

Data Mining A Tutorial Based Primer

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Data Mining and Machine Learning - Mohammed J. Zaki 2019-12-31
The fundamental algorithms in data mining and machine learning form the basis of data science, utilizing automated methods to analyze patterns and models for all kinds of data in applications ranging from scientific discovery to business analytics. This textbook for senior undergraduate and graduate courses provides a comprehensive, in-depth overview of data mining, machine learning and statistics, offering solid guidance for students, researchers, and practitioners. The book lays the foundations of data analysis, pattern mining, clustering, classification and regression, with a focus on the algorithms and the underlying algebraic, geometric, and probabilistic concepts. New to this second edition is an entire part devoted to regression methods, including neural networks and deep learning.

Select ed Readi ngs on Dat abase Technol ogi es and Appl i cati ons,
Terry 2008-08-31

"This book offers research articles focused on key issues concerning the development, design, and analysis of databases"--Provided by publisher.

[The Oxford Handbook of Law, Regulation and Technology](#) - Roger Brownsword 2017-07-25

The variety, pace, and power of technological innovations that have emerged in the 21st Century have been breathtaking. These

technological developments, which include advances in networked information and communications, biotechnology, neurotechnology, nanotechnology, robotics, and environmental engineering technology, have raised a number of vital and complex questions. Although these technologies have the potential to generate positive transformation and help address 'grand societal challenges', the novelty associated with technological innovation has also been accompanied by anxieties about their risks and destabilizing effects. Is there a potential harm to human health or the environment? What are the ethical implications? Do these innovations erode or antagonize values such as human dignity, privacy, democracy, or other norms underpinning existing bodies of law and regulation? These technological developments have therefore spawned a nascent but growing body of 'law and technology' scholarship, broadly concerned with exploring the legal, social and ethical dimensions of technological innovation. This handbook collates the many and varied strands of this scholarship, focusing broadly across a range of new and emerging technology and a vast array of social and policy sectors, through which leading scholars in the field interrogate the interfaces between law, emerging technology, and regulation. Structured in five parts, the handbook (I) establishes the collection of essays within existing scholarship concerned with law and technology as well as

regulatory governance; (II) explores the relationship between technology development by focusing on core concepts and values which technological developments implicate; (III) studies the challenges for law in responding to the emergence of new technologies, examining how legal norms, doctrine and institutions have been shaped, challenged and destabilized by technology, and even how technologies have been shaped by legal regimes; (IV) provides a critical exploration of the implications of technological innovation, examining the ways in which technological innovation has generated challenges for regulators in the governance of technological development, and the implications of employing new technologies as an instrument of regulatory governance; (V) explores various interfaces between law, regulatory governance, and new technologies across a range of key social domains.

Applications of Machine Learning - Prashant Johri 2020-05-04

This book covers applications of machine learning in artificial intelligence. The specific topics covered include human language, heterogeneous and streaming data, unmanned systems, neural information processing, marketing and the social sciences, bioinformatics and robotics, etc. It also provides a broad range of techniques that can be successfully applied and adopted in different areas. Accordingly, the book offers an interesting and insightful read for scholars in the areas of computer vision, speech recognition, healthcare, business, marketing, and bioinformatics.

Terrorist Profiling and Law Enforcement - Noel McGuirk 2021-02-11

This book analyses the usefulness of terrorist profiling utilised by law enforcement officers as a pre-emptive means to assist them in the detection, prevention and deterrence of terrorism and/or its preparatory activities. It explores two main themes arising from the phenomenon of terrorist profiling: the lawfulness of terrorist profiling and the utility of profiling. These two themes are explored in three separate parts. Firstly, the book begins by drawing upon human rights concerns arising from the use of terrorist profiling by law enforcement officers. Secondly, an analytical framework capable of making determinations on the usefulness of terrorist profiling. This framework develops a profiling

spectrum that ranges from formal and informal manifestations of terrorist profiling that forms the basis for evaluating its usefulness. Finally, the book presents an examination of various manifestations of terrorist profiling by separating the analysis of the 'construction' of profiles on the one hand, from their 'application,' on the other, so as to be able to identify and examine profiling's usefulness as a technique to assist law enforcement officers make predictions about likely offender characteristics. This book ultimately concludes that terrorist profiling should only be conducted by undertaking a systematic assessment of the construction of profiles separate from the application of profiles whilst simultaneously taking into account fundamental human rights concerns with the practice of terrorist profiling. The work will be an essential resource for academics, law enforcement officers and lawyers in the disciplines of law, criminology, human rights, criminal justice and policing. As the book engages with terrorist profiling, it will also be of interest to those engaged in the psychology of terrorism.

