Data Mining Elsevier

Microsoft Data Mining approaches data mining from the particular perspective of IT professionals using Microsoft data management technologies. The author explains the new data mining capabilities in Microsoft's SQL Server 2000 database, Commerce Server, and other products, details the Microsoft OLE DB for Data Mining standard, and gives readers best practices for using all of them. The book bridges the previously specialized field of data mining with the new technologies and methods that are quickly making it an important mainstream tool for companies of all sizes. Data mining refers to a set of technologies and techniques by which IT professionals search large databases of information (such as those contained by SQL Server) for patterns and trends. Traditionally important in finance, telecommunication, and other information-intensive fields, data mining increasingly helps companies better understand and serve their customers by revealing buying patterns and related interests. It is becoming a foundation for e-commerce and knowledge management. Unique book on a hot data management topic Part of Digital Press's SQL Server and data mining clusters Author is an expert on both traditional and Microsoft data mining technologies

Artificial Intelligence in Behavioral and Mental Health Care summarizes recent advances in artificial intelligence as it applies to mental health clinical practice. Each chapter provides a technical description of the advance, review of application in clinical practice, and empirical data on clinical efficacy. In addition, each chapter includes a discussion of practical issues in clinical settings, ethical considerations, and limitations of use. The book encompasses AI based advances in decision-making, in assessment and treatment, in providing education to clients, robot assisted task completion, and the use of AI for research and data gathering. This book will be of use to mental health practitioners interested in learning about, or incorporating AI advances into their practice and for researchers interested in a comprehensive review of these advances in one source. Summarizes AI advances for use in mental health practice Includes advances in AI based decision-making and consultation Describes AI applications for assessment and treatment Details AI advances in robots for clinical settings Provides empirical data on clinical efficacy Explores practical issues of use in clinical settings

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

This book constitutes the refereed proceedings of the 17th Conference on Artificial Intelligence in Medicine, AIME 2019, held in Poznan, Poland, in June 2019. The 22 revised full and 31 short papers presented were carefully reviewed and selected from 134 submissions. The papers are organized in the following topical sections: deep learning; simulation; knowledge representation; probabilistic models; behavior monitoring; clustering, natural language processing, and decision support; feature selection; image processing; general machine learning; and unsupervised learning.

Good data mining practice for business intelligence (the art of turning raw software into meaningful information) is demonstrated by the many new techniques and developments in the conversion of fresh scientific discovery into widely accessible software solutions. Written as an introduction to the main issues associated with the basics of machine learning and the algorithms used in data mining, this text is suitable foradvanced undergraduates, postgraduates and tutors in a wide area of computer science and technology, as well as researchers looking to adapt various algorithms for particular data mining tasks. A valuable addition to libraries and bookshelves of the many companies who are using the principles of data mining to effectively deliver solid business and industry solutions.

Handbook of Statistical Analysis and Data Mining Applications, Second Edition, is a comprehensive professional reference book that guides business analysts, scientists, engineers and researchers, both academic and industrial, through all stages of data analysis, model building and implementation. The handbook helps users discern technical and business problems, understand the strengths and weaknesses of modern data mining algorithms and employ the right statistical methods for practical application. This book is an ideal reference for users who want to address massive and complex datasets with novel statistical approaches and be able to objectively evaluate analyses and solutions. It has clear, intuitive explanations of the principles and tools for solving problems using modern analytic techniques and discusses their application to real problems in ways accessible and beneficial to practitioners across several areas—from science and engineering, to medicine, academia and commerce. Includes input by practitioners for practitioners Includes tutorials in numerous fields of study that provide step-by-step instruction on how to use supplied tools to build models Contains practical advice from successful real-world implementations Brings together, in a single resource, all the information a beginner needs to understand the tools and issues in data mining to build successful data mining solutions Features clear, intuitive explanations of novel analytical tools and techniques, and their practical applications

