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Data Matching

Concepts and Techniques for Record Linkage, Entity Resolution, and Duplicate Detection

Springer Science & Business Media **Data matching (also known as record or data linkage, entity resolution, object identification, or field matching) is the task of identifying, matching and merging records that correspond to the same entities from several databases or even within one database. Based on research in various domains including applied statistics, health informatics, data mining, machine learning, artificial intelligence, database management, and digital libraries, significant advances have been achieved over the last decade in all aspects of the data matching process, especially on how to improve the accuracy of data matching, and its scalability to large databases. Peter Christen's book is divided into three parts: Part I, "Overview", introduces the subject by presenting several sample applications and their special challenges, as well as a general overview of a generic data matching process. Part II, "Steps of the Data Matching Process", then details its main steps like pre-processing, indexing, field and record comparison, classification, and quality evaluation. Lastly, part III, "Further Topics", deals with specific aspects like privacy, real-time matching, or matching unstructured data. Finally, it briefly describes the main features of many research and open source systems available today. By providing the reader with a broad range of data matching concepts and techniques and touching on all aspects of the data matching process, this book helps researchers as well as students specializing in data quality or data matching aspects to familiarize themselves with recent research advances and to identify open research challenges in the area of data matching. To this end, each chapter of the book includes a final section that provides pointers to further background and research material. Practitioners will better understand the current state of the art in data matching as well as the internal workings and limitations of current systems. Especially, they will learn that it is often not feasible to simply implement an existing off-the-shelf data matching system without substantial adaption and customization. Such practical considerations are discussed for each of the major steps in the data matching process.**

Data-Centric Business and Applications

ICT Systems-Theory, Radio-Electronics, Information Technologies and Cybersecurity (Volume 5)

Springer Nature **This book addresses the challenges and opportunities of information/data processing and management. It also covers a range of methods, techniques and strategies for making it more efficient, approaches to increasing its usage, and ways to minimize information/data loss while improving customer satisfaction. Information and Communication Technologies (ICTs) and the Service Systems associated with them have had an enormous impact on businesses and our day-to-day lives over the past three decades, and continue to do so. This development has led to the emergence of new application areas and relevant disciplines, which in turn present new challenges and opportunities for service system usage. The book provides practical insights into various aspects of ICT technologies for service systems: Techniques for information/data processing and modeling in service systems Strategies for the provision of information/data processing and management Methods for collecting and analyzing information/data Applications, benefits, and challenges of service system implementation Solutions to increase the performance of various service systems using the latest ICT technologies**

Intelligent Systems Applications in Software Engineering

Proceedings of 3rd Computational Methods in Systems and Software 2019, Vol. 1

Springer Nature **This book presents real-world problems and exploratory research that describes novel approaches in software engineering, cybernetics and algorithms in the context of intelligent systems. It constitutes the refereed**

proceedings of the 3rd Computational Methods in Systems and Software 2019 (CoMeSySo 2019) conference, a groundbreaking online conference that provides an international forum for discussing the latest high-quality research results.

User-Centric Technology Design for Nonprofit and Civic Engagements

Springer Science & Business **Due to the increased global political importance of the nonprofit sector, its technological support and organizational characteristics have become important fields of research. In order to conduct effective work, nonprofits need to communicate and coordinate effectively. However, such settings are generally characterized by a lack of resources, an absence of formal hierarchical structures and differences in languages and culture among the activists. Modern technologies could help nonprofit networks in improving their working. In order to design appropriate technological support for such settings, it is important to understand their work practices, which widely differ from traditional business organizations. This book aims to strengthen the body of knowledge by providing user studies and concepts related to user centered technology design process for nonprofit settings. The examination of ethnographic studies and user centered evaluation of IT artifacts in practice will further the understanding of design requirements of these systems. This book includes chapters from leading scholars and practitioners on the technology design process examining human centered factors. The chapters will focus on developed and developing countries as they both have unique issues in technology design. The book will be useful or of interest to academics from a range of fields including information systems, human computer interaction, computer supported cooperative work and organizational science as well as for government officials and governmental organizations.**

Advances in Databases and Information Systems

14th East European Conference, ADBIS 2010, Novi Sad, Serbia, September 20-24, 2010, Proceedings

