

Graph Based Knowledge Representation Computational Foundations Of Conceptual Graphs Advanced Information And Knowledge Processing

Yeah, reviewing a books **Graph Based Knowledge Representation Computational Foundations Of Conceptual Graphs Advanced Information And Knowledge Processing** could amass your close contacts listings. This is just one of the solutions for you to be successful. As understood, triumph does not recommend that you have astounding points.

Comprehending as skillfully as union even more than further will have the funds for each success. next to, the pronouncement as competently as perspicacity of this Graph Based Knowledge Representation Computational Foundations Of Conceptual Graphs Advanced Information And Knowledge Processing can be taken as with ease as picked to act.

Research and Development in Intelligent Systems XXIX -
Max Bramer 2012-10-30

The papers in this volume are the refereed papers presented

at AI-2012, the Thirty-second SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence, held in Cambridge

in December 2012 in both the technical and the application streams. They present new and innovative developments and applications, divided into technical stream sections on Data Mining, Data Mining and Machine Learning, Planning and Optimisation, and Knowledge Management and Prediction, followed by application stream sections on Language and Classification, Recommendation, Practical Applications and Systems, and Data Mining and Machine Learning. The volume also includes the text of short papers presented as posters at the conference. This is the twenty-ninth volume in the Research and Development in Intelligent Systems series, which also incorporates the twentieth volume in the Applications and Innovations in Intelligent Systems series. These series are essential reading for those who wish to keep up to date with developments in this important field.

Intelligent Systems -
Vladimir M. Koleshko

2012-03-02

This book is dedicated to intelligent systems of broad-spectrum application, such as personal and social biosafety or use of intelligent sensory micro-nanosystems such as "e-nose", "e-tongue" and "e-eye". In addition to that, effective acquiring information, knowledge management and improved knowledge transfer in any media, as well as modeling its information content using meta-and hyper heuristics and semantic reasoning all benefit from the systems covered in this book. Intelligent systems can also be applied in education and generating the intelligent distributed eLearning architecture, as well as in a large number of technical fields, such as industrial design, manufacturing and utilization, e.g., in precision agriculture, cartography, electric power distribution systems, intelligent building management systems, drilling operations etc. Furthermore, decision making using fuzzy logic models, computational

recognition of comprehension uncertainty and the joint synthesis of goals and means of intelligent behavior biosystems, as well as diagnostic and human support in the healthcare environment have also been made easier.

Artificial Intelligence in Education. Posters and Late Breaking Results, Workshops and Tutorials, Industry and Innovation Tracks, Practitioners' and Doctoral Consortium - Maria Mercedes Rodrigo 2022-08-26

This two-volume set LNAI 13355 and 13356 constitutes the refereed proceedings of the 23rd International Conference on Artificial Intelligence in Education, AIED 2022, held in Durham, UK, in July 2022. The 40 full papers and 40 short papers presented together with 2 keynotes, 6 industry papers, 12 DC papers, 6 Workshop papers, 10 Practitioner papers, 97 Posters and Late-Breaking Results were carefully reviewed and selected from 243 submissions. The conference presents topics such as intelligent systems and

the cognitive sciences for the improvement and advancement of education, the science and engineering of intelligent interactive learning systems. The theme for the AIED 2022 conference was „AI in Education: Bridging the gap between academia, business, and non-profit in preparing future-proof generations towards ubiquitous AI."

New Frontiers in Graph Theory - Yagang Zhang
2012-03-02

Nowadays, graph theory is an important analysis tool in mathematics and computer science. Because of the inherent simplicity of graph theory, it can be used to model many different physical and abstract systems such as transportation and communication networks, models for business administration, political science, and psychology and so on. The purpose of this book is not only to present the latest state and development tendencies of graph theory, but to bring the reader far enough along the way to enable him to

embark on the research problems of his own. Taking into account the large amount of knowledge about graph theory and practice presented in the book, it has two major parts: theoretical researches and applications. The book is also intended for both graduate and postgraduate students in fields such as mathematics, computer science, system sciences, biology, engineering, cybernetics, and social sciences, and as a reference for software professionals and practitioners.

Wikibook of Health Informatics -

The Semantic Web - Eva Blomqvist 2017-05-15

The two volumes LNCS 10249 and 10250 constitute the refereed proceedings of the 14th International Semantic Web Conference, ESWC 2017, held in Portorož, Slovenia. The 51 revised full papers presented were carefully reviewed and selected from 183 submissions. In addition, 10 PhD papers are included, selected out of 14 submissions.