This book is devoted to the Educational Data Mining arena. It highlights works that show relevant proposals, developments, and achievements that shape trends and inspire future research. After a rigorous revision process sixteen manuscripts were accepted and organized into four parts as follows: · Profile: The first part embraces three chapters oriented to: 1) describe the nature of educational data mining (EDM); 2) describe how to pre-process raw data to facilitate data mining (DM); 3) explain how EDM supports government policies to enhance education. · Student modeling: The second part contains five chapters concerned with:

4) explore the factors having an impact on the student's academic success; 5) detect student's personality and behaviors in an educational game; 6) predict students performance to adjust content and strategies; 7) identify students who will most benefit from tutor support; 8) hypothesize the student answer correctness based on eye metrics and mouse click. · Assessment: The third part has four chapters related to: 9) analyze the coherence of student research proposals; 10) automatically generate tests based on competences; 11) recognize students activities and visualize these activities for being presented to teachers; 12) find the most dependent test items in students response data. · Trends: The fourth part encompasses four chapters about how to: 13) mine text for assessing students productions and supporting teachers; 14) scan student comments by statistical and text mining techniques; 15) sketch a social network analysis (SNA) to discover student behavior profiles and depict models about their collaboration; 16) evaluate the structure of interactions between the students in social networks. This volume will be a source of interest to researchers, practitioners, professors, and postgraduate students aimed at updating their knowledge and find targets for future work in the field of educational data mining.

Data Preparation for Data Mining addresses an issue unfortunately ignored by most authorities on data mining: data preparation. Thanks largely to its perceived difficulty, data preparation has traditionally taken a backseat to the more alluring question of how best to extract meaningful knowledge. But without adequate preparation of your data, the return on the resources invested in mining is certain to be disappointing. Dorian Pyle corrects this imbalance. A twenty-five-year veteran of what has become the data mining industry, Pyle shares his own successful data preparation methodology, offering both a conceptual overview for managers and complete technical details for IT professionals. Apply his techniques and watch your mining efforts pay off-in the form of improved performance, reduced distortion, and more valuable results. On the enclosed CD-ROM, you'll find a suite of programs as C source code and compiled into a command-line-driven toolkit. This code illustrates how the author's techniques can be applied to arrive at an automated preparation solution that works for you. Also included are demonstration versions of three commercial products that help with data preparation, along with sample data with which you can practice and experiment. * Offers in-depth coverage of an essential but largely ignored subject. * Goes far beyond theory, leading you-step by step-through the author's own data preparation techniques. * Provides practical illustrations of the author's methodology using realistic sample data sets. * Includes algorithms you can apply directly to your own project, along with instructions for understanding when automation is possible and when greater intervention is required. * Explains how to identify and correct data problems that may be present in your application. * Prepares miners, helping them head into preparation with a better understanding of data sets and their limitations.

Data Mining and Predictive Analysis: Intelligence Gathering and Crime Analysis, 2nd Edition, describes clearly and simply how crime clusters and other intelligence can be used to deploy security resources most effectively. Rather than being reactive, security agencies can anticipate and prevent crime through the appropriate application of data mining and the use of standard computer programs. Data Mining and Predictive Analysis offers a clear, practical starting point for

professionals who need to use data mining in homeland security, security analysis, and operational law enforcement settings. This revised text highlights new and emerging technology, discusses the importance of analytic context for ensuring successful implementation of advanced analytics in the operational setting, and covers new analytic service delivery models that increase ease of use and access to high-end technology and analytic capabilities. The use of predictive analytics in intelligence and security analysis enables the development of meaningful, information based tactics, strategy, and policy decisions in the operational public safety and security environment. Discusses new and emerging technologies and techniques, including up-to-date information on predictive policing, a key capability in law enforcement and security Demonstrates the importance of analytic context beyond software Covers new models for effective delivery of advanced analytics to the operational environment, which have increased access to even the most powerful capabilities Includes terminology, concepts, practical application of these concepts, and examples to highlight specific techniques and approaches in crime and intelligence analysis