Springer **This volume contains the best papers presented at the 14th East-European C- ference on Advances in Databases and Information Systems (ADBIS 2010), held during September 20-24, 2010, in Novi Sad, Serbia. ADBIS 2010 continued the ADBIS series held in St. Petersburg (1997), Poznan (1998), Maribor (1999), Prague (2000), Vilnius (2001), Bratislava (2002), Dresden (2003), Budapest (2004), Tallinn (2005), Thessaloniki (2006), Varna (2007), Pori (2008), and Riga (2009). The main objective of the ADBIS series of conferences is to provide a forum for the dissemination of research acc- plishments and to promote interaction and collaboration between the database and information systems research communities from Central and East European countries and the rest of the world. The ADBIS conferences provide an inter- tional platform for the presentation of research on database theory, development of advanced DBMS technologies, and their advanced applications. ADBIS 2010 spans a wide area of interests, covering all major aspects related to theory and applications of database technology and information systems. Two di?erent submission lines were considered for ADBIS 2010, one within the classic track and another one within a special track organisation. ADBIS comprised ?ve tracks: 1. Conceptual Modeling in Systems Engineering (CMSE) 2. Data Mining and Information Extraction (DMIE) 3. Business Processes in E-Commerce Systems (e-commerce) 4. Personal Identi?able Information: Privacy, Ethics, and Security (PIIPES) 5.**

Linking and Mining Heterogeneous and Multi-view Data

Springer **This book highlights research in linking and mining data from across varied data sources. The authors focus on recent advances in this burgeoning field of multi-source data fusion, with an emphasis on exploratory and unsupervised data analysis, an area of increasing significance with the pace of growth of data vastly outpacing any chance of labeling them manually. The book looks at the underlying algorithms and technologies that facilitate the area within big data analytics, it covers their applications across domains such as smarter transportation, social media, fake news detection and enterprise search among others. This book enables readers to understand a spectrum of advances in this emerging area, and it will hopefully empower them to leverage and develop methods in multi-source**

data fusion and analytics with applications to a variety of scenarios. Includes advances on unsupervised, semi-supervised and supervised approaches to heterogeneous data linkage and fusion; Covers use cases of analytics over multi-view and heterogeneous data from across a variety of domains such as fake news, smarter transportation and social media, among others; Provides a high-level overview of advances in this emerging field and empowers the reader to explore novel applications and methodologies that would enrich the field.

Enterprise Applications and Services in the Finance Industry

4th International Workshop, FinanceCom 2008, Paris, France, December 13, 2008, Revised Papers

Springer Science & Business Media **This book constitutes the proceedings of the 4th International Workshop on Enterprise Applications and Services in the Finance Industry, FinanceCom2008, held in Paris, France, on December 13, 2008. The workshop spans multiple disciplines, including technical, economic, sociological and behavioral sciences. The guiding theme of this workshop was concerned with innovations in the financial services industry, driven by either new business models or changed regulations. The nine presented papers and the keynote speech were carefully reviewed and selected from numerous submissions. The topics covered are financial markets and customers, service-oriented architectures, and regulation and compliance.**

Applied Machine Learning Explainability Techniques

Make ML models explainable and trustworthy for practical applications using LIME, SHAP, and more

Packt Publishing Ltd **Leverage top XAI frameworks to explain your machine learning models with ease and discover best practices and guidelines to build scalable explainable ML systems Key FeaturesExplore various explainability methods for designing robust and scalable explainable ML systemsUse XAI frameworks such as LIME and SHAP to make ML models explainable to solve practical problemsDesign user-centric explainable ML systems using guidelines provided for industrial applicationsBook Description Explainable AI (XAI) is an emerging field that brings artificial intelligence (AI) closer to non-technical end users. XAI makes machine learning (ML) models transparent and trustworthy along with promoting AI adoption for industrial and research use cases. Applied Machine Learning Explainability Techniques comes with a unique blend of industrial and academic research perspectives to help you acquire practical XAI skills. You'll begin by gaining a conceptual understanding of XAI and why it's so important in AI. Next, you'll get the practical experience needed to utilize XAI in AI/ML problem-solving processes using state-of-the-art methods and frameworks. Finally, you'll get the essential guidelines needed to take your XAI journey to the next level and bridge the existing gaps between AI and end users. By the end of this ML book, you'll be equipped with best practices in the AI/ML life cycle and will be able to implement XAI methods and approaches using Python to solve industrial problems, successfully addressing key pain points encountered. What you will learnExplore various explanation methods and their evaluation criteriaLearn model explanation methods for structured and unstructured dataApply data-centric XAI for practical problem-solvingHands-on exposure to LIME, SHAP, TCAV, DALEX, ALIBI, DiCE, and othersDiscover industrial best practices for explainable ML systemsUse user-centric XAI to bring AI closer to non-technical end usersAddress open challenges in XAI using the recommended guidelinesWho this book is for This book is for scientists, researchers, engineers, architects, and managers who are actively engaged in machine learning and related fields. Anyone who is interested in problem-solving using AI will benefit from this book. Foundational knowledge of Python, ML, DL, and data science is recommended. AI/ML experts working with data science, ML, DL, and AI will be able to put their knowledge to work with this practical guide. This book is ideal for you if you're a data and AI scientist, AI/ML engineer, AI/ML product manager, AI product owner, AI/ML researcher, and UX and HCI researcher.**