Advances in Data Mining. Applications and Theoretical Aspects - Petra Perner 2016-06-27

This book constitutes the refereed proceedings of the 16th Industrial Conference on Advances in Data Mining, ICDM 2016, held in New York, NY, USA, in July 2016. The 33 revised full papers presented were carefully reviewed and selected from 100 submissions. The topics range from theoretical aspects of data mining to applications of data mining, such as in multimedia data, in marketing, in medicine, and in process control, industry, and society.

R and Data Mining - Yanchang Zhao 2012-12-31

R and Data Mining introduces researchers, post-graduate students, and analysts to data mining using R, a free software environment for statistical computing and graphics. The book provides practical methods for using R in applications from academia to industry to extract knowledge from vast amounts of data. Readers will find this book a valuable guide to the use of R in tasks such as classification and prediction, clustering, outlier detection, association rules, sequence analysis, text mining, social network analysis, sentiment analysis, and

more. Data mining techniques are growing in popularity in a broad range of areas, from banking to insurance, retail, telecom, medicine, research, and government. This book focuses on the modeling phase of the data mining process, also addressing data exploration and model evaluation. With three in-depth case studies, a quick reference guide, bibliography, and links to a wealth of online resources, R and Data Mining is a valuable, practical guide to a powerful method of analysis. Presents an introduction into using R for data mining applications, covering most popular data mining techniques Provides code examples and data so that readers can easily learn the techniques Features case studies in real-world applications to help readers apply the techniques in their work

Advances in Knowledge Discovery and Data Mining, Part II - Pang-Ning Tan 2012-05-10

The two-volume set LNAI 7301 and 7302 constitutes the refereed proceedings of the 16th Pacific-Asia Conference on Knowledge Discovery and Data Mining, PAKDD 2012, held in Kuala Lumpur, Malaysia, in May 2012. The total of 20 revised full papers and 66 revised short papers were carefully reviewed and selected from 241 submissions. The papers present new ideas, original research results, and practical development experiences from all KDD-related areas. The papers are organized in topical sections on supervised learning: active, ensemble, rare-class and online; unsupervised learning: clustering, probabilistic modeling in the first volume and on pattern mining: networks, graphs, time-series and outlier detection, and data manipulation: pre-processing and dimension reduction in the second volume.

Data Requirements for Integrated Urban Water Management - Tim Fletcher 2008-01-07

Integrated urban water management relies on data allowing us to analyse, understand and predict the behaviour of the individual water cycle components and their interactions. The concomitant monitoring of the complex of urban water system elements makes it possible to grasp the entirety of relations among the various components of the urban water cycle and so develop a holistic approach to solving urban water problems. Data Requirements for Integrated Urban Water Managements

- issuing from UNESCO's International Hydrological Programme project on this topic - is geared towards improving integrated urban water management by providing guidance on the collection, validation, storage, assessment and utilization of the relevant data. The first part of this volume describes general principles for developing a monitoring programme in support of sustainable urban water management. The second part examines in detail the monitoring of individual water cycle components. Two case studies in the final part illustrating attempts to deliver an integrated monitoring system help demonstrate the fundamental principles of sustainable urban water management elaborated here.

Data Mining: Concepts, Methodologies, Tools, and Applications - Management Association, Information Resources 2012-11-30

Data mining continues to be an emerging interdisciplinary field that offers the ability to extract information from an existing data set and translate that knowledge for end-users into an understandable way. Data Mining: Concepts, Methodologies, Tools, and Applications is a comprehensive collection of research on the latest advancements and developments of data mining and how it fits into the current technological world.

