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KEY=MODELLING - GRANT MAGDALENA

LEGAL KNOWLEDGE ENGINEERING

A MODELLING APPROACH

Ios PressInc **Although the field of Artificial Intelligence and Law has matured considerably, there is still no comprehensive view on the field, its achievements, and no agenda or clear direction for research. Moreover, present approaches to the development of legal knowledge-based systems (LKBS) - such as the use of rule-based systems, case-based systems, or logics - have obtained somewhat limited theoretical and practical results. This book provides a critical overview of the field by describing present approaches and analysing their problems in detail. A new "modelling approach'' to legal knowledge engineering is proposed to address these problems and provide an agenda for research and development. This approach applies recent developments in knowledge modelling to the law domain. The book's central premise, that the development of LK BS should be centred on the elaboration of explicit models of law, is well demonstrated, it is an extremely worthwhile read for anyone interested in the theoretical foundations of AI and law and knowledge representation in particular.**

LEGAL ONTOLOGY ENGINEERING

METHODOLOGIES, MODELLING TRENDS, AND THE ONTOLOGY OF PROFESSIONAL JUDICIAL KNOWLEDGE

Springer Science & Business Media **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.

LEGAL KNOWLEDGE AND INFORMATION SYSTEMS

JURIX 2013: THE TWENTY-SIXTH ANNUAL CONFERENCE

IOS Press In the same way that it has become part of all our lives, computer technology is now integral to the work of the legal profession. The JURIX Foundation has been organizing annual international conferences in the area of computer science and law since 1988, and continues to support cutting-edge research and applications at the interface between law and computer technology. This book contains the 16 full papers and 6 short papers presented at the 26th International Conference on Legal Knowledge and Information Systems (JURIX 2013), held in December 2013 in Bologna, Italy. The papers cover a wide range of research topics and application areas concerning the advanced management of legal information and knowledge, including computational techniques for: classifying and extracting information from, and detecting conflicts in, regulatory texts; modeling legal argumentation and representing case narratives; improving the retrieval of legal information and extracting information from legal case texts; conducting e-discovery; and, applications involving intellectual property and IP licensing, online dispute resolution, delivering legal aid to the public and organizing the administration of local law and regulations. The book will be of interest to all those associated with the legal profession whose work involves the use of computer technology.

AI APPROACHES TO THE COMPLEXITY OF LEGAL SYSTEMS

INTERNATIONAL WORKSHOPS AICOL-I/IVR-XXIV, BEIJING, CHINA, SEPTEMBER 19, 2009 AND AICOL-II/JURIX 2009, ROTTERDAM, THE NETHERLANDS, DECEMBER 16, 2009 REVISED SELECTED PAPERS

Springer Science & Business Media **The inspiring idea of this workshop series, Artificial Intelligence Approaches to the Complexity of Legal Systems (AICOL), is to develop models of legal knowledge, concerning organization, structure and content, in order to promote mutual understanding and communication between different systems and cultures. Complexity and complex systems describe recent developments in AI and law, legal theory, argumentation, the Semantic Web, and multi-agent systems. The aim of the AICOL workshops is thus to offer effective support for the exchange of knowledge and methodological approaches between scholars from different scientific fields, by highlighting their similarities and differences. The comparison of multiple formal approaches to the law (such as logical models, cognitive theories, argumentation frameworks, graph theory, game theory), as well as opposite perspectives like internal and the external viewpoints, this volume stresses possible convergences, as, for instance, are possible in the realms of conceptual structures, argumentation schemes, emergent behaviors, learning evolution, adaptation, and simulation. This volume assembles 15 thoroughly refereed and revised papers, selected from two workshops organized at the XXIV World Congress of Philosophy of Law and Social Philosophy (IVR, Beijing, China, September 15-20, 2009) and at JURIX-09 (December 16-19, 2009, Rotterdam). The papers are organized in topical sections on language and complex systems in law, ontologies and the representation of legal knowledge, argumentation and logics, as well as dialogue and legal multimedia.**

KNOWLEDGE ENGINEERING FOR MODERN INFORMATION SYSTEMS

METHODS, MODELS AND TOOLS

Walter de Gruyter GmbH & Co KG **This book presents an extensive collection of the recent findings and innovative research in the information system and knowledge engineering domain. Knowledge engineering is a field within artificial intelligence that develops in particular systems that use knowledge, rather than data, to solve many computing problems, that would usually require high levels of human expertise.**