Cloud Computing and Big Data

IOS Press **Cloud computing offers many advantages to researchers and engineers who need access to high performance computing facilities for solving particular compute-intensive and/or large-scale problems, but whose overall high performance computing (HPC) needs do not justify the acquisition and operation of dedicated HPC facilities. There are, however, a number of fundamental problems which must be addressed, such as the limitations imposed by accessibility, security and communication speed, before these advantages can be exploited to the full. This book presents 14 contributions selected from the International Research Workshop on Advanced High Performance Computing Systems, held in Cetraro, Italy, in June 2012. The papers are arranged in three chapters. Chapter 1 includes five papers on cloud infrastructures, while Chapter 2 discusses cloud applications. The third chapter in the book deals with big data, which is nothing new – large scientific organizations have been collecting large amounts of data for decades – but what is new is that the focus has now broadened to include sectors such as business analytics, financial analyses, Internet service providers, oil and gas, medicine, automotive and a host of others. This book will be of interest to all those whose work involves them with aspects of cloud computing and big data applications.**

Applications of Data-Centric Science to Social Design

Qualitative and Quantitative Understanding of Collective Human Behavior

Springer **The intention behind this book is to illustrate the deep relation among human behavior, data-centric science, and social design. In fact, these three issues have been independently developing in different fields, although they are, of course, deeply interrelated to one another. Specifically, fundamental understanding of human behavior should be employed for investigating our human society and designing social systems. Insights and both quantitative and qualitative understandings of collective human behavior are quite useful when social systems are designed. Fundamental principles of human behavior, theoretical models of human behavior, and information cascades are**

addressed as aspects of human behavior. Data-driven investigation of human nature, social behavior, and societal systems are developed as aspects of data-centric science. As design aspects, how to design social systems from heterogeneous memberships is explained. There is also discussion of these three aspects—human behavior, data-centric science, and social design—independently and with regard to the relationships among them.

Database Technologies: Concepts, Methodologies, Tools, and Applications

Concepts, Methodologies, Tools, and Applications

IGI Global **"This reference expands the field of database technologies through four-volumes of in-depth, advanced research articles from nearly 300 of the world's leading professionals"--Provided by publisher.**

Linking Sensitive Data

Methods and Techniques for Practical Privacy-Preserving Information Sharing

This book provides modern technical answers to the legal requirements of pseudonymisation as recommended by privacy legislation. It covers topics such as modern regulatory frameworks for sharing and linking sensitive information, concepts and algorithms for privacy-preserving record linkage and their computational aspects, practical considerations such as dealing with dirty and missing data, as well as privacy, risk, and performance assessment measures. Existing techniques for privacy-preserving record linkage are evaluated empirically and real-world application examples that scale to population sizes are described. The book also includes pointers to freely available software tools, benchmark data sets, and tools to generate synthetic data that can be used to test and evaluate

linkage techniques. This book consists of fourteen chapters grouped into four parts, and two appendices. The first part introduces the reader to the topic of linking sensitive data, the second part covers methods and techniques to link such data, the third part discusses aspects of practical importance, and the fourth part provides an outlook of future challenges and open research problems relevant to linking sensitive databases. The appendices provide pointers and describe freely available, open-source software systems that allow the linkage of sensitive data, and provide further details about the evaluations presented. A companion Web site at https://dmm.anu.edu.au/lsdbook2020 provides additional material and Python programs used in the book. This book is mainly written for applied scientists, researchers, and advanced practitioners in governments, industry, and universities who are concerned with developing, implementing, and deploying systems and tools to share sensitive information in administrative, commercial, or medical databases. The Book describes how linkage methods work and how to evaluate their performance. It covers all the major concepts and methods and also discusses practical matters such as computational efficiency, which are critical if the methods are to be used in practice - and it does all this in a highly accessible way! David J. Hand, Imperial College, London.

