources of law on the Semantic Web. These components should form a basis for the development for computer applications supporting straightforward, routine decision making problems using traditional methods. This book aims to be a work of ontology: an account of relevant aspects of the knowledge domain of law from the perspective of a legal knowledge engineer interested in sources of law. One cannot however say that the result of this work is an ontology: this book presents a mix of design principles, design patterns for knowledge representation in OWL DL and ontology fragments.

After years of mostly theoretical research, Semantic Web Technologies are now reaching out into application areas like bioinformatics, eCommerce, eGovernment, or Social Webs. Applications like genomic ontologies, semantic web services, automated catalogue alignment, ontology matching, or blogs and social networks are constantly increasing, often driven or at least backed up by companies like Google, Amazon, YouTube, Facebook, LinkedIn and others. The need to leverage the potential of combining information in a meaningful way in order to be able to benefit from the Web will create further demand for and interest in Semantic Web research. This movement, based on the growing maturity of related research results, necessitates a reliable reference source from which beginners to the field can draw a first basic knowledge of the main underlying technologies as well as state-of-the-art application areas. This handbook, put together by three leading authorities in the field, and supported by an advisory board of highly reputed researchers, fulfils exactly this need. It is the first dedicated reference work in this field, collecting contributions about both the technical foundations of the Semantic Web as well as their main usage in other scientific fields like life sciences, engineering, business, or education.

This volume examines the basic layers of the standard-based creation and usage of legislation. In particular, it addresses the identification of legislative documents, their structure, the basic metadata and legislative changes. Since mature technologies and established practices are already in place for these layers, a standard-based approach is a necessary aspect of the up-to-date management of legislative resources. Starting out with an overview of the context for the use of XML standards in legislation, the book next examines the rationale of standard-based management of legislative documents. It goes on to address such issues as naming, the Akoma-Ntoso document model, the contribution of standard-based document management to handling legislative dynamics, meta-standards and interchange standards. The volume concludes with a discussion of semantic resources and a review on systems and projects.

This book constitutes the refereed proceedings of the 4th International Semantic Web Conference, ISWC 2005, held in Galway, Ireland, in November 2005. The 54 revised full academic papers and 17 revised industrial papers presented together with abstracts of 3 invited talks were carefully reviewed and selected from a total of 217 submitted papers to the academic track and 30 to the industrial track. The research papers address all current issues in the field of the semantic Web, ranging from theoretical aspects to various applications. The industrial track contains papers on applications in particular industrical sectors, new technology for building applications, and methodological and feasibility aspects of building industrial applications that incorporate semantic Web technology. Short descriptions of the top five winning applications submitted to the Semantic Web Challenge competition conclude the volume.

As the first volume of World Scientific Encyclopedia with Semantic Computing and Robotic Intelligence, this volume is designed to lay the foundation for the understanding of the Semantic Computing (SC), as a core concept to study Robotic Intelligence in the subsequent volumes. This volume aims to provide a reference to the development of Semantic Computing, in the terms of "meaning", "context", and "intention". It brings together a series of technical notes, in average, no longer than 10 pages in length, each focuses on one topic in Semantic Computing; being review article or research paper, to explain the fundamental concepts, models or algorithms, and possible applications of the technology concerned. This volume will address three core areas in Semantic Computing: Understanding the (possibly naturally-expressed) intentions (semantics) of users and expressing them in a machine-processable format: Semantics description languages, ontology integration, interoperabilityUnderstanding the meanings (semantics) of computational content (of various sorts, including, but is not limited to, text, video, audio, process, network, software and hardware) and expressing them in a machine-processable format in Multimedia, IoT, SDN, wearable computing, interfacable with mobile computing, search engines, question answering, web services, to support applications in biomedicine, healthcare, manufacturing, engineering, education, finance, entertainment, business, science and humanityMapping the semantics of the user in context for content retrieval, management, creation in the form of structured data, image and video, audio and speech, big data, natural language, deep learning.

This work deals with the applications of Semantic Publishing technologies in the legal domain, i.e., the use of Semantic Web technologies to address issues related to the Legal Scholarly Publishing. Research in the field of Law has a long tradition in the application of semantic technologies, such as Semantic Web and Linked Data, to real-world scenarios. This book investigates and proposes solutions for three main issues that Semantic Publishing needs to address within the context of the Legal Scholarly Publishing: the need of tools for linking document text to a formal representation of its meaning; the lack of complete metadata schemas for describing documents according to the publishing vocabulary and the absence of effective tools and user interfaces for easily acting on semantic publishing models and theories. In particular, this work introduces EARMARK, a markup meta language that allows one to create markup documents without the structural and semantic limits imposed by markup languages such as XML. EARMARK is a platform to link the content layer of a document with its intended formal semantics and it can be used with the Semantic Publishing and Referencing (SPAR) Ontologies, another topic in this book. SPAR Ontologies are a collection of formal models providing an upper semantic layer for describing the publishing domain. Using EARMARK as a foundation for SPAR descriptions opens up to a semantic characterisation of all the aspects of a document and of its parts. Finally, four user-friendly tools are introduced: LODE, KC-Viz, Graffoo and Gaffe. They were expressly developed to facilitate the interaction of publishers and domain experts with Semantic Publishing technologies by shielding such users from the underlying formalisms and semantic models of such technologies.