THIRD EUROPEAN CONFERENCE ON KNOWLEDGE MANAGEMNT

TRINITY COLLEGE DUBLIN, IRELAND, 24-25 SEPTEMBER 2002

Academic Conferences Limited

MODERN SOFTWARE ENGINEERING CONCEPTS AND PRACTICES:

ADVANCED APPROACHES

IGI Global **Software engineering has advanced rapidly in recent years in parallel with the complexity and scale of software systems. New requirements in software systems yield innovative approaches that are developed either through introducing new paradigms or extending the capabilities of well-established approaches. Modern Software Engineering Concepts and Practices: Advanced Approaches provides emerging theoretical approaches and their practices. This book includes case studies and real-world practices and presents a range of advanced approaches to reflect various perspectives in the discipline.**

ONTOLOGY REPRESENTATION

DESIGN PATTERNS AND ONTOLOGIES THAT MAKE SENSE

IOS Press **As the (in)famous definition states: "An ontology is an explicit specification of a conceptualization". However, an ontology is also a philosophical theory of existence, a knowledge management resource, a database schema, or a type of knowledge representation artefact on the semantic web. Over the years the term 'ontology' has been used in so many different ways that one can no longer be sure what is meant by it at any given occasion. This book clarifies the role ontologies play in knowledge representation; it discusses the distinctions with their use in philosophy, gives insight in the features, rationale and limitations of the OWL 2 web ontology language, and provides a critical review of methodologies and design principles advocated to improve the quality of ontologies. It covers both theory and practice of knowledge acquisition, representation and ontologies; it emphasises human understanding as knowledge structuring principle, and demonstrates this approach in the development of a core ontology of basic legal concepts (LKIF Core) and in the exploration of expressive ontology design patterns for the representation of social reality, change and causation, actions and transactions. In doing so it contributes to a better understanding of the representation of ontologies; or rather, what it means to do ontology representation.**

KNOWLEDGE ENGINEERING: PRACTICE AND PATTERNS

17TH INTERNATIONAL CONFERENCE, EKAW 2010, LISBON, PORTUGAL, OCTOBER 11-15, 2010, PROCEEDINGS

Springer **Knowledge Management and Knowledge Engineering is a fascinating ?eld of re- 1 search these days. In the beginning of EKAW , the modeling and acquisition of knowledge was the privilege of – or rather a burden for – a few knowledge engineers familiar with knowledge**

engineering paradigms and knowledge rep- sentationformalisms.While the aimhasalwaysbeentomodelknowledgedecl- atively and allow for reusability, the knowledge models produced in these early days were typically used in single and very speci?c applications and rarely - changed. Moreover, these models were typically rather complex, and they could be understood only by a few expert knowledge engineers. This situation has changed radically in the last few years as clearly indicated by the following trends: – The creation of (even formal) knowledge is now becoming more and more collaborative. Collaborative ontology engineering tools and social software platforms show the potential to leverage the wisdom of the crowds (or at least of "the many") to lead to broader consensus and thus produce shared models which qualify better for reuse. – A trend can also be observed towards developing and publishing small but 2 3 4 high-impactvocabularies(e.g.,FOAF ,DublinCore ,GoodRelations)rather than complex and large knowledge models.

AI APPROACHES TO THE COMPLEXITY OF LEGAL SYSTEMS - MODELS AND ETHICAL CHALLENGES FOR LEGAL SYSTEMS, LEGAL LANGUAGE AND LEGAL ONTOLOGIES, ARGUMENTATION AND SOFTWARE AGENTS

INTERNATIONAL WORKSHOP AICOL-III, HELD AS PART OF THE 25TH IVR CONGRESS, FRANKFURT AM MAIN, GERMANY, AUGUST 15-16, 2011. REVISED SELECTED PAPERS

Springer **The inspiring idea of this workshop series, Artificial Intelligence Approaches to the Complexity of Legal Systems (AICOL), is to develop models of legal knowledge concerning organization, structure, and content in order to promote mutual understanding and communication between different systems and cultures. Complexity and complex systems describe recent developments in AI and law, legal theory, argumentation, the Semantic Web, and multi-agent systems. Multisystem and multilingual ontologies provide an important opportunity to integrate different trends of research in AI and law, including comparative legal studies. Complexity theory, graph theory, game theory, and any other contributions from the mathematical disciplines can help both to formalize the dynamics of legal systems and to capture relations among norms. Cognitive science can help the modeling of legal ontology by taking into account not only the formal features of law but also social behaviour, psychology, and cultural factors. This book is thus meant to support scholars in different areas of science in sharing knowledge and methodological approaches. This volume collects the contributions to the workshop's third edition, which took place as part of the 25th IVR congress of Philosophy of Law and Social Philosophy, held in Frankfurt, Germany, in August 2011. This volume comprises six main parts devoted to the each of the six topics addressed in the workshop, namely: models for the legal system ethics and the regulation of ICT, legal knowledge management, legal information for open access, software agent**

systems in the legal domain, as well as legal language and legal ontology.