Social Networks with Rich Edge Semantics - Quan Zheng 2017-08-15
Social Networks with Rich Edge Semantics introduces a new mechanism for representing social networks in which pairwise relationships can be drawn from a range of realistic possibilities, including different types of relationships, different strengths in the directions of a pair, positive and negative relationships, and relationships whose intensities change with time. For each possibility, the book shows how to model the social network using spectral embedding. It also shows how to compose the techniques so that multiple edge semantics can be modeled together, and the modeling techniques are then applied to a range of datasets. Features Introduces the reader to difficulties with current social network analysis, and the need for richer representations of relationships among nodes, including accounting for intensity, direction, type, positive/negative, and changing intensities over time Presents a novel

mechanism to allow social networks with qualitatively different kinds of relationships to be described and analyzed Includes extensions to the important technique of spectral embedding, shows that they are mathematically well motivated and proves that their results are appropriate Shows how to exploit embeddings to understand structures within social networks, including subgroups, positional significance, link or edge prediction, consistency of role in different contexts, and net flow of properties through a node Illustrates the use of the approach for real-world problems for online social networks, criminal and drug smuggling networks, and networks where the nodes are themselves groups Suitable for researchers and students in social network research, data science, statistical learning, and related areas, this book will help to provide a deeper understanding of real-world social networks.

Just Enough R! Richard J. Roiger 2020-05-20

Just Enough R! An Interactive Approach to Machine Learning and Analytics presents just enough of the R language, machine learning algorithms, statistical methodology, and analytics for the reader to learn how to find interesting structure in data. The approach might be called "seeing then doing" as it first gives step-by-step explanations using simple, understandable examples of how the various machine learning algorithms work independent of any programming language. This is followed by detailed scripts written in R that apply the algorithms to solve nontrivial problems with real data. The script code is provided, allowing the reader to execute the scripts as they study the explanations given in the text. Features Gets you quickly using R as a problem-solving tool Uses RStudio's integrated development environment Shows how to interface R with SQLite Includes examples using R's Rattle graphical user interface Requires no prior knowledge of R, machine learning, or computer programming Offers over 50 scripts written in R, including several problem-solving templates that, with slight modification, can be used again and again Covers the most popular machine learning techniques, including ensemble-based methods and logistic regression Includes end-of-chapter exercises, many of which can be solved by modifying existing scripts Includes datasets from several areas, including

business, health and medicine, and science About the Author Richard J. Roiger is a professor emeritus at Minnesota State University, Mankato, where he taught and performed research in the Computer and Information Science Department for over 30 years.

Data-driven BIM for Energy Efficient Building Design - Saeed Banihashemi 2022-12-16

This research book aims to conceptualise the scale and spectrum of Building Information Modelling (BIM) and Artificial Intelligence (AI) approaches in energy efficient building design and to develop its functional solutions with a focus on four crucial aspects of building envelop, building layout, occupant behaviour and heating, ventilation and air-conditioning (HVAC) systems. Drawn from theoretical development on the sustainability, informatics and optimisation paradigms in built environment, the energy efficient building design will be marked through the power of data and BIM-intelligent agents during the design phase. It will be further developed via smart derivatives to reach a harmony in the systematic integration of energy efficient building design solutions, a gap that is missed in the extant literature and that this book aims to fill. This approach will inform a vision for future and provide a framework to shape and respond to our built environment and how it transforms the way we design and build. By considering the balance of BIM, AI and energy efficient outcomes, the future development of buildings will be regenerated in a direction that is sustainable in the long run. This book is essential reading for those in the AEC industry as well as computer scientists.

Foundations of Computational Intelligence - Ajith Abraham 2009-04-27

Foundations of Computational Intelligence Volume 6: Data Mining: Theoretical Foundations and Applications Finding information hidden in data is as theoretically difficult as it is practically important. With the objective of discovering unknown patterns from data, the methodologies of data mining were derived from statistics, machine learning, and artificial intelligence, and are being used successfully in application areas such as bioinformatics, business, health care, banking, retail, and

many others. Advanced representation schemes and computational intelligence techniques such as rough sets, neural networks; decision trees; fuzzy logic; evolutionary algorithms; artificial immune systems; swarm intelligence; reinforcement learning, association rule mining, Web intelligence paradigms etc. have proved valuable when they are applied to Data Mining problems. Computational tools or solutions based on intelligent systems are being used with great success in Data Mining applications. It is also observed that strong scientific advances have been made when issues from different research areas are integrated. This Volume comprises of 15 chapters including an overview chapter providing an up-to-date and state-of-the research on the applications of Computational Intelligence techniques for Data Mining. The book is divided into 3 parts: Part-I: Data Click Streams and Temporal Data Mining Part-II: Text and Rule Mining Part-III: Applications Part I on Data Click Streams and Temporal Data Mining contains four chapters that describe several approaches in Data Click Streams and Temporal Data Mining.