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 administrating 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.

Media and Metamedia Management has contributions from seven prestigious experts, who offer their expertise and the view from their vantage point on communication, journalism, advertising, audiovisual, and corporate, political, and digital communication, paying special attention to the role of new technologies, the Internet and social networks, also from an ethics and legal dimension. A total of 118 authors belonging to 31 universities from Spain, Portugal, England and Ecuador have contributed to this book edited, coordinated and introduced by professors Francisco Campos-Freire and Xosé López-García, from the University of Santiago de Compostela, José Rúas-Araújo, from the University of Vigo, and Valentín A. Martínez-Fernández, from the University of A Coruña. Readers may also enjoy 66 articles, grouped into diverse chapters, on Journalism and cyberjournalism, audiovisual sector and media economy, corporate and institutional communication, and new media and metamedia.

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

missions in fact also treat an envisaged mutual impact among them. As for the 2002 edition in Irvine, the organizers wanted to stimulate this cross-pollination with a program of shared famous keynote speakers (this year we got Sycara, - ble, Soley and Mylopoulos!), and encouraged multiple attendance by providing authors with free access to another conference or workshop of their choice. We received an even larger number of submissions than last year for the three conferences (360 in total) and the workshops (170 in total). Not only can we therefore again claim a measurable success in attracting a representative volume of scienti?c papers, but such a harvest allowed the program committees of course to compose a high-quality cross-section of worldwide research in the areas covered. In spite of the increased number of submissions, the Program Chairs of the three main conferences decided to accept only approximately the same number of papers for presentation and publication as in 2002 (i. e. , around 1 paper out of every 4–5 submitted). For the workshops, the acceptance rate was about 1 in 2. Also for this reason, we decided to separate the proceedings into two volumes with their own titles, and we are grateful to Springer-Verlag for their collaboration in producing these two books. The reviewing process by the respective program committees was very professional and each paper in the main conferences was reviewed by at least three referees.

Recent years have seen much new research on the interface between artificial intelligence and law, looking at issues such as automated legal reasoning. This collection of papers represents the state of the art in this fascinating and highly topical field.

This book about legal ontologies and Semantic Web applications has its roots in workshops and conferences on Artificial Intelligence (AI) and Law. The domain of law belongs to the early adopters of ontologies and semantic web technology to support its enormous and fast growing demand for effective information management; it is probably only surpassed in this respect by the bio-sciences. Having easy access to relevant legal information among the rising flood of legal documentation is not only the concern of legal practitioners. The life and work of citizens becomes more and more entangled with legal issues as well.

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The Semantic Web, extends the popular, day-to-day Web, enabling computers and people to effectively work together by giving information well-defined meaning. Knitting the Semantic Web explains the interdisciplinary efforts underway to build a more library-like Web through "semantic knitting." The book examines foundation activities and initiatives leading to standardized semantic metadata. These efforts lead to the Semantic Web—a network able to support computational activities and provide people with services efficiently. Leaders in library and information science, computer science, and information intensive domains provide insight and inspiration to give readers a greater understanding of the evolution of the Semantic Web. Librarians and information professionals are uniquely qualified to play a major role in the development and maintenance of the Semantic Web. Knitting the Semantic Web closely examines this crucial relationship in detail. This single source reviews the foundations, standards, and tools underlying the Semantic Web and presents thoughtful perspectives in the context of 2.0 developments. Many chapters include figures to illustrate concepts and ideas, and the entire text is extensively referenced. Topics in Knitting the Semantic Web include: RDF, its expressive power, and its ability to underlie the new Library catalog card for the coming century the value and application for controlled vocabularies SKOS (Simple Knowledge Organization System), the newest Semantic Web language managing scheme versioning in the Semantic Web Physnet portal service for physics Semantic Web technologies in biomedicine developing the United Nations Food and Agriculture ontology Friend Of A Friend (FOAF) vocabulary specification—with a real world case study at a university Web/Library 2.0 and more Knitting the Semantic Web is a stimulating resource for professionals, researchers, educators, and students in library and information science, computer science, information architecture, Web design, and Web services.

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.

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-interpretability. 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.

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.