LAW AND THE SEMANTIC WEB

LEGAL ONTOLOGIES, METHODOLOGIES, LEGAL INFORMATION RETRIEVAL, AND APPLICATIONS

Springer **by Roberto Cencioni At the Lisbon Summit in March 2000, European heads of state and government set a new goal for the European Union — to become the most competitive 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.**

LOGICAL MODELS OF LEGAL ARGUMENTATION

Springer Science & Business Media **In the study of forms of legal reasoning, logic and argumentation theory long followed separate tracks. `Legal logicians' tended to focus on a deductive reconstruction of justifying a decision, disregarding the dialectical process leading to the chosen justification. Others instead emphasized the adversarial and discretionary nature of legal reasoning, involving reasonable evaluation of alternative choices, and the use of analogical reasoning. Recently, however, developments in Artificial Intelligence and Law have paved the way for overcoming this separation. Logic has widened its scope to defensible argumentation, and informal accounts of analogy and dialectics have inspired the construction of computer programs. Thus the prospect is emerging of an integrated logical and dialectical account of legal argument, adding to the understanding of legal reasoning, and providing a formal basis for computer tools that assist and mediate legal debates while leaving room for human initiative. This book presents contributions to this**

development. From a logical point of view it covers topics such as evaluating conflicting arguments, weighing reasons, modelling legal disputes as a dialogue game, the role of the burden of proof, the relation between principles, rules, reasons and facts, and the relation between deductive and nondeductive arguments. Written by leading scholars in the field and building on recent developments in logic and Artificial Intelligence, the chapters provide a state-of-the-art account of research on the logical aspects of legal argument.

LAW AND ARTIFICIAL INTELLIGENCE

REGULATING AI AND APPLYING AI IN LEGAL PRACTICE

Springer Nature **This book provides an in-depth overview of what is currently happening in the field of Law and Artificial Intelligence (AI). From deep fakes and disinformation to killer robots, surgical robots, and AI lawmaking, the many and varied contributors to this volume discuss how AI could and should be regulated in the areas of public law, including constitutional law, human rights law, criminal law, and tax law, as well as areas of private law, including liability law, competition law, and consumer law. Aimed at an audience without a background in technology, this book covers how AI changes these areas of law as well as legal practice itself. This scholarship should prove of value to academics in several disciplines (e.g., law, ethics, sociology, politics, and public administration) and those who may find themselves confronted with AI in the course of their work, particularly people working within the legal domain (e.g., lawyers, judges, law enforcement officers, public prosecutors, lawmakers, and policy advisors). Bart Custers is Professor of Law and Data Science at eLaw - Center for Law and Digital Technologies at Leiden University in the Netherlands. Eduard Fosch-Villaronga is Assistant Professor at eLaw - Center for Law and Digital Technologies at Leiden University in the Netherlands.**

FORMAL ONTOLOGY IN INFORMATION SYSTEMS

PROCEEDINGS OF THE 11TH INTERNATIONAL CONFERENCE (FOIS 2020)

IOS Press **FOIS is the flagship conference of the International Association for Ontology and its Applications, a non-profit organization which promotes interdisciplinary research and international collaboration at the intersection of philosophical ontology, linguistics, logic, cognitive science, and computer science, as well as in the applications of ontological analysis to conceptual modeling, knowledge engineering, knowledge management, information-systems development, library and information science, scientific research, and semantic technologies in general. This volume presents the 17 papers accepted for the 11th Formal Ontology in Information Systems conference (FOIS 2020). These papers cover a broad**

range of topics and are organized into 5 groups. Foundations is dedicated to the general ontological decisions providing a foundation for any ontology, both from a philosophical perspective and with an emphasis on applications. Social Entities is dedicated to the ontological analysis and formalization of various social entities, including secrets, legal theories, decisions, kinship, and cultural heritage. The papers in Intentionality and Embodiment analyze aspects of an agent's intentions, beliefs and desires, as well as the embodiment of functional relations. The section on Parts and Wholes is dedicated to mereology as well as the mereological analysis of certain types of entities (e.g., pluralities, information entities, and computer programs). Lastly, the papers in Methods are about ontology evaluation and use. Altogether, the papers reflect traditional FOIS themes with perhaps a greater emphasis on social and agent aspects, and will be of interest to all those whose work involves ontology and its applications.