Large-Scale Machine Learning in the Earth Sciences - Ashok N. Srivastava 2017-08-01

From the Foreword: "While large-scale machine learning and data mining have greatly impacted a range of commercial applications, their use in the field of Earth sciences is still in the early stages. This book, edited by Ashok Srivastava, Ramakrishna Nemani, and Karsten Steinhäuser, serves as an outstanding resource for anyone interested in the opportunities and challenges for the machine learning community in analyzing these data sets to answer questions of urgent societal interest...I hope that this book will inspire more computer scientists to focus on environmental applications, and Earth scientists to seek collaborations with researchers in machine learning and data mining to advance the frontiers in Earth sciences." --Vipin Kumar, University of Minnesota Large-Scale Machine Learning in the Earth Sciences provides researchers and practitioners with a broad overview of some of the key challenges in the intersection of Earth science, computer science, statistics, and related fields. It explores a wide range of topics and

provides a compilation of recent research in the application of machine learning in the field of Earth Science. Making predictions based on observational data is a theme of the book, and the book includes chapters on the use of network science to understand and discover teleconnections in extreme climate and weather events, as well as using structured estimation in high dimensions. The use of ensemble machine learning models to combine predictions of global climate models using information from spatial and temporal patterns is also explored. The second part of the book features a discussion on statistical downscaling in climate with state-of-the-art scalable machine learning, as well as an overview of methods to understand and predict the proliferation of biological species due to changes in environmental conditions. The problem of using large-scale machine learning to study the formation of tornadoes is also explored in depth. The last part of the book covers the use of deep learning algorithms to classify images that have very high resolution, as well as the unmixing of spectral signals in remote sensing images of land cover. The authors also apply long-tail distributions to geoscience resources, in the final chapter of the book.

Database Technologies: Concepts, Methodologies, Tools, and Applications - Erickson, John 2009-02-28

"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.

Clustering for Data Mining - Boris Mirkin 2005-04-29

Often considered more as an art than a science, the field of clustering has been dominated by learning through examples and by techniques chosen almost through trial-and-error. Even the most popular clustering methods--K-Means for partitioning the data set and Ward's method for hierarchical clustering--have lacked the theoretical attention that would be expected. Data Science and Analytics with Python - Jesus Rogel-Salazar 2018-02-05 Data Science and Analytics with Python is designed for practitioners in data science and data analytics in both academic and business environments. The aim is to present the reader with the main concepts used in data science using tools developed in Python, such as SciKit-

learn, Pandas, Numpy, and others. The use of Python is of particular interest, given its recent popularity in the data science community. The book can be used by seasoned programmers and newcomers alike. The book is organized in a way that individual chapters are sufficiently independent from each other so that the reader is comfortable using the contents as a reference. The book discusses what data science and analytics are, from the point of view of the process and results obtained. Important features of Python are also covered, including a Python primer. The basic elements of machine learning, pattern recognition, and artificial intelligence that underpin the algorithms and implementations used in the rest of the book also appear in the first part of the book. Regression analysis using Python, clustering techniques, and classification algorithms are covered in the second part of the book. Hierarchical clustering, decision trees, and ensemble techniques are also explored, along with dimensionality reduction techniques and recommendation systems. The support vector machine algorithm and the Kernel trick are discussed in the last part of the book. About the Author Dr. Jesús Rogel-Salazar is a Lead Data scientist with experience in the field working for companies such as AKQA, IBM Data Science Studio, Dow Jones and others. He is a visiting researcher at the Department of Physics at Imperial College London, UK and a member of the School of Physics, Astronomy and Mathematics at the University of Hertfordshire, UK. He obtained his doctorate in physics at Imperial College London for work on quantum atom optics and ultra-cold matter. He has held a position as senior lecturer in mathematics as well as a consultant in the financial industry since 2006. He is the author of the book Essential Matlab and Octave, also published by CRC Press. His interests include mathematical modelling, data science, and optimization in a wide range of applications including optics, quantum mechanics, data journalism, and finance.