The next enterprise computing era will rely on the synergy between both technologies: semantic web and model-driven software development (MDSD). The semantic web organizes system knowledge in conceptual domains according to its meaning. It addresses various enterprise computing needs by identifying, abstracting and rationalizing commonalities, and checking for inconsistencies across system specifications. On the other side, model-driven software development is closing the gap among business requirements, designs and executables by using domain-specific languages with custom-built syntax and semantics. It focuses on using modeling languages as programming languages. Among many areas of application, we highlight the area of configuration management. Consider the example of a telecommunication company, where managing the multiple configurations of network devices (routers, hubs, modems, etc.) is crucial. Enterprise systems identify and document the functional and physical characteristics of network devices, and control changes to those characteristics. Applying the integration of semantic web and model-driven software development allows for (1) explicitly specifying configurations of network devices with tailor-made languages, (2) for checking the consistency of these specifications (3) for defining a vocabulary to share device specifications across enterprise systems. By managing configurations with consistent and explicit concepts, we reduce cost and risk, and enhance agility in response to new requirements in the telecommunication area. This book examines the synergy between semantic web and model-driven software development. It brings together advances from disciplines like ontologies, description logics, domain-specific modeling, model transformation and ontology engineering to take enterprise computing to the next level.

The first clear guide to the Semantic Web and its upcoming impact on the business world Imagine that, in 1992, someone handed you a book about the future of something called the World Wide Web. This book claimed that through a piece of software called a "browser", which accesses "web sites", the world economy and our daily lives would change forever. Would you have believed even 10 percent of that book? Did you take advantage of the first Internet wave and get ahead of the curve? Pull is the blueprint to the next disruptive wave. Some call it Web 3.0; others call it the semantic web. It's a fundamental transition from pushing information to pulling, using a new way of thinking and collaborating online. Using the principles of this book, you will slash 5-20 percent off your bottom line, make your customers happier, accelerate your industry, and prepare your company for the twenty-first century. It isn't going to be easy, and you don't have any choice. By 2015, your company will be more agile and your processes more flexible than you ever thought possible. The semantic web leads to possibilities straight from science fiction, such as buildings that can order their own supplies, eliminating the IRS, and lawyers finally making sense. But it also leads to major changes in every field, from shipping and retail distribution to health care and financial reporting. Through clear examples, case studies, principles, and scenarios, business strategist David Siegel takes you on a tour of this new world. You'll learn: -Which industries are already ahead. -Which industries are already dead. -How to make the power shift from pushing to pulling information. -How software, hardware, media, and marketing will all change. -How to plan your own strategy for embracing the semantic web. We are at the beginning of a new technology curve that will affect all areas of business. Right now, you have a choice. You can decide to start preparing for the exciting opportunities that lay ahead or you can leave this book on the shelf and get left in the dust like last time.

The 4th International Web Rule Symposium (RuleML 2010), co-located in Alexandria, Virginia, USA (near Washington, DC) with the 13th International BusinessRules Forum Conference2010,wasorganizedto meet colleaguesand to exchange ideas from all subareas of Web rule technology. The aims of RuleML 2010 were both to present new and interesting research results and to show s- cessfullydeployedrule-basedapplications. Thisannualsymposiumisthe?agship event of the Rule Markup Language (RuleML) Initiative. The RuleML Initiative (www. ruleml. org) is a non-pro?t umbrella organi- tion of several technical groups organized by representatives from academia, industry and public sectors working on rule technologies and applications. Its aim is to promote the study, research and application of rules in heterogeneous distributedenvironmentssuchastheWeb. RuleMLmaintainse?ectivelinkswith other major international societies and acts as an intermediary between various "specialized" rule vendor, application, industrial and academic research groups, as well as standardization e?orts including W3C, OMG and OASIS. After a series of successful international RuleML workshops and conferences, the RuleML symposia, held since 2007, constitute a new kind of event where the Web rules and logic community joins the established, practically oriented business rules community (www.

businessrulesforum. com). The symposium s- ports the idea that there is a successful path from high-quality research results to deployed applications.

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

Attempts to construct an integrated conceptual framework for the application-neutral and problem-neutral representation of sources of law using Semantic Web technology and concepts and some technically straightforward extensions to Semantic Web technology based on established practices found in fielded applications.

The changes brought about by digital technology and the consequent explosion of information known as Big Data have brought opportunities and challenges in all areas of society, and the law is no exception. This book, Knowledge of the Law in the Big Data Age contains a selection of the papers presented at the conference 'Law via the Internet 2018', held in Florence, Italy, on 11-12 October 2018. This annual conference of the 'Free Access to Law Movement' (http://www.fatlm.org) hosted more than 60 international speakers from universities, government and research bodies as well as EU institutions. Topics covered range from free access to law and Big Data and data analytics in the legal domain, to policy issues concerning access, publishing and the dissemination of legal information, tools to support democratic participation and opportunities for digital democracy. The book is divided into 3 sections: Part I provides an introductory background, covering aspects such as the evolution of legal science and models for representing the law; Part II addresses the present and future of access to law and to various legal information sources; and Part III covers updates in projects, initiatives, and concrete achievements in the field. The book provides an overview of the practical implementation of legal information systems and the tools to manage this special kind of information, as well as some of the critical issues which must be faced, and will be of interest to all those working at the intersection of law and technology.