INTERCULTURAL COLLABORATION

FIRST INTERNATIONAL WORKSHOP, IWIC 2007 KYOTO, JAPAN, JANUARY 25-26, 2007 INVITED AND SELECTED PAPERS

Springer **This book presents 29 revised invited and selected lectures given by top-researchers at the First International Workshop on Intercultural Collaboration, IWIC 2007, held in Kyoto, Japan. This state-of-the-art survey increases mutual understanding in our multicultural world by featuring collaboration support, social psychological analyses of intercultural interaction, and case studies from field workers.**

SEMANTIC PROCESSING OF LEGAL TEXTS

WHERE THE LANGUAGE OF LAW MEETS THE LAW OF LANGUAGE

Springer Science & Business Media **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.**

REFORMING EUROPEAN DATA PROTECTION LAW

Springer **This book on privacy and data protection offers readers conceptual analysis as well as thoughtful discussion of issues, practices, and solutions. It features results of the seventh annual International Conference on Computers, Privacy, and Data Protection, CPDP 2014, held in Brussels January 2014. The book first examines profiling, a persistent core issue of data protection and privacy. It covers the emergence of profiling technologies, on-line behavioral tracking, and the impact of profiling on fundamental rights and values. Next, the book looks at preventing privacy risks and harms through impact assessments. It contains discussions on the tools and methodologies for impact**

assessments as well as case studies. The book then goes on to cover the purported trade-off between privacy and security, ways to support privacy and data protection, and the controversial right to be forgotten, which offers individuals a means to oppose the often persistent digital memory of the web. Written during the process of the fundamental revision of the current EU data protection law by the Data Protection Package proposed by the European Commission, this interdisciplinary book presents both daring and prospective approaches. It will serve as an insightful resource for readers with an interest in privacy and data protection.

KNOWLEDGE DISCOVERY FROM LEGAL DATABASES

Springer Science & Business Media **Knowledge Discovery from Legal Databases is the first text to describe data mining techniques as they apply to law. Law students, legal academics and applied information technology specialists are guided thorough all phases of the knowledge discovery from databases process with clear explanations of numerous data mining algorithms including rule induction, neural networks and association rules. Throughout the text, assumptions that make data mining in law quite different to mining other data are made explicit. Issues such as the selection of commonplace cases, the use of discretion as a form of open texture, transformation using argumentation concepts and evaluation and deployment approaches are discussed at length.**

COMPUTATIONAL MODELS OF ARGUMENT

PROCEEDINGS OF COMMA 2020

IOS Press **The investigation of computational models of argument is a rich and fascinating interdisciplinary research field with two ultimate aims: the theoretical goal of understanding argumentation as a cognitive phenomenon by modeling it in computer programs, and the practical goal of supporting the development of computer-based systems able to engage in argumentation-related activities with human users or among themselves. The biennial International Conferences on Computational Models of Argument (COMMA) provide a dedicated forum for the presentation and discussion of the latest advancements in the field, and cover both basic research and innovative applications. This book presents the proceedings of COMMA 2020. Due to the Covid-19 pandemic, COMMA 2020 was held as an online event on the originally scheduled dates of 8 -11 September 2020, organised by the University of Perugia, Italy. The book includes 28 full papers and 13 short papers selected from a total of 78 submissions, the abstracts of 3 invited talks and 13 demonstration abstracts. The interdisciplinary nature of the field is reflected, and contributions cover both theory and practice. Theoretical contributions include new formal models, the study of formal or computational properties of models, designs for implemented systems and experimental**

research. Practical papers include applications to medicine, law and criminal investigation, chatbots and online product reviews. The argument-mining trend from previous COMMA's is continued, while an emerging trend this year is the use of argumentation for explainable AI. The book provided an overview of the latest work on computational models of argument, and will be of interest to all those working in the field.