Intelligent Data Mining and Fusion Systems in Agriculture presents methods of computational intelligence and data fusion that have applications in agriculture for the non-destructive testing of agricultural products and crop condition monitoring. Sections cover the combination of sensors with artificial intelligence architectures in precision agriculture, including algorithms, bio-inspired hierarchical neural maps, and novelty detection algorithms capable of detecting sudden changes in different conditions. This book offers advanced students and entry-level professionals in agricultural science and engineering, geography and geoinformation science an in-depth overview of the connection between decision-making in agricultural operations and the decision support features offered by advanced computational intelligence algorithms. Covers crop protection, automation in agriculture, artificial intelligence in agriculture, sensing and Internet of Things (IoTs) in agriculture Addresses AI use in weed management, disease detection, yield prediction and crop production Utilizes case studies to provide real-world insights and direction

This book brings all of the elements of data mining together in a single volume, saving the reader the time and expense of making multiple purchases. It consolidates both introductory and advanced topics, thereby covering the gamut of data mining and machine learning tactics ? from data integration and pre-processing, to fundamental algorithms, to optimization techniques and web mining methodology. The proposed book expertly combines the finest data mining material from the Morgan Kaufmann portfolio. Individual chapters are derived from a select group of MK books authored by the best and brightest in the field. These chapters are combined into one comprehensive volume in a way that allows it to be used as a reference work for those interested in new and developing aspects of data mining. This book represents a quick and efficient way to unite valuable content from leading data mining experts, thereby creating a

definitive, one-stop-shopping opportunity for customers to receive the information they would otherwise need to round up from separate sources. Chapters contributed by various recognized experts in the field let the reader remain up to date and fully informed from multiple viewpoints. Presents multiple methods of analysis and algorithmic problem-solving techniques, enhancing the reader's technical expertise and ability to implement practical solutions. Coverage of both theory and practice brings all of the elements of data mining together in a single volume, saving the reader the time and expense of making multiple purchases.

Introduction to Algorithms for Data Mining and Machine Learning introduces the essential ideas behind all key algorithms and techniques for data mining and machine learning, along with optimization techniques. Its strong formal mathematical approach, well selected examples, and practical software recommendations help readers develop confidence in their data modeling skills so they can process and interpret data for classification, clustering, curve-fitting and predictions. Masterfully balancing theory and practice, it is especially useful for those who need relevant, well explained, but not rigorous (proofs based) background theory and clear guidelines for working with big data. Presents an informal, theorem-free approach with concise, compact coverage of all fundamental topics Includes worked examples that help users increase confidence in their understanding of key algorithms, thus encouraging self-study Provides algorithms and techniques that can be implemented in any programming language, with each chapter including notes about relevant software packages

Data uncertainty is a concept closely related with most real life applications that involve data collection and interpretation. Examples can be found in data acquired with biomedical instruments or other experimental techniques. Integration of robust optimization in the existing data mining techniques aim to create new algorithms resilient to error and noise. This work encapsulates all the latest applications of robust optimization in data mining. This brief contains an overview of the rapidly growing field of robust data mining research field and presents the most well known machine learning algorithms, their robust counterpart formulations and algorithms for attacking these problems. This brief will appeal to theoreticians and data miners working in this field.

Text mining applications have experienced tremendous advances because of web 2.0 and social networking applications. Recent advances in hardware and software technology have lead to a number of unique scenarios where text mining algorithms are learned. Mining Text Data introduces an important niche in the text analytics field, and is an edited volume contributed by leading international researchers and practitioners focused on social networks & data mining. This book contains a wide swath in topics across social networks & data mining. Each chapter contains a comprehensive survey including the key research content on the topic, and the future directions of research in the field.