Surveillance Technologies and Early Warning Systems: Data Mining Applications for Risk Detection

Data Mining Applications for Risk Detection

IGI Global **Surveillance Technologies and Early Warning Systems: Data Mining Applications for Risk Detection has never been more important, as the research this book presents an alternative to conventional surveillance and risk assessment. This book is a multidisciplinary excursion comprised of data mining, early warning systems, information technologies and risk management and explores the intersection of these components in problematic domains. It offers the ability to apply the most modern techniques to age old problems allowing for increased effectiveness in the response to future, eminent, and present risk.**

Encyclopedia of Database Technologies and Applications

IGI Global **"Addresses the evolution of database management, technologies and applications along with the progress and endeavors of new research areas."--P. xiii.**

Techniques and Applications for Mobile Commerce

Proceedings of TAMoCo 2008

IOS Press **Mobile Commerce (M-Commerce) comprises applications and services that are accessible from Internet-enabled mobile devices. It involves new technologies, services and business models. While it is different from traditional e-Commerce it can also be seen as an extension of e-Commerce in the sense that it, among others, makes e-Commerce available in a modern way to new application areas and to a new set of customers. The Internet is on its way to leave traces in all aspects of our life independently of where we are. Already today, mobile phones and PDAs are an indispensable part of our life as a source for all kinds of information and services and, especially, as our permanently available interface to our environment. Very soon they will turn into widespread intelligent assistants capable of anticipating many of our wishes and needs, but, for all these changes to happen, key issues of interoperability, usability, security and privacy still need to be addressed. The Techniques and Applications for Mobile Commerce (TAMoCo) conference series addresses these issues. It provides scientists, practitioners, and students with a platform to discuss the latest trends in the exciting above mentioned areas. This book is structured into three parts; Wireless Technologies for the Extended Enterprise: Current State and Future Developments; E-Service Environments: Aspect-Oriented Techniques and Mobile Devices; and AutoMoCo: Autonomic Computing and Mobile Commerce.**

Networked Digital Technologies, Part I

Second International Conference, NDT 2010, Prague, Czech Republic

Springer Science & Business Media **On behalf of the NDT 2010 conference, the Program Committee and Charles University in Prague, Czech Republic, we welcome you to the proceedings of the Second International Conference on 'Networked Digital Technologies' (NDT 2010). The NDT 2010 conference explored new advances in digital and Web technology applications. It brought together researchers from various areas of computer and information sciences who addressed both theoretical and applied aspects of Web technology and Internet applications. We hope that the discussions and exchange of ideas that took place will contribute to advancements in the technology in the near future. The conference received 216 papers, out of which 85 were accepted, resulting in an acceptance rate of 39%. These accepted papers are authored by researchers from 34 countries covering many significant areas of Web applications. Each paper was evaluated by a minimum of two reviewers. Finally, we believe that the proceedings document the best research in the studied areas. We express our thanks to the Charles University in Prague, Springer, the authors and the organizers of the conference.**

Emerging Technologies and Applications in Data Processing and Management

IGI Global **Advances in web technology and the proliferation of sensors and mobile devices connected to the internet have resulted in the generation of immense data sets available on the web that need to be represented, saved, and exchanged. Massive data can be managed effectively and efficiently to support various problem-solving and decision-making techniques. Emerging Technologies and Applications in Data Processing and Management is a critical scholarly publication that examines the importance of data management strategies that coincide with advancements in web technologies. Highlighting topics such as geospatial coverages, data analysis, and keyword query, this book is ideal for professionals, researchers, academicians, data analysts, web developers, and web engineers.**

Data Quality

Concepts, Methodologies and Techniques

Springer Science & Business Media **Poor data quality can seriously hinder or damage the efficiency and effectiveness of organizations and businesses. The growing awareness of such repercussions has led to major public initiatives like the "Data Quality Act" in the USA and the "European 2003/98" directive of the European Parliament. Batini and Scannapieco present a comprehensive and systematic introduction to the wide set of issues related to data quality. They start with a detailed description of different data quality dimensions, like accuracy, completeness, and consistency, and their importance in different types of data, like federated data, web data, or time-dependent data, and in different data categories classified according to frequency of change, like stable, long-term, and frequently changing data. The book's extensive description of techniques and methodologies from core data quality research as well as from related fields like data mining, probability theory, statistical data analysis, and machine learning gives an excellent overview of the current state of the art. The presentation is completed by a short description and critical comparison of tools and practical methodologies, which will help readers to resolve their own quality problems. This book is an ideal combination of the soundness of theoretical foundations and the applicability of practical approaches. It is ideally suited for everyone – researchers, students, or professionals – interested in a comprehensive overview of data quality issues. In addition, it will serve as the basis for an introductory course or for self-study on this topic.**

Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud

Computing

IGI Global **Distributed systems intertwine with our everyday lives. The benefits and current shortcomings of the underpinning technologies are experienced by a wide range of people and their smart devices. With the rise of large-scale IoT and similar distributed systems, cloud bursting technologies, and partial outsourcing solutions, private entities are encouraged to increase their efficiency and offer unparalleled availability and reliability to their users. The Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud Computing is a vital reference source that provides valuable insight into current and emergent research occurring within the field of distributed computing. It also presents architectures and service frameworks to achieve highly integrated distributed systems and solutions to integration and efficient management challenges faced by current and future distributed systems. Highlighting a range of topics such as data sharing, wireless sensor networks, and scalability, this multi-volume book is ideally designed for system administrators, integrators, designers, developers, researchers, academicians, and students.**

Techniques and Applications for Mobile Commerce

Proceedings of TAMoCo 2008

IOS Press **Covers Wireless Technologies for the Extended Enterprise; E-Service Environments: Aspect-Oriented Techniques and Mobile Devices; and AutoMoCo: Autonomic Computing and Mobile Commerce.**

Information and Communication Technologies for Agriculture—Theme II: Data

Springer Nature

Data-Centric Business and Applications

Evolvements in Business Information Processing and Management (Volume 2)

Springer **This book explores various aspects of data engineering and information processing. In this second volume, the authors assess the challenges and opportunities involved in doing business with information. Their contributions on business information processing and management reflect diverse viewpoints – not only technological, but also business and social. As the global marketplace grows more and more complex due to the increasing availability of data, the information business is steadily gaining popularity and has a huge impact on modern society. Thus, there is a growing need for consensus on how business information can be created, accessed, used and managed.**

Transactions on Large-Scale Data- and Knowledge-Centered Systems I

Springer **Data management, knowledge discovery, and knowledge processing are core and hot topics in computer science. They are widely accepted as enabling technologies for modern enterprises, enhancing their performance and their decision making processes. Since the 1990s the Internet has been the outstanding driving force for application development in all domains. An increase in the demand for resource sharing (e. g. , computing resources, s- vices, metadata, data sources) across different sites connected through networks has led to an evolvement of data- and knowledge-management systems from centralized systems to decentralized systems enabling large-scale distributed applications prov- ing high scalability. Current decentralized systems still focus on data and knowledge as their main resource characterized by: heterogeneity of nodes, data, and knowledge autonomy of data and knowledge sources and services large-scale data volumes, high numbers of data sources, users, computing resources dynamicity of nodes These characteristics recognize: (i) limitations of methods and techniques developed for centralized systems (ii)**

requirements to extend or design new approaches and methods enhancing efficiency, dynamicity, and scalability (iii) development of large scale, experimental platforms and relevant benchmarks to evaluate and validate scaling Feasibility of these systems relies basically on P2P (peer-to-peer) techniques and agent systems supporting with scaling and decentralized control. Synergy between Grids, P2P systems and agent technologies is the key to data- and knowledge-centered systems in large-scale environments.

The Method Framework for Engineering System Architectures

CRC Press **The architects of today's large and complex systems all too often struggle with the lack of a consistent set of principles and practices that adequately address the entire breadth of systems architecture. The Method Framework for Engineering System Architectures (MFESA) enables system architects and process engineers to create methods for effective**

Privacy Protection Measures and Technologies in Business Organizations: Aspects and Standards

Aspects and Standards

IGI Global **"This book is a collection of research on privacy protection technologies and their application in business organizations"--Provided by publisher.**

Chipless RFID Reader Architecture

Artech House **In the era of information communication technology (ICT), radio frequency identification (RFID) has been going through tremendous development. RFID technology has the potential of replacing barcodes due to its large**

information carrying capacity, flexibility in operations, and applications. The deployment of RFID has been hindered by its cost. However, with the advent of low powered ICs, energy scavenging techniques, and low-cost chipless tags, RFID technology has achieved significant development. This book addresses the new reader architecture, presents fundamentals of chipless RFID systems, and covers protocols. It also presents proof-of-concept implementations with potential to replace trillions of barcodes per year. Overall, this resource aims to not only explain the technology, but to make the chipless RFID reader system a viable commercial product for mass deployment. It is certainly a very useful resource in the new field.

