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Semantics Empowered Web 3.0 - Amit Sheth - 2013

After the traditional document-centric Web 1.0 and user-generated content focused Web 2.0, Web 3.0 has become a repository of an ever growing variety of Web resources that include data and services associated with enterprises, social networks, sensors, cloud, as well as mobile and other devices that constitute the Internet of Things. These pose unprecedented challenges in terms of heterogeneity (variety), scale (volume), and continuous changes (velocity), as well as present corresponding opportunities if they can be exploited. Just as semantics has played a critical role in dealing with data heterogeneity in the past to provide interoperability and integration, it is playing an even more critical role in dealing with the challenges and helping users and applications exploit all forms of Web 3.0 data. This book presents a unified approach to harness and exploit all forms of contemporary Web resources using the core principles of ability to associate meaning with data through conceptual or domain models and semantic descriptions including annotations, and through advanced semantic techniques for search, integration, and analysis. It discusses the use of Semantic Web standards and techniques when appropriate, but also advocates the use of lighter weight, easier to use, and more scalable options when they are more suitable. The authors' extensive experience spanning research and prototypes to development of operational applications and commercial technologies and products guide the treatment of the material.

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Semantic Web For Dummies - Jeffrey T. Pollock - 2009-03-30

Semantic Web technology is already changing how we interact with data on the Web. By connecting the Web to the next generation of information technologies, and aspects of the Web. It then discusses semantic modeling and how it can 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.

Emergent Web Intelligence: Advanced Semantic Technologies - Younakim Badr - 2010-06-17

The success of the World Wide Web depends on the ability of users to store, p-cess 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 meaning to web content and enable computerized p-ple 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 -t?cial intelligence approaches to design the next generation of web-empowered systems and services.

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On the Move to Meaningful Internet Systems: OTM 2012 Workshops - Filar Herrero - 2013-01-17

This volume constitutes the refereed proceedings of ten international workshops, OTM Academy, Industry Case Studies Program, EIIN, INBAST, Meta4eS, OnToContent, ORM, SeDeS, SINCOM and SOMOCO 2012, held as part of OTM 2012 in Rome, Italy, in September 2012. The 66 revised full papers presented were carefully reviewed and selected from a total of 127 submissions. The volume also includes 7 papers from the On the Move Academy (OTMA) 2012, 7 papers from the CoopIS 2012 poster papers, 7 papers from the ODBASE 2012 poster papers. The paper cover various aspects of computer supported cooperative work (CSCW), middleware, Internet/Web data management, electronic commerce, enterprise modelling, workflow management, knowledge flow, agent technologies, information retrieval, software architectures, service-oriented computing, and cloud computing.

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Semantic Web For the Working Ontologist - Dean Allemang - 2009-11-30

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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 to managed data, characterized by information sharing, cooperation, and collaboration. It also explains the use of RDF to implement the Semantic Web by allowing 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.

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Cyber Behavior: Concepts, Methodologies, Tools, and Applications - Management Association, Information Resources - 2014-04-30 Following the migration of workflows, data, and communication to the Cloud and other Internet-based frameworks, interaction over the Web has become ever more commonplace. As with any social situation, there are rules and consequences to actions within a virtual environment. Cyber Behavior: Concepts, Methodologies, Tools, and Applications explores the role of cyber space in modern communication and interaction, including considerations of ethics, crime, security, and education.

With chapters on a variety of topics and concerns inherent to a contemporary networked society, this multi-volume work will be of particular interest to students and academicians, as well as software developers, computer scientists, and specialists in the field of Information Technologies.

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The Semantic Web - Michael C. Daconta - 2003-07-07

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Linked Data Visualization - Laura Po - 2023-03-20

Linked Data (LD) is a well-established standard for publishing and managing structured information on the Web, gathering and bridging together knowledge from different scientific and commercial domains. The development of Linked Data Visualization techniques and tools has been adopted as the established practice for the analysis of this vast amount of information by data scientists, domain experts, business users, and citizens.

This book covers a wide spectrum of visualization topics, providing an overview of the recent advances in this area, focusing on techniques, tools, and use cases of visualization and visual analysis of LD. It presents core concepts related to data visualization and LD technologies, techniques employed for data visualization based on the characteristics of data, techniques for Big Data visualization, tools and use cases in the LD context, and, finally, a thorough assessment of the usability of these tools under different scenarios. The purpose of this book is to offer a comprehensive guide to the evolution of LD visualization for interested readers from any background and to empower them to get started with the visual analysis of such data. This book can serve as a course textbook or as a primer for all those interested in LD and data visualization.