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.

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 constitutes the refereed proceedings of the First European Semantic Web Symposium, ESWS 2004, held in Heraklion, Crete, Greece in May 2004. The 33 revised full papers presented were carefully reviewed and selected from 79 submissions. The papers are organized in topical sections on ontology engineering, ontology matching and mapping, ontology-based querying, ontology merging and population, infrastructure, semantic web services, service discovery and composition, data from the semantic web, knowledge presentation, applications, content management, and information management and integration.

Information technology has now pervaded the legal sector, and the very modern concepts of e-law and e-justice show that automation processes are ubiquitous. European policies on transparency and

information society, in particular, require the use of technology and its steady improvement. Some of the revised papers presented in this book originate from a workshop held at the European University Institute of Florence, Italy, in December 2006. The workshop was devoted to the discussion of the different ways of understanding and explaining contemporary law, for the purpose of building computable models of it -- especially models enabling the development of computer applications for the legal domain. During the course of the following year, several new contributions, provided by a number of ongoing (or recently finished) European projects on computation and law, were received, discussed and reviewed to complete the survey. This book presents 20 thoroughly refereed revised papers on the hot topics under research in different EU projects: legislative XML, legal ontologies, semantic web, search and meta-search engines, web services, system architecture, dialectic systems, dialogue games, multi-agent systems (MAS), legal argumentation, legal reasoning, e-justice, and online dispute resolution. The papers are organized in topical sections on knowledge representation, ontologies and XML legislative drafting; knowledge representation, legal ontologies and information retrieval; argumentation and legal reasoning; normative and multi-agent systems; and online dispute resolution.

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

The book provides the reader with a unique source regarding the current theoretical landscape in legal ontology engineering as well as on foreseeable future trends for the definition of conceptual structures to enhance the automatic processing and retrieval of legal information in the Semantic Web framework. It will thus interest researchers in the domains of the SW, legal informatics, Artificial Intelligence and law, legal theory and legal philosophy, as well as developers of e-government applications based on the intelligent management of legal or public information to provide both back-office and front-office support.

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 knowled- 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 mul- 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 machi- processable knowledge.

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

Enabling information interoperability, fostering legal knowledge usability and reuse, enhancing legal information search, in short, formalizing the complexity of legal knowledge to enhance legal knowledge management are challenging tasks, for which different solutions and lines of research have been proposed. During the last decade, research and applications based on the use of legal ontologies as a technique to represent legal knowledge has raised a very interesting debate about their capacity and limitations to represent conceptual structures in the legal domain. Making conceptual legal knowledge explicit would support the development of a web of legal knowledge, improve communication, create trust and enable and support open data, e-government and e-democracy activities. Moreover, this explicit knowledge is also relevant to the formalization of software agents and the shaping of virtual institutions and multi-agent systems or environments. This book explores the use of ontologism in legal knowledge representation for semantically-enhanced legal knowledge systems or web-based applications. In it, current methodologies, tools and languages used for ontology development are revised, and the book includes an exhaustive revision of existing ontologies in the legal domain. The development of the Ontology of Professional Judicial Knowledge (OPJK) is presented as a case study.

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.

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.

Looks at how Natural language Processing underpins the Semantic Web, including its initial construction from unstructured sources like the World Wide Web.

This volume constitutes the refereed proceedings of the Second International Conference on Agreement Technologies, AT 2013, held in Beijing, China, in August 2013. The 15 revised full papers presented together with two invited talks were carefully reviewed and selected from numerous submissions and focus on topics such as semantic technologies, normative multiagent systems, virtual organisations and electronic institutions, argumentation and negotiation, trust and reputation, applications of agreement technologies, agreement technologies architectures, environments and methodologies, as well as interdisciplinary foundations of agreement technologies.

Initiatives, such as INSPIRE and the US DHS Geospatial Data Model, are working to develop a rich set of standards that will create harmonized models and themes for the spatial information infrastructure. However, this is only the first step. Semantically meaningful models must still be developed in order to stimulate interoperability. Creating Spatial Information Infrastructures (SII) presents solutions to the problems preventing the launch of a truly effective SII. Leading experts in SII development present a complete overview of SII, including user and application needs, theoretical and technological foundations, and examples of realized working SII's. The book includes semantic applications in each discussion and explains their importance to the future of geo-information standardization. Offering practical solutions to technical and nontechnical obstacles, this book provides the tools needed to take the next step toward a working semantic web—one that will revolutionize the way the world accesses and utilizes spatial

information.