The papers are organized in the following tracks: semantic data management, big data, and scalability; linked data; machine learning; mobile web, sensors, and semantic streams; natural language processing and information retrieval; vocabularies, schemas, and ontologies; reasoning; social web and web science; semantic web and transparency; in use and industrial track; and PhD symposium. The paper 'Linked Data Notifications: A Resource-Centric Communication Protocol' is published open access under a CC BY 4.0 license at link.springer.com.

Conceptual Structures in Practice - Pascal Hitzler 2016-04-19

Exploring fundamental research questions, *Conceptual Structures in Practice* takes you through the basic yet nontrivial task of establishing conceptual relations as the foundation for research in knowledge representation and knowledge mining. It includes contributions from leading researchers in both the conceptual graph and formal

concept analysis (FCA) communities. This accessible, self-contained book begins by providing the formal background in FCA and conceptual graphs. It then describes various software tools for analysis and computation, including the ToscanaJ suite. Written by the original visionaries of the field, the next section discusses the history and future directions of conceptual structures. The final chapters explore prominent application areas in computer science, including text analysis, web semantics, and intelligent systems. An unprecedented, state-of-the-art overview from innovators in the field, this volume discusses how FCA and conceptual graphs can be used in many computer science areas. It serves as a benchmark of research on conceptual structures, inspiring further exploration in this discipline.

Conceptual Structures: From Information to Intelligence - Madalina Croitoru 2010-07-30

The 18 International Conference on Conceptual

Structures (ICCS 2010) was the latest in a series of annual conferences that have been held in Europe, Australia, and North America since 1993. The focus of the conference has been the representation and analysis of conceptual knowledge for research and practical application. ICCS brings together researchers and practitioners in information and computer sciences as well as social science to explore novel ways that conceptual structures can be deployed. Arising from the research on knowledge representation and reasoning with conceptual graphs, over the years ICCS has broadened its scope to include innovations from a wider range of theories and related practices, among them other forms of graph-based reasoning systems like RDF or existential graphs, formal concept analysis, Semantic Web technologies, ontologies, concept mapping and more. Accordingly, ICCS represents a family of approaches related to conceptual structures that build

on the successes with techniques derived from artificial intelligence, knowledge representation and reasoning, applied mathematics and lattice theory, computational linguistics, conceptual modeling and design, d-grammatic reasoning and logic, intelligent systems and knowledge management. The ICCS 2010 theme "From Information to Intelligence" hints at unveiling the reasoning capabilities of conceptual structures. Indeed, improvements in storage capacity and performance of computing infrastructure have also affected the nature of knowledge representation and reasoning (KRR) systems, shifting their focus toward representational power and execution performance. Therefore, KRR research is now faced with a challenge of developing knowledge representation and reasoning structures optimized for such reasonings.

Graph-Based Representation and Reasoning - Ollivier Haemmerlé 2016-06-10

This book constitutes the proceedings of the 22th International Conference on Conceptual Structures, ICCS 2016, held in Annecy, France, in July 2016. The 14 full papers and 5 short papers presented in this volume were carefully reviewed and selected from 40 submissions. They are organized around the following topical sections: time representation; graphs and networks; formal concept analysis; ontologies and linked data.

Conceptual Structures for Discovering Knowledge -

Simon Andrews 2011-07-18

This book constitutes the proceedings of the 19th International Conference on Conceptual Structures, ICCS 2011, held in Derby, UK, in July 2011. The 18 full papers and 4 short papers presented together with 12 workshop papers were carefully reviewed and selected for inclusion in the book. The volume also contains 3 invited talks. ICCS focuses on the useful representation and analysis of conceptual knowledge with

research and business applications. It advances the theory and practice in connecting the user's conceptual approach to problem solving with the formal structures that computer applications need to bring their productivity to bear. Conceptual structures (CS) represent a family of approaches that builds on the successes of artificial intelligence, business intelligence, computational linguistics, conceptual modelling, information and Web technologies, user modelling, and knowledge management. Two of the workshops contained in this volume cover CS and knowledge discovery in under-traversed domains and in task specific information retrieval. The third addresses CD in learning, teaching and assessment.