Agent-Based Technologies and Applications for Enterprise Interoperability

International Workshops, ATOP 2005, Utrecht, The Netherlands, July 25-26, 2005, and ATOP 2008, Estoril, Portugal, May 12-13, 2008, Revised Selected Papers

Springer Science & Business Media **The ATOP (Agent-Based Technologies and Applications for Enterprise Interoperability) workshop series focuses on technologies that support interoperability in networked organizations, on successful applications of these technologies, and on lessons learned. So far two ATOP workshops have been held at the AAMAS conferences in Utrecht, The Netherlands, in July 2005, and in Estoril, Portugal, in May 2008. The 13 papers presented here are extended versions of carefully reviewed and selected contributions to the workshops. The topics covered are business interoperability; organizations and virtual institutions; modeling multiagent systems; agent interaction; and security. The main goal was to collect approaches for the application of agent technologies in these areas. Current trends in the development of agent technologies are compared with recent developments in service-oriented and model-driven system design, with respect to their ability to solve interoperability problems.**

Human-Centric Information Processing Through Granular Modelling

Springer Science & Business Media **Information granules and their processing permeate a way in which we perceive the world, carryout processing at the conceptual (abstract) level, and communicate our findings to the surrounding environment. The importance of information granulation becomes even more apparent when we are faced with a rapidly growing flood of data, become challenged to make decisions in complex data settings and are required to appreciate the context from which the data is derived. Human centricity of systems that claim to be “intelligent” and the granular computing come hand in hand. It is not surprising at all to witness that the paradigm of Granular Computing has started to gain visibility and continues along this path by gathering interest from the circles of academics and practitioners. It is quite remarkable that the spectrum of application and research areas that have adopted information granulation as a successful strategy for dealing with information complexity covers such diverse fields as bioinformatics, image understanding, environmental monitoring, urban sustainability, to mention few most visible in the literature. Undoubtedly, there are two important aspects of Granular Computing that are worth stressing. First, there are several formalisms in which information granules are articulated so be intervals (sets), fuzzy sets, rough sets, soft sets, approximate sets, near sets and alike. They are complementary and each of them offers some interesting views at the complexity of the world and cyberspace.**

High-Performance Modelling and Simulation for Big Data Applications

Selected Results of the COST Action IC1406 cHiPSet

Springer **This open access book was prepared as a Final Publication of the COST Action IC1406 “High-Performance Modelling and Simulation for Big Data Applications (cHiPSet)“ project. Long considered important pillars of the scientific method, Modelling and Simulation have evolved from traditional discrete numerical methods to complex data-intensive continuous analytical optimisations. Resolution, scale, and accuracy have become essential to predict and analyse natural and complex systems in science and engineering. When their level of abstraction raises to have a better discernment of the domain at hand, their representation gets increasingly demanding for computational and data resources. On the other hand, High Performance Computing typically entails the effective use of parallel and distributed processing units coupled with efficient storage, communication and visualisation systems to underpin complex data-intensive applications in distinct scientific and technical domains. It is then arguably required to have a seamless interaction of High Performance Computing with Modelling and Simulation in order to store, compute, analyse, and visualise large data sets in science and engineering. Funded by the European Commission, cHiPSet has provided a dynamic trans-European forum for their members and distinguished guests to openly discuss novel perspectives and topics of interests for these two communities. This cHiPSet compendium presents a set of selected case studies related to healthcare, biological data, computational advertising, multimedia, finance, bioinformatics, and telecommunications.**

Intelligent Techniques for Warehousing and Mining Sensor Network Data

IGI Global **"This book focuses on the relevant research theme of warehousing and mining sensor network data, specifically for the database, data warehousing and data mining research communities"--Provided by publisher.**

Tools and Methods of Program Analysis

5th International Conference, TMPA 2019, Tbilisi, Georgia, November 7–9, 2019, Revised Selected Papers