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Rule - Based Modeling and Computing on the Semantic Web - Monica Palmirani - 2011-10-14

This book constitutes the refereed proceedings of the International RuleML Symposium, RuleML 2011-America, held in Fort Lauderdale, FL, USA, in November 2011 - collocated with the 22nd International Joint Conference on Artificial Intelligence, IJCAI 2011. It is the second of two RuleML events has been held in Barcelona, Spain, in July 2011. The 12 full papers, 5 short papers and 5 invited track and position papers presented together with 3 keynote speeches were carefully reviewed and selected from numerous submissions. The accepted papers address a wide range of rules, semantic technology, and cross-industry standards, rules and automated reasoning, rule-based event processing and reaction rules, vocabularies, ontologies and business rules, cloud computing and rules, clinical semantics and rules.

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Ontology Management - Martin Hepp - 2007-10-23

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.

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Change Management for Semantic Web Services - Xumin Liu - 2011-03-14

Change Management for Semantic Web Services provides a thorough analysis of change management in the lifecycle of services for databases and workflows, including changes that occur at the individual service level or at the aggregate composed service level. This book describes taxonomy of changes that are expected in semantic service oriented environments. The process of change management consists of detecting, propagating, and reacting to changes. Change Management for Semantic Web Services is one of the first books that discuss the development of a theoretical foundation for managing changes in atomic and long-term composed services. This book also proposes a formal model and a change language to provide sufficient semantics for change management, it devises an automatic process to react to, verify, and optimize changes. Case studies and examples are presented in the last section of this book.

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Artificial Intelligence Technologies and the Evolution of Web 3.0 - Issa, Tomayess - 2015-02-28

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Emerging Web 3.0/Semantic Web Applications in Higher Education -
Charles Wankel - 2015-09-01
The Web is evolving from a place where a prodigious amount of text and
images are stored to a place where educational and other needs are
served. The Web is becoming increasingly automated with functions that
previously required human action undertaken automatically moving
learners and other users more quickly to useful support. More and more
such services interoperate with each other through computer programs and
agents. This is the territory of semantic Web services and Web 3.0. Just as
shop bots and auction bots abound in handling a particular task on the Web
currently, in higher education of the future such related bots and agents
will interact with the heterogeneous information that is the stuff of higher
education. The scale of such agent-based mediation and linked data will
grow over time. Increasingly, intelligent agents and bots will undertake
tasks on behalf of their faculty, administrator, and student owners.
Collaborations among faculty and students around the world will be
increasingly supported by semantic social networks capable of providing
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Semantic Web and Peer-to-Peer - Steffen Staab - 2006-03-28
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 reader for a semantic
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Cloud Enterprise Architecture - Pethuru Raj - 2013-03-21

Cloud Enterprise Architecture examines enterprise architecture (EA) in the context of the surging popularity of Cloud computing. It explains the different kinds of desired transformations the architectural blocks of EA undergo in light of this strategically significant convergence. Chapters cover each of the contributing architectures of EA—business, information, application, integration, security, and strategy—illustrating the current and impending implications of the Cloud on each. Discussing the implications of the Cloud paradigm on EA, the book details the perceptible and positive changes that will affect EA design, governance, strategy, management, and sustenance. The author ties these topics together with chapters on Cloud integration and composition architecture. He also examines the Enterprise Cloud, Federated Clouds, and the vision to establish the InterCloud. Laying out a comprehensive strategy for planning and executing Cloud-inspired transformations, the book: Explains how the Cloud changes and affects enterprise architecture design, governance, strategy, management, and sustenance. Provides detailed information on next-generation Cloud computing Describes additional architectural types such as enterprise-scale integration, security, management, and governance architectures This book is an ideal resource for enterprise architects, Cloud evangelists and enthusiasts, and Cloud application and service architects. Cloud center administrators, Cloud business executives, managers, and analysts will also find the book helpful and inspirational while formulating appropriate mechanisms and schemes for sound modernization and migration of traditional applications to Cloud infrastructures and platforms.

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Information and Communication Technologies in Tourism 2016 - Alessandro Inversini - 2016-01-22

The papers presented in this volume advance the state-of-the-art research on digital marketing and social media, mobile computing and responsive web design, semantic technologies and recommender systems, augmented and virtual reality, electronic distribution and online travel reviews, MOOC and eLearning, eGovernment and sharing economy. This book covers the most significant areas contributed by prominent scholars from around the world and is suitable for both academics and practitioners who are interested in the latest developments in eTourism.