BAYESIAN ARGUMENTATION

THE PRACTICAL SIDE OF PROBABILITY

Springer Science & Business Media **Relevant to, and drawing from, a range of disciplines, the chapters in this collection show the diversity, and applicability, of research in Bayesian argumentation. Together, they form a challenge to philosophers versed in both the use and criticism of Bayesian models who have largely overlooked their potential in argumentation. Selected from contributions to a multidisciplinary workshop on the topic held in Sweden in 2010, the authors count linguists and social psychologists among their number, in addition to philosophers. They analyze material that includes real-life court cases, experimental research results, and the insights gained from computer models. The volume provides, for the first time, a formal measure of subjective argument strength and argument force, robust enough to allow advocates of opposing sides of an argument to agree on the relative strengths of their supporting reasoning. With papers from leading figures such as Michael Oaksford and Ulrike Hahn, the book comprises recent research conducted at the frontiers of Bayesian argumentation and provides a multitude of examples in which these formal tools can be applied to informal argument. It signals new and impending developments in philosophy, which has seen Bayesian models deployed in formal epistemology and philosophy of science, but has yet to explore the full potential of Bayesian models as a framework in argumentation. In doing so, this revealing anthology looks destined to become a standard teaching text in years to come.**

COMPUTER APPLICATIONS FOR HANDLING LEGAL EVIDENCE, POLICE INVESTIGATION AND CASE ARGUMENTATION

Springer Science & Business Media **This book provides an overview of computer techniques and tools — especially from artificial intelligence (AI) — for handling legal evidence, police intelligence, crime analysis or detection, and forensic testing, with a sustained discussion of methods for the modelling of reasoning and forming an opinion about the evidence, methods for the modelling of argumentation, and computational approaches to dealing with legal, or any, narratives. By the 2000s, the modelling of reasoning on legal evidence has emerged as a significant area within the well-established field of AI & Law. An overview such as this one has never been attempted before. It offers a panoramic view of topics,**

techniques and tools. It is more than a survey, as topic after topic, the reader can get a closer view of approaches and techniques. One aim is to introduce practitioners of AI to the modelling legal evidence. Another aim is to introduce legal professionals, as well as the more technically oriented among law enforcement professionals, or researchers in police science, to information technology resources from which their own respective field stands to benefit. Computer scientists must not blunder into design choices resulting in tools objectionable for legal professionals, so it is important to be aware of ongoing controversies. A survey is provided of argumentation tools or methods for reasoning about the evidence. Another class of tools considered here is intended to assist in organisational aspects of managing of the evidence. Moreover, tools appropriate for crime detection, intelligence, and investigation include tools based on link analysis and data mining. Concepts and techniques are introduced, along with case studies. So are areas in the forensic sciences. Special chapters are devoted to VIRTOPSY (a procedure for legal medicine) and FLINTS (a tool for the police). This is both an introductory book (possibly a textbook), and a reference for specialists from various quarters.

APPROACHES TO LEGAL ONTOLOGIES

THEORIES, DOMAINS, METHODOLOGIES

Springer Science & Business Media **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.**

NEW RESEARCH ON KNOWLEDGE MANAGEMENT APPLICATIONS AND LESSON LEARNED

BoD – Books on Demand **Due to the development of mobile and Web 2.0 technology, knowledge transfer, storage and retrieval have become much more rapid. In recent years, there have been more and more new and interesting findings in the research field of knowledge management. This book aims to introduce readers to the recent research topics, it is titled "New Research on Knowledge Management Applications and Lesson Learned" and includes 14 chapters. This book focuses on introducing the applications of KM technologies and methods to various fields. It shares the practical experiences and limitations of those applications. It is expected that this book provides relevant information about new research**

trends in comprehensive and novel knowledge management studies, and that it serves as an important resource for researchers, teachers and students, and for the development of practices in the knowledge management field.

THE CIRCULATION OF AGENCY IN E-JUSTICE

INTEROPERABILITY AND INFRASTRUCTURES FOR EUROPEAN TRANSBORDER JUDICIAL PROCEEDINGS

Springer Science & Business Media **This book contributes to an understanding of the dynamic complexities involved in the design of e-justice applications that enable online trans-border judicial proceedings in Europe. It provides answers to critical questions with practical relevance: How should online trans-border judicial proceedings be designed in order to deliver effective and timely justice to European citizens, businesses and public agencies? How can the circulation of judicial agency across Europe be facilitated? Based on extensive research, the book explores and assesses the complex entanglements between law and technology, and between national and European jurisdictions that emerge when developing even relatively simple e-services such as those supporting the European small claims procedure and European payment orders. In addition to providing a strong theoretical framework and an innovative approach to e-justice design, this book includes case studies that are based on a common methodology and theoretical framework. It presents original empirical material on the development of e-government systems in the area of European justice. Finally, it introduces the design strategies of Maximum Feasible Simplicity and Maximum Manageable Complexity and, based on them, it proposes architectural and procedural solutions to enhance the circulation of judicial agency.**