Conceptual Graphs and Fuzzy Logic - Tru Hoang Cao
2010-07-17

In this volume, first we formulate a framework of fuzzy types to represent both partial

truth and uncertainty about concept and relation types in conceptual graphs. Like fuzzy attribute values, fuzzy types also form a lattice laying a common ground for lattice-based computation of fuzzy granules. Second, for automated reasoning with fuzzy conceptual graphs, we develop foundations of order-sorted fuzzy set logic programming, extending the theory of annotated logic programs of Kifer and Subrahmanian (1992). Third, we show some recent applications of fuzzy conceptual graphs to modelling and computing with generally quantified statements, approximate knowledge retrieval, and natural language query understanding.

Enterprise Information Systems - Slimane Hammoudi
2014-07-24

This book contains substantially extended and revised versions of the best papers from the 15th International Conference on Enterprise Information Systems, ICEIS 2013, held in

Angers, France, in July 2013. The 29 full and two invited papers included in this volume were carefully reviewed and selected from 321 submissions. They reflect state-of-the-art research focusing mainly on real-world applications and highlight the benefits of information systems and technology for industry and services, thus connecting academia with the world of real enterprises. The topics covered are: databases and information systems integration, artificial intelligence and decision support systems, information systems analysis and specification, software agents and Internet computing, human-computer interaction, and enterprise architecture.

**Conceptual Structures:
Leveraging Semantic
Technologies** - Sebastian

Rudolph 2009-07-25
This book constitutes the refereed proceedings of the 17th International Conference on Conceptual Structures, ICCS 2009, which took place in Moscow, Russia, on July 26-31, 2009. The 18 papers presented

together with 5 invited contributions were carefully reviewed and selected from approximately 50 submissions. Originally centered around research on knowledge representation and reasoning with conceptual graphs, over the years ICCS has broadened its scope to include innovations from a wider range of theories and related practices, among them other forms of graph-based formalisms like RDF or existential graphs, formal concept analysis, semantic Web technologies, ontologies, concept mapping and more. [Digital Knowledge Maps in Education](#) - Dirk Ifenthaler 2013-11-01

Digital knowledge maps are 'at a glance' visual representations that enable enriching, imaginative and transformative ways for teaching and learning, with the potential to enhance positive educational outcomes. The use of such maps has generated much attention and interest among tertiary education practitioners and researchers over the last few years as higher education

institutions around the world begin to invest heavily into new technologies designed to provide online spaces within which to build resources and conduct activities. The key elements of this edited volume will comprise original and innovative contributions to existing scholarship in this field, with examples of pedagogical possibilities as they are currently practiced across a range of contexts. It will contain chapters that address, theory, research and practical issues related to the use of digital knowledge maps in all aspects of tertiary education and draws predominantly on international perspectives with a diverse group of invited contributors. Reports on empirical studies as well as theoretical/conceptual chapters that engage deeply with pertinent questions and issues raised from a pedagogical, social, cultural, philosophical, and/or ethical standpoint are included. Systematic literature reviews dealing with digital knowledge mapping in education are also

an integral part of the volume. Fusion Methodologies in Crisis Management - Galina Rogova
2016-01-21

The book emphasizes a contemporary view on the role of higher level fusion in designing crisis management systems, and provide the formal foundations, architecture and implementation strategies required for building dynamic current and future situational pictures, challenges of, and the state of the art computational approaches to designing such processes. This book integrates recent advances in decision theory with those in fusion methodology to define an end-to-end framework for decision support in crisis management. The text discusses modern fusion and decision support methods for dealing with heterogeneous and often unreliable, low fidelity, contradictory, and redundant data and information, as well as rare, unknown, unconventional or even unimaginable critical situations. Also the book

examines the role of context in situation management, cognitive aspects of decision making and situation management, approaches to domain representation, visualization, as well as the role and exploitation of the social media. The editors include examples and case studies from the field of disaster management.

Declarative Agent Languages and Technologies VIII - Andrea Omicini 2011-04-08

This book constitutes the thoroughly refereed post-workshop proceedings of the 8th International Workshop on Declarative Agent Languages and Technologies, DALT 2010, held in Toronto, Canada, on May 10, 2010, as a satellite workshop of the 9th International Joint Conference on Autonomous Agents and Multiagent Systems, AAMAS 2010. The 7 revised full papers presented together with 4 invited lectures were carefully selected during two rounds of reviewing and improvement from 24 initial submissions. DALT aims to make formal

methods and declarative technologies and approaches available to and understood by a broader segment of the multi-agent research community; the papers are organized in topical sections on BDI rational agents, communication, coordination and negotiation, as well as social aspects and control systems.