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Learning on Demand - Reuben Tozman - 2012-10-16

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**Perspectives on Information** - Magnus Ramage - 2011-05-09

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**Leveraging Biomedical and Healthcare Data** - Firas Kobeissy - 2018-11-23

Leveraging Biomedical and Healthcare Data: Semantics, Analytics and Knowledge provides an overview of the approaches used in semantic systems biology, introduces novel areas of its application, and describes step-wise protocols for transforming heterogeneous data into useful knowledge that can influence healthcare and biomedical research. Given the astronomical increase in the number of published reports, papers, and datasets over the last few decades, the ability to curate this data has become a new field of biomedical and healthcare research. This book discusses big data text-based mining to better understand the molecular architecture of diseases and to guide health care decision. It will be a valuable resource for bioinformaticians and members of several areas of the biomedical field who are interested in understanding more about how to process and apply great amounts of data to improve their research. Includes at each section resource pages containing a list of available curated raw and processed data that can be used by researchers. Provides a list of relevant examples that serve as a general tutorial Presents a list of algorithm names and computational tools available for basic and clinical researchers

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Provenance in Data Science - Leslie F. Sikos - 2022-04-28
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across multiple application domains, in order to demonstrate how to
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This is important to make statements authoritative, verifiable, and reproducible,
such as in biomedical, pharmaceutical, and cybersecurity applications,
where the data source and generator can be just as important as the data
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The concept of “Web 2.0” began with a conference brainstorming session
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with surprising regularity. What’s more, the companies that had survived
the collapse seemed to have some things in common. Could it be that the
dot-com collapse marked some kind of turning point for the web, such that a
call to action such as “Web 2.0” might make sense? We agreed that it did,
term “Web 2.0” has clearly taken hold, with more than 9.5 million citations
in Google. But there’s still a huge amount of disagreement about just what
Web 2.0 means, with some people decrying it as a meaningless marketing
buzzword, and others accepting it as the new conventional wisdom. This
article is an attempt to clarify just what we mean by Web 2.0.

Managing IoT and Mobile Technologies with Innovation, Trust, and
Sustainable Computing - Kris M. Y. Law - 2021-05-04
Focused on the latest mobile technologies, this book addresses specific
features (such as IoT) and their adoptions that aim to enable excellence in
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The Blockchain and the New Architecture of Trust - Kevin Werbach -
2018-11-20
How the blockchain—a system built on foundations of mutual mistrust—can
become trustworthy. The blockchain, built on open
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and the blockchain need each other. Blockchain systems that ignore law and
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How the blockchain—a system built on foundations of mutual mistrust—can become trustworthy. The blockchain entered the world on January 3, 2009, introducing an innovative new trust architecture: an environment in which users trust a system—for example, a shared ledger of information—without necessarily trusting any of its components. The cryptocurrency Bitcoin is the most famous implementation of the blockchain, but hundreds of other companies have been founded and billions of dollars invested in similar applications since Bitcoin's launch. Some see the blockchain as offering more opportunities for criminal behavior than benefits to society. In this book, Kevin Werbach shows how a technology resting on foundations of mutual mistrust can become trustworthy. The blockchain, built on open software and decentralized foundations that allow anyone to participate, seems like a threat to privacy. In fact, Werbach argues, law and the blockchain need each other. Blockchain systems that ignore law and governance are likely to fail, or to become outlaw technologies irrelevant to the mainstream economy. That, Werbach cautions, would be a tragic waste of potential. If, however, we recognize the blockchain as a kind of legal technology that shapes behavior in new ways, it can be harnessed to create tremendous business and social value.

Semantic Computing - Sheu Phillip Chen-yu - 2012-05-31

As the first volume of World Scientific Encyclopedia with Semantic Computing and Robotic Intelligence, this volume is designed to lay the foundation for the forthcoming of 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, interoperability Understanding 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, reachable with mobile computing, search engines, question answering, web services, to support applications in biomedicine, healthcare, manufacturing, engineering, education, finance, entertainment, business, science and humanity.Mapping 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.