Springer Nature **This book constitutes the refereed proceedings of the 5th International Conference on Tools and Methods for Program Analysis, TMPA 2019, held in Tbilisi, Georgia, in November 2019. The 14 revised full papers and 2 revised short papers presented together with one keynote paper were carefully reviewed and selected from 41 submissions. The papers deal with topics such as software test automation, static program analysis, verification, dynamic methods of program analysis, testing and analysis of parallel and distributed systems, testing and analysis of high-load and high-availability systems, analysis and verification of hardware and software systems, methods of building quality software, tools for software analysis, testing and verification.**

Modeling and Processing for Next-Generation Big-Data Technologies

With Applications and Case Studies

Springer **This book covers the latest advances in Big Data technologies and provides the readers with a comprehensive review of the state-of-the-art in Big Data processing, analysis, analytics, and other related topics. It presents new models, algorithms, software solutions and methodologies, covering the full data cycle, from data gathering to their visualization and interaction, and includes a set of case studies and best practices. New research issues, challenges and opportunities shaping the future agenda in the field of Big Data are also identified and presented throughout the book, which is intended for researchers, scholars, advanced students, software developers and practitioners working**

at the forefront in their field.

Adaptive Health Management Information Systems

Concepts, Cases, & Practical Applications

Jones & Bartlett Learning **Health management information systems : a managerial perspective / Joseph Tan -- Health management information systems executives : roles and responsibilities of chief executive officers and chief information officers in healthcare services organizations / Joseph Tan -- Online health information seeking : access and digital equity considerations / Fay Cobb Payton and Joseph Tan -- Health management information system enterprise software : the new generation of HMIS administrative applications / Joshia Tan with Joseph Tan -- Community health information networks : building virtual communities and networking health provider organizations / Jayfus T. Doswell, SherRhonda R. Gibbs, and Kelley M. Duncanson -- Trending toward patient-centric management systems / Joseph Tan with Joshia Tan -- Health management information system integration : achieving systems interoperability with Web services / J.K. Zhang and Joseph Tan -- Health management strategic information system planning/information requirements / Jon Blue and Joseph Tan -- Systems development : health management information system analysis and developmental methodologies / Joseph Tan -- Data stewardship : foundation for health management information system design, implementation, and evaluation / Bryan Bennett -- Managing health management information system projects : system implementation and information technology services management / Joseph Tan -- Health management information system standards : standards adoption in healthcare information technologies / Sanjay P. Sood ... [et al.] -- Health management information system governance, policy, and international perspectives : HMIS globalization through e-health / Anantachai Panjamapirom and Philip F. Musa -- Health management information system innovation : managing innovation diffusion in healthcare services organizations / Tugrul U. Daim, Nuri Basoglu, and Joseph Tan.**

Developments in Information & Knowledge Management for Business Applications

Volume 1

Springer Nature **This book provides solutions to manage information competently in order to increase its business usage. The information/knowledge business is a highly-dynamic evolving industry, and the novel methodologies and practices for the business information processing, as well as application of mathematical models to the business analytics and efficient management, are the most essential for the decision-making and further development of this field. Consequently, in this series subline first volume, the authors study challenges and opportunities, as well as embrace different aspects of business information processing for an efficient enterprise management. The authors cover also methods and techniques, as well as strategies for the efficient business information processing for management. Besides, the authors analyse strategies for lowering business information/data loss, while improving customer satisfaction and maintenance levels. The major goal is to analyse the key aspects of managerial implications on the informational business on the continuous basis.**

Fast and Scalable Cloud Data Management

Springer Nature **The unprecedented scale at which data is both produced and consumed today has generated a large demand for scalable data management solutions facilitating fast access from all over the world. As one consequence, a plethora of non-relational, distributed NoSQL database systems have risen in recent years and today's data management system landscape has thus become somewhat hard to overlook. As another consequence, complex polyglot designs and elaborate schemes for data distribution and delivery have become the norm for building applications that connect users and organizations across the globe – but choosing the right combination of systems for a given use case has become increasingly difficult as well. To help practitioners stay on top of that challenge, this book presents a comprehensive overview and classification of the current system landscape in cloud data management as**

well as a survey of the state-of-the-art approaches for efficient data distribution and delivery to end-user devices. The topics covered thus range from NoSQL storage systems and polyglot architectures (backend) over distributed transactions and Web caching (network) to data access and rendering performance in the client (end-user). By distinguishing popular data management systems by data model, consistency guarantees, and other dimensions of interest, this book provides an abstract framework for reasoning about the overall design space and the individual positions claimed by each of the systems therein. Building on this classification, this book further presents an application-driven decision guidance tool that breaks the process of choosing a set of viable system candidates for a given application scenario down into a straightforward decision tree.