There is a special focus on Text Embedded with Heterogeneous and Multimedia Data which makes the mining process much more challenging. A number of methods have been designed such as transfer learning and cross-lingual mining for such cases. Mining Text Data simplifies the content, so that advanced-level students, practitioners and researchers in computer science can benefit from this book. Academic and corporate libraries, as well as ACM, IEEE, and Management Science focused on information security, electronic commerce, databases, data mining, machine learning, and statistics are the primary buyers for this reference book.

Artificial Intelligence in Data Mining: Theories and Applications offers a comprehensive introduction to data mining theories, relevant AI techniques, and their many real-world applications. This book is written by experienced engineers for engineers, biomedical engineers, and researchers in neural networks, as well as computer scientists with an interest in the area. Provides coverage of the fundamentals of Artificial Intelligence as applied to data mining, including computational intelligence and unsupervised learning methods for data clustering Presents coverage of key topics such as heuristic methods for data clustering, deep learning methods for data classification, and neural networks Includes case studies and real-world applications of AI techniques in data mining, for improved outcomes in clinical diagnosis, satellite data extraction, agriculture, security and defense

Data Mining: Concepts and Techniques provides the concepts and techniques in processing gathered data or information, which will be used in various applications. Specifically, it explains data mining and the tools used in discovering knowledge from the collected data. This book is referred as the knowledge discovery from data (KDD). It focuses on the feasibility, usefulness, effectiveness, and scalability of techniques of large data sets. After describing data mining, this edition explains the methods of knowing, preprocessing, processing, and warehousing data. It then presents information about data warehouses, online analytical processing (OLAP), and data cube technology. Then, the methods involved in mining frequent patterns, associations, and correlations for large data sets are described. The book details the methods for data classification and introduces the concepts and methods for data clustering. The remaining chapters discuss the outlier detection and the trends, applications, and research frontiers in data mining. This book is intended for Computer Science students, application developers, business professionals, and researchers who seek information on data mining. Presents dozens of algorithms and implementation examples, all in pseudo-code and suitable for use in real-world, large-scale data mining projects Addresses advanced topics such as mining object-relational databases, spatial databases, multimedia databases, time-series databases, text databases, the World Wide Web, and applications in several fields Provides a comprehensive, practical look at the concepts and techniques you need to get the most out of your data

This book offers a thorough grounding in machine learning concepts combined with practical advice on applying machine learning tools and techniques in real-world data mining situations. Clearly written and effectively illustrated, this book is ideal for anyone involved at any level in the work of extracting usable knowledge from large collections of data. Complementing the book's instruction is fully functional machine learning software.

Data Mining for Bioinformatics Applications provides valuable information on the data mining methods have been widely used for solving real bioinformatics problems, including problem definition, data collection, data preprocessing, modeling, and validation. The text uses an example-based method to illustrate how to apply data mining techniques to solve real bioinformatics problems, containing 45 bioinformatics problems that have been investigated in recent research. For each example, the entire data mining process is described, ranging from data preprocessing to modeling and result validation. Provides valuable information on the data mining methods have been widely used for solving real bioinformatics problems Uses an example-based method to illustrate how to apply data mining techniques to solve real bioinformatics problems Contains 45 bioinformatics problems that have been investigated in recent research

Integrates social media, social network analysis, and data mining to provide an understanding of the potentials of social media mining.

Currently there are major challenges in data mining applications in the geosciences. This is due primarily to the fact that there is a wealth of available mining data amid an absence of the knowledge and expertise necessary to analyze and accurately interpret the same data. Most geoscientists have no practical knowledge or experience using data mining techniques. For the few that do, they typically lack expertise in using data mining software and in selecting the most appropriate algorithms for a given application. This leads to a paradoxical scenario of "rich data but poor knowledge". The true solution is to apply data mining techniques in geosciences databases and to modify these techniques for practical applications. Authored by a global thought leader in data mining, Data Mining and Knowledge Discovery for Geoscientists addresses these challenges by summarizing the latest developments in geosciences data mining and arming scientists with the ability to apply key concepts to effectively analyze and interpret vast amounts of critical information. Focuses on 22 of data mining’s most practical algorithms and popular application samples Features 36 case studies and end-of-chapter exercises unique to the geosciences to underscore key data mining applications Presents a practical and integrated system of data mining and knowledge discovery for geoscientists Rigorous yet broadly accessible to geoscientists, engineers, researchers and programmers in data mining Introduces widely used algorithms, their basic principles and conditions of applications, diverse case studies, and suggests algorithms that may be suitable for specific applications