Data Warehousing and Mining: Concepts, Methodologies, Tools, and Applications - Wang, John 2008-05-31

In recent years, the science of managing and analyzing large datasets has emerged as a critical area of research. In the race to answer vital

questions and make knowledgeable decisions, impressive amounts of data are now being generated at a rapid pace, increasing the opportunities and challenges associated with the ability to effectively analyze this data.

Data Mining- Richard J. Roiger 2017

"Provides a comprehensive introduction to data mining with a focus on model building and testing, as well as on interpreting and validating results. The text guides students to understand how data mining can be employed to solve real problems and recognize whether a data mining solution is a feasible alternative for a specific problem. Fundamental data mining strategies, techniques, and evaluation methods are presented and implemented with the help of two well known software tools."--

Cooperative Design, Visualization, and Engineering - Yuhua Luo 2020-10-16

This book constitutes the proceedings of the 17th International Conference on Cooperative Design, Visualization, and Engineering, CDVE 2020, held in Bangkok, Thailand, in October 2020.* The 33 full papers and 7 short papers presented were carefully reviewed and selected from 74 submissions. The achievement, progress and future challenges are reported in areas such as health care, industrial design, banking IT systems, cultural activities support, operational maritime cybersecurity assurance, emotion communication, and social network data analytics. * The conference was held virtually due to the COVID-19 pandemic.

*Optimizing Big Data Management and Industrial Systems With Intelligent Techniques*Öner, Sultan Ceren 2018-12-07

In order to survive an increasingly competitive market, corporations must adopt and employ optimization techniques and big data analytics for more efficient product development and value creation. Understanding the strengths, weaknesses, opportunities, and threats of new techniques and manufacturing processes allows companies to succeed during the rise of Industry 4.0. *Optimizing Big Data Management and Industrial Systems With Intelligent Techniques* explores optimization techniques, recommendation systems, and

manufacturing processes that support the evaluation of cyber-physical systems, end-to-end engineering, and digitalized control systems. Featuring coverage on a broad range of topics such as digital economy, fuzzy logic, and data linkage methods, this book is ideally designed for manufacturers, engineers, professionals, managers, academicians, and students.

Encyclopedia of Information Science and Technology, Third Edition (WTCS 2009) - Yanwen Wu 2012-03-13
Khosrow-Pour, Mehdi 2014-07-31

"This 10-volume compilation of authoritative, research-based articles contributed by thousands of researchers and experts from all over the world emphasized modern issues and the presentation of potential opportunities, prospective solutions, and future directions in the field of information science and technology"--Provided by publisher.

Data Mining - Richard J. Roiger 2017-01-06

Data Mining: A Tutorial-Based Primer, Second Edition provides a comprehensive introduction to data mining with a focus on model building and testing, as well as on interpreting and validating results. The text guides students to understand how data mining can be employed to solve real problems and recognize whether a data mining solution is a feasible alternative for a specific problem. Fundamental data mining strategies, techniques, and evaluation methods are presented and implemented with the help of two well-known software tools. Several new topics have been added to the second edition including an introduction to Big Data and data analytics, ROC curves, Pareto lift charts, methods for handling large-sized, streaming and imbalanced data, support vector machines, and extended coverage of textual data mining. The second edition contains tutorials for attribute selection, dealing with imbalanced data, outlier analysis, time series analysis, mining textual data, and more. The text provides in-depth coverage of RapidMiner Studio and Weka's Explorer interface. Both software tools are used for stepping students through the tutorials depicting the knowledge discovery process. This allows the reader maximum flexibility for their hands-on data mining experience.

Intelligent Databases - Zongmin Ma 2007-01-01

"This book integrates data management in databases with intelligent data processing and analysis in artificial intelligence. It challenges today's database technology and promotes its evolution"--Provided by publisher.