ELEXICOGRAPHY IN THE 21ST CENTURY : NEW CHALLENGES, NEW APPLICATIONS

PROCEEDINGS OF ELEX 2009, LOUVAIN-LA-NEUVE, 22-24 OCTOBER 2009

Presses univ. de Louvain **The field of lexicography is undergoing a major revolution. The rapid replacement of the traditional paper dictionary by electronic dictionaries opens up exciting possibilities but also constitutes a major challenge to the field. The eLexicography in the 21st Century: New Challenges, New Applications conference organized by the Centre for English Corpus Linguistics of the Université catholique de Louvain in October 2009 aimed to bring together the many researchers around the world who are working in the fast developing field of electronic lexicography and to act as a showcase for the latest lexicographic developments and software solutions in the field. The conference attracted**

both academics and industrial partners from 30 different countries who presented electronic dictionary projects dealing with no less than 22 languages. The resulting proceedings volume bears witness to the tremendous vitality and diversity of research in the field. The volume covers a wide range span of topics, including: -the use of language resources for lexicographic purposes, in the form of lexical databases like WordNet or corpora of different types - innovative changes to the dictionary structure afforded by the electronic medium, in particular multiple access routes and efficient integration of phraseology -specialised dictionaries (e.g. SMS dictionaries, sign language dictionaries) -automated customisation of dictionaries in function of users' needs -exploitation of Natural Language Processing tools - integration of electronic dictionaries into language learning and teaching

ADVANCES IN ENTERPRISE ENGINEERING XIII

9TH ENTERPRISE ENGINEERING WORKING CONFERENCE, EEWC 2019, LISBON, PORTUGAL, MAY 20–24, 2019, REVISED PAPERS

Springer Nature **This book constitutes the proceedings of the 9th Enterprise Engineering Working Conference, EEWC 2019, held in Lisbon, Portugal, May 2019. EEWC aims at addressing the challenges that modern and complex enterprises are facing in a rapidly changing world. The participants of the working conference share a belief that dealing with these challenges requires rigorous and scientific solutions, focusing on the design and engineering of enterprises. The goal of EEWC is to stimulate interaction between the different stakeholders, scientists as well as practitioners, interested in making Enterprise Engineering a reality. The 8 full papers and 3 short papers presented in this volume were carefully reviewed and selected from 22 submissions. They were organized in topical sections on processes; DEMO; models and enterprise architecture; and blockchain.**

DEVELOPMENT DIGEST

A SYMBOLIC AND CONNECTIONIST APPROACH TO LEGAL INFORMATION RETRIEVAL

Psychology Press **Many existing information retrieval (IR) systems are surprisingly ineffective at finding documents relevant to particular topics. Traditional systems are extremely brittle, failing to retrieve relevant documents unless the user's exact search string is found. They support only the most primitive trial-and-error interaction with their users and are also static. Even systems with so-called "relevance feedback" are incapable of learning from experience with users. SCALIR (a Symbolic and Connectionist Approach to Legal Information Retrieval) -- a system for assisting research on copyright law -- has been designed to address these problems. By using a hybrid of symbolic and connectionist artificial intelligence techniques, SCALIR develops a conceptual representation of**

document relationships without explicit knowledge engineering. SCALIR's direct manipulation interface encourages users to browse through the space of documents. It then uses these browsing patterns to improve its performance by modifying its representation, resulting in a communal repository of expertise for all of its users. SCALIR's representational scheme also mirrors the hybrid nature of the Anglo-American legal system. While certain legal concepts are precise and rule-like, others -- which legal scholars call "open-textured" -- are subject to interpretation. The meaning of legal text is established through the parallel and distributed precedence-based judicial appeal system. SCALIR represents documents and terms as nodes in a network, capturing the duality of the legal system by using symbolic (semantic network) and connectionist links. The former correspond to a priori knowledge such as the fact that one case overturned another on appeal. The latter correspond to statistical inferences such as the relevance of a term describing a case. SCALIR's text corpus includes all federal cases on copyright law. The hybrid representation also suggests a way to resolve the apparent incompatibility between the two prominent paradigms in artificial intelligence, the "classical" symbol-manipulation approach and the neurally-inspired connectionist approach. Part of the book focuses on a characterization of the two paradigms and an investigation of when and how -- as in the legal research domain -- they can be effectively combined.