The world contains an unimaginably vast amount of digital information which is getting ever vaster ever more rapidly. This makes it possible to do many things that previously could not be done: spot business trends, prevent diseases, combat crime and so on. Managed well, the textual data can be used to unlock new sources of economic value, provide fresh insights into science and hold

governments to account. As the Internet expands and our natural capacity to process the unstructured text that it contains diminishes, the value of text mining for information retrieval and search will increase dramatically. This comprehensive professional reference brings together all the information, tools and methods a professional will need to efficiently use text mining applications and statistical analysis. The Handbook of Practical Text Mining and Statistical Analysis for Non-structured Text Data Applications presents a comprehensive how- to reference that shows the user how to conduct text mining and statistically analyze results. In addition to providing an in-depth examination of core text mining and link detection tools, methods and operations, the book examines advanced preprocessing techniques, knowledge representation considerations, and visualization approaches. Finally, the book explores current real-world, mission-critical applications of text mining and link detection using real world example tutorials in such varied fields as corporate, finance, business intelligence, genomics research, and counterterrorism activities. -Extensive case studies, most in a tutorial format, allow the reader to 'click through' the example using a software program, thus learning to conduct text mining analyses in the most rapid manner of learning possible -Numerous examples, tutorials, power points and datasets available via companion website on Elsevierdirect.com -Glossary of text mining terms provided in the appendix

Electrical Spectroscopy of Earth Materials provides detailed coverage of theoretical and experimental methods of electrical spectroscopy of Earth materials, based on first-hand research and extensive data. The book includes actual data sets and specific explanations for the methods used in obtaining and analyzing the data, including graphical displays of results. It describes the electrical properties of various soil samples and offers both theory and techniques for researchers to apply to their own research. Including examination of the practical aspects of electrical spectroscopy measurements and extensive computer-readable data, Electrical Spectroscopy of Earth Materials is a unique resource for geophysicists to save both time and effort in understanding and analyzing Earth materials and soil properties. Includes coverage of spectroscopic methods, including details of the measurement process and lab setup Provides information about the data processing program for calculating all electrical parameters Presents computer-readable data for all samples from a wide variety of electrical conditions, including high-loss and low-loss soils Features case studies and complete data sets for soil electrical property measurements

This book aims to explain Data Analytics towards decision making in terms of models and algorithms, theoretical concepts, applications, experiments in relevant domains or focused on specific issues. It explores the concepts of database technology, machine learning, knowledge-based system, high performance computing, information retrieval, finding patterns hidden in large datasets and data visualization. Also, it presents various paradigms including pattern mining, clustering, classification, and data analysis. Overall aim is to provide technical solutions in the field of data analytics and data mining. Features: Covers descriptive statistics with respect to predictive analytics and business analytics. Discusses different data analytics platforms for real-time applications. Explain SMART business models. Includes algorithms in data sciences alongwith automated methods and models. Explores varied challenges encountered by researchers and businesses in the realm of real-time analytics. This book aims at

researchers and graduate students in data analytics, data sciences, data mining, and signal processing.