Advanced Technology in Teaching - Proceedings of the 2009 3rd International Conference on Teaching and Computational Science

(WTCS 2009) - Yanwen Wu 2012-03-13

The volume includes a set of selected papers extended and revised from the International Conference on Teaching and Computational Science (WTCS 2009) held on December 19- 20, 2009, Shenzhen, China. WTCS 2009 best papers Volume 2 is to provide a forum for researchers, educators, engineers, and government officials involved in the general areas of Education, Psychology and Computer Science to disseminate their latest research results and exchange views on the future research directions of these fields. 128 high-quality papers are included in the volume. Each paper has been peer-reviewed by at least 2 program committee members and selected by the volume editor Prof. Wu. On behalf of the WTCS 2009, we would like to express our sincere appreciation to all of authors and referees for their efforts reviewing the papers. Hoping you can find lots of profound research ideas and results on the related fields of Education, Psychology and Computer Science.

Intelligent IoT Systems in Personalized Health Care - Anurag Kumar Sangaiah 2020-12-01

Intelligent IoT Systems in Personalized Health Care delivers a significant forum for the technical advancement of IoMT learning in parallel computing environments across biomedical engineering diversified domains and its applications. Pursuing an interdisciplinary approach, the book focuses on methods used to identify and acquire valid, potentially useful knowledge sources. The book presents novel, in-depth, fundamental research contributions from a methodological/application perspective to help readers understand the fusion of AI with IoT and its capabilities in solving a diverse range of problems for biomedical engineering and its real-world personalized health care applications. The book is well suited for researchers exploring the significance of IoT

based architecture to perform predictive analytics of user activities in sustainable health. Presents novel, in-depth, fundamental research contributions from a methodological/application perspective to help readers understand the fusion of AI with IoT Illustrates state-of-the-art developments in new theories and applications of IoMT techniques as applied to parallel computing environments in biomedical engineering systems Presents concepts and technologies successfully used in the implementation of today's intelligent data-centric IoT systems and Edge-Cloud-Big data

Advances in Computer Science and Ubiquitous Computing - James J. (Jong Hyuk) Park 2016-12-01

This book presents the combined proceedings of the 8th International Conference on Computer Science and its Applications (CSA-16) and the 11st International Conference on Ubiquitous Information Technologies and Applications (CUTE 2016), both held in Bangkok, Thailand, December 19 - 21, 2016. The aim of these two meetings was to promote discussion and interaction among academics, researchers and professionals in the field of ubiquitous computing technologies. These proceedings reflect the state-of-the-art in the development of computational methods, involving theory, algorithm, numerical simulation, error and uncertainty analysis and novel application of new processing techniques in engineering, science, and other disciplines related to ubiquitous computing.

Human Capital Systems, Analytics, and Data Mining - Robert C. Hughes 2018-09-03

Human Capital Systems, Analytics, and Data Mining provides human capital professionals, researchers, and students with a comprehensive and portable guide to human capital systems, analytics and data mining. The main purpose of this book is to provide a rich tool set of methods and tutorials for Human Capital Management Systems (HCMS) database modeling, analytics, interactive dashboards, and data mining that is independent of any human capital software vendor offerings and is equally usable and portable among both commercial and internally developed HCMS. The book begins with an overview of HCMS, including

coverage of human resource systems history and current HCMS Computing Environments. It next explores relational and dimensional database management concepts and principles. HCMS Instructional databases developed by the Author for use in Graduate Level HCMS and Compensation Courses are used for database modeling and dashboard design exercises. Exciting knowledge discovery and research Tutorials and Exercises using Online Analytical Processing (OLAP) and data mining tools through replication of actual original pay equity research by the author are included. New findings concerning Gender Based Pay Equity Research through the lens Comparable Worth and Occupational Mobility are covered extensively in Human Capital Metrics, Analytics and Data Mining Chapters.

Web Data Mining - Bing Liu 2011-06-25

Liu has written a comprehensive text on Web mining, which consists of two parts. The first part covers the data mining and machine learning foundations, where all the essential concepts and algorithms of data mining and machine learning are presented. The second part covers the key topics of Web mining, where Web crawling, search, social network analysis, structured data extraction, information integration, opinion mining and sentiment analysis, Web usage mining, query log mining, computational advertising, and recommender systems are all treated both in breadth and in depth. His book thus brings all the related concepts and algorithms together to form an authoritative and coherent text. The book offers a rich blend of theory and practice. It is suitable for students, researchers and practitioners interested in Web mining and data mining both as a learning text and as a reference book. Professors can readily use it for classes on data mining, Web mining, and text mining. Additional teaching materials such as lecture slides, datasets, and implemented algorithms are available online.