Knowledge Representation - John F. Sowa 2000

Drawing from a wide range of disciplines, this book integrates logic, philosophy, linguistics and computer science into this important new book. Written by a leading researcher in knowledge representation, this definitive work is designed for researchers in computer science with knowledge of artificial intelligence as a prerequisite.

Provenance in Data Science - Leslie F. Sikos 2021-04-26
RDF-based knowledge graphs require additional formalisms to be fully context-aware, which is presented in this book. This book also provides a collection of provenance techniques and state-of-the-art

metadata-enhanced, provenance-aware, knowledge graph-based representations across multiple application domains, in order to demonstrate how to combine graph-based data models and provenance representations. 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 itself. Capturing provenance is critical to ensure sound experimental results and rigorously designed research studies for patient and drug safety, pathology reports, and medical evidence generation. Similarly, provenance is needed for cyberthreat intelligence dashboards and attack maps that aggregate and/or fuse heterogeneous data from disparate data sources to differentiate between unimportant online events and dangerous cyberattacks, which is demonstrated in this book.

Without provenance, data reliability and trustworthiness might be limited, causing data reuse, trust, reproducibility and accountability issues. This book primarily targets researchers who utilize knowledge graphs in their methods and approaches (this includes researchers from a variety of domains, such as cybersecurity, eHealth, data science, Semantic Web, etc.). This book collects core facts for the state of the art in provenance approaches and techniques, complemented by a critical review of existing approaches. New research directions are also provided that combine data science and knowledge graphs, for an increasingly important research topic.

[Advances in Knowledge-Based and Intelligent Information and Engineering Systems](#) - Manuel Graña 2012

In this 2012 edition of [Advances in Knowledge-Based and Intelligent Information and Engineering Systems](#) the latest innovations and advances in Intelligent Systems and related

areas are presented by leading experts from all over the world. The 228 papers that are included cover a wide range of topics. One emphasis is on Information Processing, which has become a pervasive phenomenon in our civilization. While the majority of Information Processing is becoming intelligent in a very broad sense, major research in Semantics, Artificial Intelligence and Knowledge Engineering supports the domain specific applications that are becoming more and more present in our everyday living. Ontologies play a major role in the development of Knowledge Engineering in various domains, from Semantic Web down to the design of specific Decision Support Systems. Research on Ontologies and their applications is a highly active front of current Computational Intelligence science that is addressed here. Other subjects in this volume are modern Machine Learning, Lattice Computing and Mathematical Morphology. The wide scope

and high quality of these contributions clearly show that knowledge engineering is a continuous living and evolving set of technologies aimed at improving the design and understanding of systems and their relations with humans.

Intelligent Decision

Technologies 2016 - Ireneusz Czarnowski 2016-06-13

The KES-IDT-2016 proceedings give an excellent insight into recent research, both theoretical and applied, in the field of intelligent decision making. The range of topics explored is wide, and covers methods of grouping, classification, prediction, decision support, modelling and many more in such areas as finance, linguistics, medicine, management and transportation. This proceedings contain several sections devoted to specific topics, such as: · Specialized Decision Techniques for Data Mining, Transportation and Project Management · Pattern Recognition for Decision Making Systems · New Advances of Soft Computing in

Industrial and Management Engineering · Recent Advances in Fuzzy Systems · Intelligent Data Analysis and Applications · Reasoning-based Intelligent Systems · Intelligent Methods for Eye Movement Data Processing and Analysis · Intelligent Decision Technologies for Water Resources Management · Intelligent Decision Making for Uncertain Unstructured Big Data · Decision Making Theory for Economics · Interdisciplinary Approaches in Business Intelligence Research and Practice · Pattern Recognition in Audio and Speech Processing

The KES-IDT conference is a well-established international annual conference, interdisciplinary in nature. These two volumes of proceedings form an excellent account of the latest results and outcomes of recent research in this leading-edge area.