Data Mining Applications with R is a great resource for researchers and professionals to understand the wide use of R, a free software environment for statistical computing and graphics, in solving different problems in industry. R is widely used in leveraging data mining techniques across many different industries, including government, finance, insurance, medicine, scientific research and more. This book presents 15 different real-world case studies illustrating various techniques in rapidly growing areas. It is an ideal companion for data mining researchers in academia and industry looking for ways to turn this versatile software into a powerful analytic tool. R code, Data and color figures for the book are provided at the RDataMining.com website. Helps data miners to learn to use R in their specific area of work and see how R can apply in different industries Presents various case studies in real-world applications, which will help readers to apply the techniques in their work Provides code examples and sample data for readers to easily learn the techniques by running the code by themselves

Highway Safety Analytics and Modeling comprehensively covers the key elements needed to make effective transportation engineering and policy decisions based on highway safety data analysis in a single. reference. The book includes all aspects of the decision-making process, from collecting and assembling data to developing models and evaluating analysis results. It discusses the challenges of working with crash and naturalistic data, identifies problems and proposes well-researched methods to solve them. Finally, the book examines the nuances associated with safety data analysis and shows how to best use the information to develop countermeasures, policies, and programs to reduce the frequency and severity of traffic crashes. Complements the Highway Safety Manual by the American Association of State Highway and Transportation Officials Provides examples and case studies for most models and methods Includes learning aids such as online data, examples and solutions to problems

Health Informatics: An Interprofessional Approach was awarded first place in the 2013 AJN Book of the Year Awards in the Information Technology/Informatics category. Get on the cutting edge of informatics with Health Informatics, An Interprofessional Approach. Covering a wide range of skills and systems, this unique title prepares you for work in today’s technology-filled clinical field. Topics include clinical decision support, clinical documentation, provider order entry systems, system implementation, adoption issues, and more. Case studies, abstracts, and discussion questions enhance your understanding of these crucial areas of the clinical space. 31 chapters written by field experts give you the most current and accurate information on continually evolving subjects like evidence-based practice, EHRs, PHRs, disaster recovery, and simulation. Case studies and attached discussion questions at the end of each chapter encourage higher level thinking that you can apply to real world experiences. Objectives, key terms and an abstract at the beginning of each chapter provide an overview of what each chapter will cover. Conclusion and Future Directions section at the end of each chapter reinforces topics and expands on how the topic will continue to evolve. Open-ended discussion questions at the end of each chapter enhance your understanding of the subject covered.

Data Mining: Concepts and TechniquesElsevier

Online Social Networks: Human Cognitive Constraints in Facebook and Twitter provides new insights into the structural properties of personal online social networks and the mechanisms underpinning human online social behavior. As the availability of digital communication data generated by social media is revolutionizing the field of social networks analysis, the text discusses the use of large- scale datasets to study

the structural properties of online ego networks, to compare them with the properties of general human social networks, and to highlight additional properties. Users will find the data collected and conclusions drawn useful during design or research service initiatives that involve online and mobile social network environments. Provides an analysis of the structural properties of ego networks in online social networks Presents quantitative evidence of the Dunbar's number in online environments Discusses original structural and dynamic properties of human social network through OSN analysis

Data Mining and Data Visualization focuses on dealing with large-scale data, a field commonly referred to as data mining. The book is divided into three sections. The first deals with an introduction to statistical aspects of data mining and machine learning and includes applications to text analysis, computer intrusion detection, and hiding of information in digital files. The second section focuses on a variety of statistical methodologies that have proven to be effective in data mining applications. These include clustering, classification, multivariate density estimation, tree-based methods, pattern recognition, outlier detection, genetic algorithms, and dimensionality reduction. The third section focuses on data visualization and covers issues of visualization of high-dimensional data, novel graphical techniques with a focus on human factors, interactive graphics, and data visualization using virtual reality. This book represents a thorough cross section of internationally renowned thinkers who are inventing methods for dealing with a new data paradigm. Distinguished contributors who are international experts in aspects of data mining Includes data mining approaches to non-numerical data mining including text data, Internet traffic data, and geographic data Highly topical discussions reflecting current thinking on contemporary technical issues, e.g. streaming data Discusses taxonomy of dataset sizes, computational complexity, and scalability usually ignored in most discussions Thorough discussion of data visualization issues blending statistical, human factors, and computational insights