ELECTRONIC GOVERNMENT

FIRST INTERNATIONAL CONFERENCE, EGOV 2002, AIX-EN-PROVENCE, FRANCE, SEPTEMBER 2-5, 2002. PROCEEDINGS

Springer **In defining the state of the art of E-Government, EGOV 2002 was aimed at breaking new ground in the development of innovative solutions in this impor tant field of the emerging Information Society. To promote this aim, the EGOV conference brought together professionals from all over the globe. In order to obtain a rich picture of the state of the art, the subject matter was dealt with in various ways: drawing experiences from case studies, investigating the outcome from projects, and discussing frameworks and guidelines. The large number of contributions and their breadth testify to a particularly vivid discussion, in which many new and fascinating strands are only beginning to emerge. This begs the question where we are heading in the field of E-Government. It is the intention of the introduction provided by the editors to concentrate the wealth of expertise presented into some statements about the future development of E-Government.**

ADVANCES AND INNOVATIONS IN SYSTEMS, COMPUTING SCIENCES AND SOFTWARE ENGINEERING

Springer Science & Business Media **This book includes a set of rigorously**

reviewed world-class manuscripts addressing and detailing state-of-the-art research projects in the areas of Computing Sciences, Software Engineering and Systems. The book presents selected papers from the conference proceedings of the International Conference on Systems, Computing Sciences and Software Engineering (SCSS 2006). All aspects of the conference were managed on-line.

FORMAL ONTOLOGY IN INFORMATION SYSTEMS

PROCEEDINGS OF THE TWELFTH INTERNATIONAL CONFERENCE (FOIS 2021)

IOS Press **Formal Ontology in Information Systems (FOIS) is the flagship conference of the International Association for Ontology and its Applications, a non-profit organization promoting interdisciplinary research and international collaboration at the intersection of philosophical ontology, linguistics, logic, cognitive science, and computer science. This book presents the 11 papers accepted for the 12th edition of FOIS. The conference was held from 13-17 September 2021 in Bozen-Bolzano, Italy, as a hybrid event with some participants attending on-site in Bolzano and others attending virtually online. The papers are divided into 3 sections and cover a wide range of topics: (1) Foundations, addressing fundamental issues; (2) Applications and Methods, presenting novel uses, systems, tools, and approaches; and (3) Domain Ontology, describing well-formed ontologies in particular subject areas.**

PROCEEDINGS OF THE CONFERENCE

CONCEPTUAL MODELING - ER 2009

28TH INTERNATIONAL CONFERENCE ON CONCEPTUAL MODELING, GRAMADO, BRAZIL, NOVEMBER 9-12, 2009, PROCEEDINGS

Springer Science & Business Media **This book constitutes the refereed proceedings of the 28th International Conference on Conceptual Modeling, ER 2009, held in Gramado, Brazil, in November 2009. The 31 revised full papers presented together with 18 demo papers were carefully reviewed and selected from 162 submissions. The papers are organized in topical sections on conceptual modeling, requirements engineering, query approaches, space and time modeling, schema matching and integration, application contexts, process and service modeling, and industrial session.**

KNOWLEDGE SERVICE ENGINEERING HANDBOOK

CRC Press **Edited by Jussi Kantola, the founding faculty member of the world's first university Knowledge Service Engineering Department at Korea Advanced Institute of Science and Technology, and Waldemar Karwowski from the Department of Industrial Engineering and Management Systems at UCF, Knowledge Service Engineering Handbook**

defines what knowledge services engineering means and how it is different from service engineering and service production. This groundbreaking handbook explores recent advances in knowledge service engineering from the accomplished researchers and practitioners in this field from around the world and provides engineering, systemic, industry, and consumer use viewpoints to knowledge service systems and engineering paradigms. The handbook outlines how to acquire and utilize knowledge in the 21st century presenting multiple cultural aspects including US, European, and Asian perspectives. Organized into four parts, it begins with an introduction to the main concepts of knowledge services. It then explores data, information and knowledge based engineering methods and applications that can be used to develop knowledge services, followed by discussions of the importance of human networks in knowledge services. The handbook concludes with descriptions of high-performance knowledge service systems. This structure allows different uses: the information can be looked up as needed or read in the order presented. As with any new field, the excitement lies in seeing how to combine these advances in data, information, and human parts of knowledge services in the future. While most books on this subject concentrate on data, information, or knowledge, this handbook integrates coverage of all three, thus providing a complete examination of sustainable knowledge services. The handbook has been carefully designed to be of use to professionals who develop new knowledge services and related businesses, for academic researchers and lecturers to start new research projects, and for students studying knowledge services, knowledge service production, and knowledge service business.