Intelligent Distributed Computing X - Costin Badica
2016-10-07

This book presents the

combined peer-reviewed proceedings of the tenth International Symposium on Intelligent Distributed Computing (IDC'2016), which was held in Paris, France from October 10th to 12th, 2016. The 23 contributions address a range of topics related to theory and application of intelligent distributed computing, including: Intelligent Distributed Agent-Based Systems, Ambient Intelligence and Social Networks, Computational Sustainability, Intelligent Distributed Knowledge Representation and Processing, Smart Networks, Networked Intelligence and Intelligent Distributed Applications, amongst others.

Creating a More Transparent Internet - Piek Vossen
2022-05-05

On social media, new forms of communication arise rapidly, many of which are intense, dispersed, and create new communities at a global scale. Such communities can act as distinct information bubbles with their own perspective on

the world, and it is difficult for people to find and monitor all these perspectives and relate the different claims made. Within this digital jungle of perspectives on truth, it is difficult to make informed decisions on important things like vaccinations, democracy, and climate change. Understanding and modeling this phenomenon in its full complexity requires an interdisciplinary approach, utilizing the ample data provided by digital communication to offer new insights and opportunities. This interdisciplinary book gives a comprehensive view on social media communication, the different forms it takes, the impact and the technology used to mine it, and defines the roadmap to a more transparent Web.

Knowledge Management -

Shaofeng Liu 2020-01-03

As knowledge economies become increasingly important around the world, it is essential that organizations are able to transform their knowledge into a competitive advantage. This

textbook offers an interdisciplinary approach to knowledge management written specifically for postgraduate students in business and management schools. Knowledge Management presents classic and advanced concepts, models and frameworks using a clear logical structure, which covers building knowledge competence, the knowledge lifecycle, and integration of knowledge management with business decision making. An overall framework illustrates links between chapters and ensures readers can gain a body of actionable knowledge rather than learning isolated, uncontextualized topics. Based on cutting-edge research findings and covering the most advanced IT and IS technologies, this book emphasises the need for knowledge management to span boundaries across organizations, supply chains and partnerships, rather than being limited to individual learning and sharing within businesses. Knowledge

Management is international in scope and includes real world case studies and role play scenarios to show how theories are applied in practice, and "think back" and "critique discussion" questions to encourage reflective learning and critical thinking. This indispensable text provides a dynamic picture of the evolution of knowledge management and demonstrates its full potential to enable better business decisions. Accompanying online resources include PowerPoint slides for lecturers and exercise questions for students.

Linguistic Perspectives on the Construction of Meaning and Knowledge -

Elke Diedrichsen 2019-09-24
This book is an exploration of the dimensions of meaning in language from several important perspectives that are of major interest to scholars today, bringing together studies from the realms of linguistic pragmatics, semantics, ontological knowledge engineering, and computational linguistics.

Situated within modern functional-cognitive constructional-ontological and computational paradigms, the analyses here are supported by authentic language data, including corpus data, from a rich set of languages. Context and situation play an important but complex role in meaning elaboration. The role of context and situation is elusive and has proved difficult to elucidate with respect to meaning and knowledge representation. This volume provides evidence of the nature of the, often rapid, emergence of meaning in the digital world of the internet, social media, and Internet memes. The use of computational avatars and the rise of human language technologies, including big data and digital corpora, have made the construction of meaning and human language understanding essential to the work of linguists, cognitive scientists and computer scientists who are increasingly working together in collaborative teams to share insights.

Intelligent Processing Practices and Tools for E-Commerce Data, Information, and Knowledge

- Honghao Gao 2021-11-30

This book discusses recent research and applications about intelligent processing practices and tools for e-commerce data, information and knowledge. The authors first explain how advances in intelligent processing of data, information and knowledge that has wildly been used in e-commerce applications. They then show how this brings new opportunities and challenges for processing e-commerce data, information and knowledge. The book, made up of contributions from both academia and industry, aims to present advances in artificial intelligence to collect, process, and mining Data, information and knowledge, such as new algorithms and techniques in the field, foundational theory and systems, as well as practical e-commerce applications. Some of the topics discussed include AI for e-commerce, such as machine

learning, deep learning; personalized service recommendation to e-commerce; modeling, description, and verification for data, information and knowledge; and task scheduling and performance optimization for large-scale concurrency.

Graph-Based Representation and Reasoning - Tanya Braun 2021-10-19

This book constitutes the proceedings of the 26th International Conference on Conceptual Structures, ICCS 2021, held virtually in September 2021. The 12 full papers and 4 short papers presented were carefully reviewed and selected from 25 submissions. The papers focus on the representation of and reasoning with conceptual structures in a variety of contexts. The papers are organized in the following topical sections: applications of conceptual structures; theory on conceptual structures, and mining conceptual structures.