Big Data Mining for Climate Change addresses how to manage the vast amount of information available for analysis. Climate change and its environmental, economic and social consequences are widely recognized as the biggest, most interconnected problem facing humanity. There is a huge amount of potential information currently available...and it is growing exponentially. This book walks through the latest research and how to navigate the resources available using big data applications. It is appropriate for scientists and advanced students studying climate change from a number of disciplines, including the atmospheric sciences, oceanic sciences, geography, environment sciences, ecology, energy, economics, engineering and public policy. Provides a step-by-step guide for applying big data mining tools to climate and environmental research Presents a comprehensive review of theory and algorithms of big data mining for climate change Includes current research in climate and environmental science as it relates to using big data algorithms

Whether you are a software developer, systems architect, data analyst, or business analyst, if you want to take advantage of data mining in the development of advanced analytic applications, Java Data Mining, JDM, the new standard now implemented in core DBMS and data mining/analysis software, is a key solution component. This book is the essential guide to the usage of the JDM standard interface, written by contributors to the JDM standard. Data mining introduction - an overview of data mining and the problems it can address across industries; JDM's place in strategic solutions to data mining-related problems JDM essentials - concepts, design approach and design issues, with detailed code examples in Java; a Web Services interface to enable JDM functionality in an SOA environment; and illustration of JDM XML Schema for JDM objects JDM in practice - the use of JDM from vendor implementations and approaches to customer applications, integration, and usage; impact of data mining on IT infrastructure; a how-to guide for building applications that use the JDM API Free, downloadable KJDM source code referenced in the book available here

This book emphasizes recent advances in the creation of biometric identification systems for various applications in the field of human activity. The book displays the problems that arise in modern systems of biometric identification, as well as the level of development and prospects for the introduction of biometric technologies. The authors classify biometric technologies into two groups, distinguished according to the type of biometric characteristics used. The first group uses static biometric parameters: fingerprints, hand geometry, retina pattern, vein pattern on the finger, etc. The second group uses dynamic parameters for identification: the dynamics of the reproduction of a signature or a handwritten keyword, voice, gait, dynamics of work on the keyboard, etc. The directions of building information systems that use automatic personality identification based on the analysis of unique biometric characteristics of a person are discussed. The book is intended for professionals working and conducting research in the field of intelligent information processing, information security, and robotics and in the field of real-time identification systems. The book contains examples and problems/solutions throughout.

Whether you are brand new to data mining or working on your tenth predictive analytics project, Commercial Data Mining will be there for you as an accessible reference outlining the entire process and related themes. In this book, you'll learn that your organization does not need a huge volume of data or a Fortune 500 budget to generate business using existing information assets. Expert author David Nettleton guides you through the process from beginning to end and covers everything from business objectives to data sources, and selection to analysis and predictive modeling. Commercial Data Mining includes case studies and practical examples from Nettleton's more than 20 years of commercial experience. Real-world cases covering customer loyalty, cross-selling, and audience prediction in industries including insurance, banking, and media illustrate the concepts and techniques explained throughout the book. Illustrates cost-benefit evaluation of potential projects Includes vendor-agnostic advice on what to look for in off-the-shelf solutions as well as tips on building your own data mining tools Approachable reference can be read from cover to cover by readers of all experience levels Includes practical examples and case studies as well as actionable business insights from author's own experience

Quantum Machine Learning bridges the gap between abstract developments in quantum computing and the applied research on machine learning. Paring down the complexity of the disciplines involved, it focuses on providing a synthesis that explains the most important machine learning algorithms in a quantum framework. Theoretical advances in quantum computing are hard to follow for computer scientists, and sometimes even for researchers involved in the field. The lack of a step-by-step guide hampers the broader understanding of this emergent interdisciplinary body of research. Quantum Machine Learning sets the scene for a deeper understanding of the subject for readers of different backgrounds. The author has carefully constructed a clear comparison of classical learning algorithms and their quantum counterparts, thus making differences in computational complexity and learning performance apparent. This book synthesizes of a broad array of research into a manageable and concise presentation, with practical examples and applications. Bridges the gap between abstract developments in quantum computing with the applied research on machine learning Provides the theoretical minimum of machine learning, quantum mechanics, and quantum computing Gives step-by-step guidance to a broader understanding of this emergent interdisciplinary body of research