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determine the efficacy of the latest electronic gadgets and mobile devices. Making the most of these technologies—and ensuring their security against potential attackers—requires increased diligence in mobile technology research and development. Mobile Computing and Wireless Networks: Concepts, Methodologies, Tools, and Applications brings together a comprehensive range of voices and research in the area of mobile and wireless technologies, exploring the successes and failures, advantages and drawbacks, and benefits and limitations of the technology. With applications in a plethora of different research and topic areas, this multi-volume reference work benefits researchers, service providers, end-users, and information technology professionals. This four-volume reference work includes a diverse array of chapters and authors covering topics such as m-commerce, network ethics, mobile agent systems, mobile learning, communications infrastructure, and applications in fields such as business, healthcare, government, tourism, and more.

Building Web Applications with UML - Jim Conallen - 2003

Conallen introduces architects and designers and client/server systems to issues and techniques of developing software for the Web. He expects readers to be familiar with object-oriented principles and concepts, particularly with UML (unified modeling language), and at least one Web application architecture or environment. The second edition incorporates both technical developments and his experience since 1999. He does not provide a bibliography. Annotation copyrighted by Book News, Inc., Portland, OR

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VIVO - Katy Börner - 2012

The world of scholarship is changing rapidly. Increasing demands on scholars, the growing size and complexity of questions and problems to be addressed, and advances in sophistication of data collection, analysis, and presentation require new approaches to scholarship. A ubiquitous, open information infrastructure for scholarship: connected, interlinked, open, and interoperable: open-source software tools, and a community committed to sustainability are emerging to meet the needs of scholars today. This book provides an introduction to VIVO, http://vivoweb.org/, a tool for representing information about research and researchers — their scholarly works, research interests, and organizational relationships. VIVO provides an expressive ontology, tools for managing the ontology, and at least one open, software platform for using the ontology to create and manage linked open data for scholarship and discovery. Began as a project at Cornell and further developed by an NIH funded consortium, VIVO is now being established as an open-source project with community participation from around the world. By the end of 2012, over 20 countries and 50 organizations will provide information in VIVO format on more than one million researchers and research staff, including publications, research resources, events, funding, courses taught, and other scholarly activity. The rapid growth of VIVO and of VIVO-compatible data sources speaks to the fundamental need to transform scholarship for the 21st century. Table of Contents: Scholarly Networking Needs and Desires / The VIVO Ontology / Implementing VIVO and Filling It with Life / Case Study: University of Colorado at Boulder / Case Study: Weill...
was selected from 283 submissions. The conference is organized in three tracks: for the Research Track 42 full papers were selected from 194 submissions; the Resource Track contains 21 full papers, selected from 64 submissions; and the In-Use Track features 11 full papers which were selected from 25 submissions to this track. The chapter “The SEPSES knowledge graph: An integrated resource for cybersecurity” is open access under a CC BY 4.0 license at link.springer.com.


The two-volume set of LNCS 11778 and 11779 constitutes the refereed proceedings of the 18th International Semantic Web Conference, ISWC 2019, held in Auckland, New Zealand, in October 2019. The ISWC 2019 conference is the premier international forum for the Semantic Web / Linked Data Community. The total of 74 full papers included in this volume provides a common framework that allows data to be shared and reused across application, enterprise, and community boundaries. This statement clearly explains that the Semantic Web is about data sharing. Currently, the Web uses hyperlinks to connect Web pages. The Semantic Web goes beyond that and focuses on data and envisions the creation of the web of data. On the Semantic Web, anyone can say anything about any resource on the Web. This is fully based on the concept of semantic - notations, where each resource on the Web can have an assigned meaning. This is done through the use of ontologies. Ontologies and their relationships [2]. Ontologies are formally based on description logics. This enables agents and applications to reason over the data when searching the Web, which has not previously been possible. Web 2.0 has gradually evolved from letting the Web users play a more active role. Unlike the initial version of the Web, where the users mainly “consumed” content, they now offer content production and publication. Mashups, blogs, wikis, feeds, interface remixes, and social networking/tagging s-tens are examples of these well-known services. The success and wide adoption of Web 2.0 was in its reliance on social interactions as an inevitable characteristic of the use and life of the Web. In particular, Web 2.

**Web 2.0 & Semantic Web** - Vladan Devedžić - 2010-01-08

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continuously improving the business process and business policies leads to the development of a common language between business and IT. The book concludes by expanding on these concepts and delving into the societal and behavioral aspects of the Service Oriented Enterprise. The reality of business is no longer one where change is an unusual phenomenon; today change is the norm and the capacity for consumer-sensitive, fluid transition is vital to business survival. Service Oriented Enterprises provides the key concepts to facilitate that change.