Advanced Data Mining and Applications - Longbing Cao 2010-11-18
With the ever-growing power of generating, transmitting, and collecting huge amounts of data, information overload is now an imminent problem to mankind. The overwhelming demand for information processing is not just about a better understanding of data, but also a better usage of data

in a timely fashion. Data mining, or knowledge discovery from databases, is proposed to gain insight into aspects of data and to help people make informed, sensible, and better decisions. At present, growing attention has been paid to the study, development, and application of data mining. As a result there is an urgent need for sophisticated techniques and tools that can handle new fields of data mining, e. g. , spatial data mining, biomedical data mining, and mining on high-speed and time-variant data streams. The knowledge of data mining should also be expanded to new applications. The 6th International Conference on Advanced Data Mining and Applications (ADMA2010) aimed to bring together the experts on data mining throughout the world. It provided a leading international forum for the dissemination of original research results in advanced data mining techniques, applications, algorithms, software and systems, and different applied disciplines. The conference attracted 361 online submissions from 34 different countries and areas. All full papers were peer reviewed by at least three members of the Program Committee composed of international experts in data mining fields. A total number of 118 papers were accepted for the conference. Amongst them, 63 papers were selected as regular papers and 55 papers were selected as short papers.

Knowledge-Oriented Applications in Data Mining - Kimito Funatsu
2011-01-21

The progress of data mining technology and large public popularity establish a need for a comprehensive text on the subject. The series of books entitled by 'Data Mining' address the need by presenting in-depth description of novel mining algorithms and many useful applications. In addition to understanding each section deeply, the two books present useful hints and strategies to solving problems in the following chapters. The contributing authors have highlighted many future research directions that will foster multi-disciplinary collaborations and hence will lead to significant development in the field of data mining.

Information Systems - Marinos Themistocleous 2022

This book constitutes selected papers from the 18th European, Mediterranean, and Middle Eastern Conference, EMCIS 2021, which

took place during December 8-9, 2021. The conference was initially planned to take place in Dubai, UAE, but had to change to an online event due to the COVID-19 pandemic. EMCIS covers technical, organizational, business, and social issues in the application of information technology and is dedicated to the definition and establishment of Information Systems (IS) as a discipline of high impact for IS professionals and practitioners. It focuses on approaches that facilitate the identification of innovative research of significant relevance to the IS discipline following sound research methodologies that lead to results of measurable impact. The 54 full papers presented in this volume were carefully reviewed and selected from a total of 155 submissions. They were organized in topical sections named: Big Data and Analytics; Blockchain Technology and Applications; Cloud Computing; Digital Governance; Digital Services and Social Media; Emerging Computing Technologies and Trends for Business Process Management; Healthcare Information Systems; Information Systems security and Information Privacy Protection; Innovative Research Projects; IT Governance and Alignment; and Management and Organisational Issues in Information Systems.

Big Data - Nasir Raheem 2019-02-21

Big Data: A Tutorial-Based Approach explores the tools and techniques used to bring about the marriage of structured and unstructured data. It focuses on Hadoop Distributed Storage and MapReduce Processing by implementing (i) Tools and Techniques of Hadoop Eco System, (ii) Hadoop Distributed File System Infrastructure, and (iii) efficient MapReduce processing. The book includes Use Cases and Tutorials to provide an integrated approach that answers the 'What', 'How', and 'Why' of Big Data. Features Identifies the primary drivers of Big Data Walks readers through the theory, methods and technology of Big Data Explains how to handle the 4 V's of Big Data in order to extract value for better business decision making Shows how and why data connectors are critical and necessary for Agile text analytics Includes in-depth tutorials to perform necessary set-ups, installation, configuration and execution of important tasks Explains the command line as well as GUI interface to a