Graph-Based

Representation and Reasoning - Nathalie

Hernandez 2014-07-17

This book constitutes the proceedings of the 21st International Conference on Conceptual Structures, ICCS 2014, held in Iași, Romania, in July 2014. The 17 regular papers and 6 short papers presented in this volume were carefully reviewed and selected from 40 and 10 submissions, respectively. The topics covered are: conceptual structures, knowledge representation, reasoning, conceptual graphs, formal concept analysis, semantic Web, information integration, machine learning, data mining and information retrieval.

Advances in Computational Intelligence - Ildar Batyrshin
2013-03-21

The two-volume set LNAI 7629 and LNAI 7630 constitutes the refereed proceedings of the 11th Mexican International Conference on Artificial Intelligence, MICAI 2012, held in San Luis Potosí, Mexico, in October/November 2012. The 80 revised papers presented

were carefully reviewed and selected from 224 submissions. The second volume includes 40 papers focusing on soft computing. The papers are organized in the following topical sections: natural language processing; evolutionary and nature-inspired metaheuristic algorithms; neural networks and hybrid intelligent systems; fuzzy systems and probabilistic models in decision making.

A Guided Tour of Artificial Intelligence Research - Pierre Marquis 2020-05-08

The purpose of this book is to provide an overview of AI research, ranging from basic work to interfaces and applications, with as much emphasis on results as on current issues. It is aimed at an audience of master students and Ph.D. students, and can be of interest as well for researchers and engineers who want to know more about AI. The book is split into three volumes: - the first volume brings together twenty-three chapters dealing with the foundations of knowledge

representation and the formalization of reasoning and learning (Volume 1. Knowledge representation, reasoning and learning) - the second volume offers a view of AI, in fourteen chapters, from the side of the algorithms (Volume 2. AI Algorithms) - the third volume, composed of sixteen chapters, describes the main interfaces and applications of AI (Volume 3. Interfaces and applications of AI). This third volume is dedicated to the interfaces of AI with various fields, with which strong links exist either at the methodological or at the applicative levels. The foreword of this volume reminds us that AI was born for a large part from cybernetics. Chapters are devoted to disciplines that are historically sisters of AI: natural language processing, pattern recognition and computer vision, and robotics. Also close and complementary to AI due to their direct links with information are databases, the semantic web, information retrieval and human-computer interaction. All these

disciplines are privileged places for applications of AI methods. This is also the case for bioinformatics, biological modeling and computational neurosciences. The developments of AI have also led to a dialogue with theoretical computer science in particular regarding computability and complexity. Besides, AI research and findings have renewed philosophical and epistemological questions, while their cognitive validity raises questions to psychology. The volume also discusses some of the interactions between science and artistic creation in literature and in music. Lastly, an epilogue concludes the three volumes of this Guided Tour of AI Research by providing an overview of what has been achieved by AI, emphasizing AI as a science, and not just as an innovative technology, and trying to dispel some misunderstandings.

Symbolic and Quantitative Approaches to Reasoning with Uncertainty - Jiřina

Vejnarová 2021-09-21

This book constitutes the refereed proceedings of the 16th European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty, ECSQARU 2021, held in Prague, Czech Republic, in September 2021. The 48 full papers presented in this volume were carefully reviewed and selected from 63 submissions. The papers are organized in topical sections about argumentation and analogical reasoning, Bayesian networks and graphical models, belief functions, imprecise probability, inconsistency handling and preferences, possibility theory and fuzzy approaches, and probability logic.

Graph Structures for Knowledge Representation and Reasoning - Madalina

Croitoru 2012-05-27

This book constitutes the thoroughly refereed post-conference proceedings of the Second International Workshop on Graph Structures for Knowledge Representation and Reasoning, GKR 2011, held in

Barcelona, Spain, in July 2011 as satellite event of IJCAI 2011, the 22nd International Joint Conference on Artificial Intelligence. The 7 revised full papers presented together with 1 invited paper were carefully reviewed and selected from 12 submissions. The papers feature current research involved in the development and application of graph-based knowledge representation formalisms and reasoning techniques and investigate further developments of knowledge representation and reasoning graph based techniques. Topics addressed are such as: bayesian networks, semantic networks, conceptual graphs, formal concept analysis, cp-nets, gainets, euler diagrams, existential graphs all of which have been successfully used in a number of applications (semantic Web, recommender systems, bioinformatics etc.).