FORMAL LINGUISTICS AND LAW

Walter de Gruyter **This volume explores new interfaces between linguistics and jurisprudence. Its theoretical and methodological importance lies in showing that many questions asked within the field of language and law receive satisfactory answers from formal linguistics. The book starts with a paper by the two editors in which they explain why the volume - as a whole and with its individual papers - is an innovation in the field of language and law. In addition, an overview about the most important research projects on language and law is given. The first chapter of the book is on understanding the law. Jurists and laypersons always ask for the precise meaning of a certain piece of the law. In linguistics, the discipline investigating 'meaning' is semantics; thus, it is to be expected that semantics can contribute to a correct understanding of the law. Chapter 1 also investigates the alleged incomprehensibility of legal language with the help of psycholinguistics. Chapter 2 is on identifying the criminal. To find the author of a blackmailer's letter, text/ corpus linguistics is instrumental. If the blackmailer uses the telephone instead of the letter, speaker identification and phonetics are necessary. The BKA stores all**

blackmailing letters in a database, but databases are only one possibility of organizing legal systems; another possibility is the application of tools from computational linguistics and artificial intelligence. These tools can be useful to handle terminology, to retrieve information, or to model legal theorizing in a formal system. Chapter 3 demonstrates a variety of examples of organizing legal systems. The topic of chapter 4 is multilingualism and the law. The European legislation is a product of legal and linguistic diversity, as the member states do not only differ in languages but also in their legal systems. One paper shows how Switzerland handles its multilingualism in legal drafting. The input of translation studies is of course vital in this field of research. An index for both subjects and persons complements the volume.

SPECIALISED ANTI-CORRUPTION INSTITUTIONS REVIEW OF MODELS

REVIEW OF MODELS

OECD Publishing **International anti-corruption treaties, including the UN Convention against Corruption, require member states to establish two types of anti-corruption institutions – one to prevent corruption and the other to combat corruption through law ...**

SEVENTH INTERNATIONAL WORKSHOP ON DATABASE AND EXPERT SYSTEMS APPLICATIONS

SEPTEMBER 9-10, 1996, ZURICH, SWITZERLAND : PROCEEDINGS

IEEE **Annotation The proceedings of the IEEE International Workshop on Database and Expert Systems Applications, held in September 1996, comprise a total of 25 sessions focusing on object-oriented databases; active and temporal aspects; expert and knowledge- based systems; applications; transaction concepts and physical aspects; advanced database and information system methods; CSCW and workflow management systems; and relational and extended relational approaches. Lacks a subject index. Annotation copyrighted by Book News, Inc., Portland, OR.**

METRICS OF SENSORY MOTOR COORDINATION AND INTEGRATION IN ROBOTS AND ANIMALS

HOW TO MEASURE THE SUCCESS OF BIOINSPIRED SOLUTIONS WITH RESPECT TO THEIR NATURAL MODELS, AND AGAINST MORE 'ARTIFICIAL' SOLUTIONS?

Springer **This book focuses on a critical issue in the study of physical agents, whether natural or artificial: the quantitative modelling of sensory–motor coordination. Adopting a novel approach, it defines a common scientific framework for both the intelligent systems designed by**

engineers and those that have evolved naturally. As such it contributes to the widespread adoption of a rigorous quantitative and refutable approach in the scientific study of 'embodied' intelligence and cognition. More than 70 years after Norbert Wiener's famous book Cybernetics: or Control and Communication in the Animal and the Machine (1948), robotics, AI and life sciences seem to be converging towards a common model of what we can call the 'science of embodied intelligent/cognitive agents'. This book is interesting for an interdisciplinary community of researchers, technologists and entrepreneurs working at the frontiers of robotics and AI, neuroscience and general life and brain sciences.

LEGAL STRATEGIES

HOW CORPORATIONS USE LAW TO IMPROVE PERFORMANCE

Springer Science & Business Media **Far from regarding the law as supreme, corporations approach law as an element of executive thought and action aimed at optimizing competitiveness. The objective of this book is to identify, explore and define corporate legal strategies that seek advantage in the opportunities revealed when the Law is perceived as a resource to be mobilized and aligned with the firm's business and economic agendas.**

ADVANCES IN INTELLIGENT INFORMATION SYSTEMS

Springer Science & Business Media **Intelligent Information Systems (IIS) can be defined as the next generation of Information Systems (IS) developed as a result of integration of AI and database (DB) technologies. IIS embody knowledge that allows them to exhibit intelligent behavior, allows them to cooperate with users and other systems in problem solving, discovery, retrieval, and manipulation of data and knowledge. For any IIS to serve its purpose, the information must be available when it is needed. This means that the computing systems used to store data and process the information, and the security controls used to protect it must be functioning correctly. This book covers some of the above topics and it is divided into four sections: Classification, Approximation and Data Security, Knowledge Management, and Application of IIS to medical and music domains.**