powerful data exchange tool between Hadoop and legacy r-dbms databases

Data Mining with R - Luis Torgo 2016-11-30

Data Mining with R: Learning with Case Studies, Second Edition uses practical examples to illustrate the power of R and data mining. Providing an extensive update to the best-selling first edition, this new edition is divided into two parts. The first part will feature introductory material, including a new chapter that provides an introduction to data mining, to complement the already existing introduction to R. The second part includes case studies, and the new edition strongly revises the R code of the case studies making it more up-to-date with recent packages that have emerged in R. The book does not assume any prior knowledge about R. Readers who are new to R and data mining should be able to follow the case studies, and they are designed to be self-contained so the reader can start anywhere in the document. The book is accompanied by a set of freely available R source files that can be obtained at the book's web site. These files include all the code used in the case studies, and they facilitate the "do-it-yourself" approach followed in the book. Designed for users of data analysis tools, as well as researchers and developers, the book should be useful for anyone interested in entering the "world" of R and data mining. About the Author Lu s Torgo is an associate professor in the Department of Computer Science at the University of Porto in Portugal. He teaches Data Mining in R in the NYU Stern School of Business' MS in Business Analytics program. An active researcher in machine learning and data mining for more than 20 years, Dr. Torgo is also a researcher in the Laboratory of Artificial Intelligence and Data Analysis (LIAAD) of INESC Porto LA.

New Fundamental Technologies in Data Mining - Kimito Funatsu
2011-01-21

The progress of data mining technology and large public popularity establish a need for a comprehensive text on the subject. The series of books entitled by "Data Mining" address the need by presenting in-depth description of novel mining algorithms and many useful applications. In addition to understanding each section deeply, the two books present

useful hints and strategies to solving problems in the following chapters. The contributing authors have highlighted many future research directions that will foster multi-disciplinary collaborations and hence will lead to significant development in the field of data mining.

Mastication Robots - Weilang Xu 2010-05-28

Mastication Robotics: Biological Inspiration to Implementation is the first book in the special field of masticatory robots for applications including foods texture analysis, dental training and speech therapy. It is a collection of the efforts we have made in the field at Massey University, New Zealand. The book provides a thorough review of the human masticatory system, and presents principles, analysis, design, simulations and experiments of a number of masticatory robots developed by the authors. This book is a valuable reference for researchers, engineers and graduates in the field of robotics, mechatronics, automatic control, artificial intelligence and food sciences.

Data Mining with Ontologies: Implementations, Findings, and Frameworks - Nigro, Hector Oscar 2007-07-31

"Prior knowledge in data mining is helpful for selecting suitable data and mining techniques, pruning the space of hypothesis, representing the output in a comprehensible way, and improving the overall method. This book examines methodologies and research for the development of ontological foundations for data mining to enhance the ability of ontology utilization and design"--Provided by publisher.

Advanced Data Mining and Applications - Shangjie Tang 2008-09-30

The Fourth International Conference on Advanced Data Mining and Applications (ADMA 2008) will be held in Chengdu, China, followed by the last three successful ADMA conferences (2005 in Wu Han, 2006 in Xi'an, and 2007 Harbin). Our major goal of ADMA is to bring together the experts on data mining in the world, and to provide a leading international forum for the dissemination of original research results in data mining, including applications, algorithms, software and systems, and different disciplines with potential applications of data mining. This goal has been partially achieved in a very short time despite the young age of the conference, thanks to the rigorous review process insisted

upon, the outstanding list of internationally renowned keynote speakers and the excellent program each year. ADMA is ranked higher than, or very similar to, other data mining conferences (such as PAKDD, PKDD, and SDM) in early 2008 by an independent source: cs-conference-ranking.org. This year we had the pleasure and honor to host illustrious keynote speakers. Our distinguished keynote speakers are Prof. Qiang Yang and Prof. Jiming Liu. Prof. Yang is a tenured Professor and postgraduate studies coordinator at Computer Science and Engineering Department of Hong Kong University of Science and Technology. He is also a member of AAAI, ACM, a senior member of the IEEE, and he is also an associate editor for the IEEE TKDE and IEEE Intelligent Systems, KAIS and WI Journals.

Encyclopedia of Business Analytics and Optimization - Wang, John
2014-02-28

As the age of Big Data emerges, it becomes necessary to take the five dimensions of Big Data- volume, variety, velocity, volatility, and veracity- and focus these dimensions towards one critical emphasis - value. The Encyclopedia of Business Analytics and Optimization confronts the challenges of information retrieval in the age of Big Data by exploring recent advances in the areas of knowledge management, data visualization, interdisciplinary communication, and others. Through its critical approach and practical application, this book will be a must-have reference for any professional, leader, analyst, or manager interested in making the most of the knowledge resources at their disposal.