The Semantic Web - ISWC 2017 - Claudia d'Amato
2017-10-11

The two-volume set LNCS 10587 + 10588 constitutes the

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

Computer Science -

Enablers for Smart Cities -

Amal El Fallah Seghrouchni
2016-07-18

Smart cities are a new vision for urban development. They integrate information and communication technology infrastructures - in the domains of artificial intelligence, distributed and cloud computing, and sensor networks - into a city, to facilitate quality of life for its citizens and sustainable growth. This book explores

various concepts for the development of these new technologies (including agent-oriented programming, broadband infrastructures, wireless sensor networks, Internet-based networked applications, open data and open platforms), and how they can provide smart services and enablers in a range of public domains. The most significant research, both established and emerging, is brought together to enable academics and practitioners to investigate the possibilities of smart cities, and to generate the knowledge and solutions required to develop and maintain them.

Foundations of Intelligent Systems -

Marzena Kryszkiewicz
2017-06-19

This book constitutes the proceedings of the 23rd International Symposium on Foundations of Intelligent Systems, ISMIS 2017, held in Warsaw, Poland, in June 2017. The 56 regular and 15 short papers presented in this volume were carefully reviewed and selected from 118 submissions. The papers

include both theoretical and practical aspects of machine learning, data mining methods, deep learning, bioinformatics and health informatics, intelligent information systems, knowledge-based systems, mining temporal, spatial and spatio-temporal data, text and Web mining. In addition, four special sessions were organized; namely, Special Session on Big Data Analytics and Stream Data Mining, Special Session on Granular and Soft Clustering for Data Science, Special Session on Knowledge Discovery with Formal Concept Analysis and Related Formalisms, and Special Session devoted to ISMIS 2017 Data Mining Competition on Trading Based on Recommendations, which was launched as a part of the conference.

Knowledge Graphs - Aidan Hogan 2021-11-08

This book provides a comprehensive and accessible introduction to knowledge graphs, which have recently garnered notable attention from both industry and

academia. Knowledge graphs are founded on the principle of applying a graph-based abstraction to data, and are now broadly deployed in scenarios that require integrating and extracting value from multiple, diverse sources of data at large scale. The book defines knowledge graphs and provides a high-level overview of how they are used. It presents and contrasts popular graph models that are commonly used to represent data as graphs, and the languages by which they can be queried before describing how the resulting data graph can be enhanced with notions of schema, identity, and context. The book discusses how ontologies and rules can be used to encode knowledge as well as how inductive techniques—based on statistics, graph analytics, machine learning, etc.—can be used to encode and extract knowledge. It covers techniques for the creation, enrichment, assessment, and refinement of knowledge graphs and surveys recent

open and enterprise knowledge graphs and the industries or applications within which they have been most widely adopted. The book closes by discussing the current limitations and future directions along which knowledge graphs are likely to evolve. This book is aimed at students, researchers, and practitioners who wish to learn more about knowledge graphs and how they facilitate extracting value from diverse data at large scale. To make the book accessible for newcomers, running examples and graphical notation are used throughout. Formal definitions and extensive references are also provided for those who opt to delve more deeply into specific topics.

The Age of Artificial Intelligence: An Exploration

- Steven S. Gouveia 2020-07-07
With worldwide spending estimates of over \$97 billion by 2023, it is no surprise that Artificial Intelligence (A.I.) is one of the hottest topics at present in both the private and

public spheres. Comprising of vital contributions from the most influential researchers in the field, including Daniel Dennett, Roman V. Yampolskiy, Frederic Gilbert, Stevan Harnad, David Pearce, Natasha Vita-More, Vernon Vinge and Ben Goertzel, 'The Age of Artificial Intelligence: An Exploration' discusses a variety of topics ranging from the various ethical issues associated with A.I. based technologies in terms of morality and law to subjects related to artificial consciousness, artistic creativity and intelligence. The volume is organized as follows: Section I is dedicated to reflections on the Intelligence of A.I., with chapters by Soenke Ziesche and Roman V. Yampolskiy, Stevan Harnad, Daniel Dennett and David Pearce. Next, Section II discusses the relationship between consciousness, simulation and artificial intelligence, with chapters by Gabriel Axel Montes and Ben Goertzel, Cody Turner, Nicole Hall and Steven S. Gouveia.