Proceedings of the Third SIAM International Conference on Data Mining

SIAM **The third SIAM International Conference on Data Mining provided an open forum for the presentation, discussion and development of innovative algorithms, software and theories for data mining applications and data intensive computation. This volume includes 21 research papers.**

Data Science and Big Data Analytics

ACM-WIR 2018

Springer **This book presents conjectural advances in big data analysis, machine learning and computational intelligence, as well as their potential applications in scientific computing. It discusses major issues pertaining to big data analysis using computational intelligence techniques, and the conjectural elements are supported by simulation and modelling applications to help address real-world problems. An extensive bibliography is provided at the end of each chapter. Further, the main content is supplemented by a wealth of figures, graphs, and tables, offering a valuable guide for researchers in the field of big data analytics and computational intelligence.**

Designing Data Spaces

The Ecosystem Approach to Competitive Advantage

Springer Nature **This open access book provides a comprehensive view on data ecosystems and platform economics from methodical and technological foundations up to reports from practical implementations and applications in various industries. To this end, the book is structured in four parts: Part I “Foundations and Contexts” provides a general overview about building, running, and governing data spaces and an introduction to the IDS and GAIA-X projects. Part II “Data Space Technologies” subsequently details various implementation aspects of IDS and GAIA-X, including eg data usage control, the usage of blockchain technologies, or semantic data integration and interoperability. Next, Part III describes various “Use Cases and Data Ecosystems” from various application areas such as agriculture, healthcare, industry, energy, and mobility. Part IV eventually offers an overview of several “Solutions and Applications”, eg including products and experiences from companies like Google, SAP, Huawei, T-Systems, Innopay and many more. Overall, the book provides professionals in industry with an encompassing overview of the technological and economic aspects of data spaces, based on the International Data Spaces and Gaia-X initiatives. It presents implementations and business cases and gives an outlook to future developments. In doing so, it aims at proliferating the vision of a social data market economy based on data spaces which embrace trust and data sovereignty.**

Applied Data-Centric Social Sciences

Concepts, Data, Computation, and Theory

Springer **Applied data-centric social sciences aim to develop both methodology and practical applications of various fields of social sciences and businesses with rich data. Specifically, in the social sciences, a vast amount of data on human activities may be useful for understanding collective human nature. In this book, the author introduces several mathematical techniques for handling a huge volume of data and analysing collective human behaviour. The book is constructed from data-oriented investigation, with mathematical methods and expressions used for dealing with data**

for several specific problems. The fundamental philosophy underlying the book is that both mathematical and physical concepts are determined by the purposes of data analysis. This philosophy is shown throughout exemplar studies of several fields in socio-economic systems. From a data-centric point of view, the author proposes a concept that may change people's minds and cause them to start thinking from the basis of data. Several goals underlie the chapters of the book. The first is to describe mathematical and statistical methods for data analysis, and toward that end the author delineates methods with actual data in each chapter. The second is to find a cyber-physical link between data and data-generating mechanisms, as data are always provided by some kind of data-generating process in the real world. The third goal is to provide an impetus for the concepts and methodology set forth in this book to be applied to socio-economic systems.

Design, User Experience, and Usability: User Experience Design for Everyday Life Applications and Services

Third International Conference, DUXU 2014, Held as Part of HCI International 2014, Heraklion, Crete, Greece, June 22-27, 2014, Proceedings, Part III

Springer **The four-volume set LNCS 8517, 8518, 8519 and 8520 constitutes the proceedings of the Third International Conference on Design, User Experience, and Usability, DUXU 2014, held as part of the 16th International Conference on Human-Computer Interaction, HCII 2014, held in Heraklion, Crete, Greece in June 2014, jointly with 13 other thematically similar conferences. The total of 1476 papers and 220 posters presented at the HCII 2014 conferences were carefully reviewed and selected from 4766 submissions. These papers address the latest research and development efforts and highlight the human aspects of design and use of computing systems. The papers accepted for presentation thoroughly cover the entire field of Human-Computer Interaction, addressing major advances in**

knowledge and effective use of computers in a variety of application areas. The total of 256 contributions included in the DUXU proceedings were carefully reviewed and selected for inclusion in this four-volume set. The 69 papers included in this volume are organized in topical sections on design for health; design for reading and learning; design for mobility, transport and safety; design for rural, low literacy and developing communities; design for environment and sustainability; design for human-computer symbiosis.