Section III, dedicated to aesthetical creativity and language in artificial intelligence, includes chapters by Caterina Moruzzi, René Mogensen, Mariana Chinellato Ferreira and Kulvinder Panesar. The subsequent Section IV is on the Ethics of the Bionic Brain with the participation of Peter A. DePergola II, Tomislav Miletić and Frederic Gilbert, Aníbal M. Astobiza, Txetxu Ausin, Ricardo M. Ferrer and Stephen Rainey and Natasha Vita-More. Finally, Section V follows on the Ethics of Artificial Intelligence with chapters by Federico Pistono and Roman V. Yamploskiy, Hasse Hämäläinen, Vernon Vinge and Eray Özkural. The Age of Artificial Intelligence is imminent, if not here already. We should ensure that we invest in the right people and the right ideas to create the best possible solutions to the problems of the present and prepare for those of the future. This edited volume will be of particular interest to researchers in the field of A.I.

as well of those in Cognitive Science (Philosophy of the Mind, Neuroscience, and Linguistics), Aesthetics and Arts, Applied Ethics and Political Philosophy / Law. Students studying the aforementioned topics can also benefit from its contents.

Knowledge Graph and Semantic Computing. Language, Knowledge, and Intelligence - Juanzi Li

2018-01-18

This book constitutes the refereed proceedings of the Second China Conference on Knowledge Graph and Semantic Computing, CCKS 2017, held in Chengdu, China, in August 2017. The 11 revised full papers and 6 revised short papers presented were carefully reviewed and selected from 85 submissions. The papers cover wide research fields including the knowledge graph, the Semantic Web, linked data, NLP, knowledge representation, graph databases.

Graph-based Knowledge Representation - Michel Chein
2008-10-20

This book provides a definition and study of a knowledge representation and reasoning formalism stemming from conceptual graphs, while focusing on the computational properties of this formalism. Knowledge can be symbolically represented in many ways. The knowledge representation and reasoning formalism presented here is a graph formalism - knowledge is represented by labeled graphs, in the graph theory sense, and reasoning mechanisms are based on graph operations, with graph homomorphism at the core. This formalism can thus be considered as related to semantic networks. Since their conception, semantic networks have faded out several times, but have always returned to the limelight. They faded mainly due to a lack of formal semantics and the limited reasoning tools proposed. They have, however, always rebounded - cause labeled graphs, schemas and drawings provide an intuitive and easily understandable support to represent knowledge. This

formalism has the visual qualities of any graphic model, and it is logically founded. This is a key feature because logics has been the foundation for knowledge representation and reasoning for millennia. The authors also focus substantially on computational facets of the presented formalism as they are interested in knowledge representation and reasoning formalisms upon which knowledge-based systems can be built to solve real problems. Since object structures are graphs, naturally graph homomorphism is the key underlying notion and, from a computational viewpoint, this moors calculus to combinatorics and to computer science domains in which the algorithmic qualities of graphs have long been studied, as in databases and constraint networks.

Knowledge Graphs for eXplainable Artificial Intelligence: Foundations, Applications and Challenges
- I. Tiddi 2020-05-06

The latest advances in Artificial Intelligence and (deep) Machine Learning in particular

revealed a major drawback of modern intelligent systems, namely the inability to explain their decisions in a way that humans can easily understand. While eXplainable AI rapidly became an active area of research in response to this need for improved understandability and trustworthiness, the field of Knowledge Representation and Reasoning (KRR) has on the other hand a long-standing tradition in managing information in a symbolic, human-understandable form. This book provides the first comprehensive collection of research contributions on the role of knowledge graphs for eXplainable AI (KG4XAI), and the papers included here present academic and industrial research focused on the theory, methods and

implementations of AI systems that use structured knowledge to generate reliable explanations. Introductory material on knowledge graphs is included for those readers with only a minimal background in the field, as well as specific chapters devoted to advanced methods, applications and case-studies that use knowledge graphs as a part of knowledge-based, explainable systems (KBX-systems). The final chapters explore current challenges and future research directions in the area of knowledge graphs for eXplainable AI. The book not only provides a scholarly, state-of-the-art overview of research in this subject area, but also fosters the hybrid combination of symbolic and subsymbolic AI methods, and will be of interest to all those working in the field.