Are you a data mining analyst, who spends up to 80% of your time assuring data quality, then preparing that data for developing

and deploying predictive models? And do you find lots of literature on data mining theory and concepts, but when it comes to practical advice on developing good mining views find little “how to information? And are you, like most analysts, preparing the data in SAS? This book is intended to fill this gap as your source of practical recipes. It introduces a framework for the process of data preparation for data mining, and presents the detailed implementation of each step in SAS. In addition, business applications of data mining modeling require you to deal with a large number of variables, typically hundreds if not thousands. Therefore, the book devotes several chapters to the methods of data transformation and variable selection. A complete framework for the data preparation process, including implementation details for each step. The complete SAS implementation code, which is readily usable by professional analysts and data miners. A unique and comprehensive approach for the treatment of missing values, optimal binning, and cardinality reduction. Assumes minimal proficiency in SAS and includes a quick-start chapter on writing SAS macros.

Put Predictive Analytics into Action Learn the basics of Predictive Analysis and Data Mining through an easy to understand conceptual framework and immediately practice the concepts learned using the open source RapidMiner tool. Whether you are brand new to Data Mining or working on your tenth project, this book will show you how to analyze data, uncover hidden patterns and relationships to aid important decisions and predictions. Data Mining has become an essential tool for any enterprise that collects, stores and processes data as part of its operations. This book is ideal for business users, data analysts, business analysts, business intelligence and data warehousing professionals and for anyone who wants to learn Data Mining. You’ll be able to: 1. Gain the necessary knowledge of different data mining techniques, so that you can select the right technique for a given data problem and create a general purpose analytics process. 2. Get up and running fast with more than two dozen commonly used powerful algorithms for predictive analytics using practical use cases. 3. Implement a simple step-by-step process for predicting an outcome or discovering hidden relationships from the data using RapidMiner, an open source GUI based data mining tool Predictive analytics and Data Mining techniques covered: Exploratory Data Analysis, Visualization, Decision trees, Rule induction, k-Nearest Neighbors, Naïve Bayesian, Artificial Neural Networks, Support Vector machines, Ensemble models, Bagging, Boosting, Random Forests, Linear regression, Logistic regression, Association analysis using Apriori and FP Growth, K-Means clustering, Density based clustering, Self Organizing Maps, Text Mining, Time series forecasting, Anomaly detection and Feature selection. Implementation files can be downloaded from the book companion site at www.LearnPredictiveAnalytics.com Demystifies data mining concepts with easy to understand language Shows how to get up and running fast with 20 commonly used powerful techniques for predictive analysis Explains the process of using open source RapidMiner tools Discusses a simple 5 step process for implementing algorithms that can be used for performing predictive analytics Includes practical use cases and examples

Data Mining: Practical Machine Learning Tools and Techniques, Fourth Edition, offers a thorough grounding in machine learning concepts, along with practical advice on applying these tools and techniques in real-world data mining situations. This highly anticipated fourth edition of the most acclaimed work on data mining and machine learning teaches readers everything they need

to know to get going, from preparing inputs, interpreting outputs, evaluating results, to the algorithmic methods at the heart of successful data mining approaches. Extensive updates reflect the technical changes and modernizations that have taken place in the field since the last edition, including substantial new chapters on probabilistic methods and on deep learning. Accompanying the book is a new version of the popular WEKA machine learning software from the University of Waikato. Authors Witten, Frank, Hall, and Pal include today's techniques coupled with the methods at the leading edge of contemporary research. Please visit the book companion website at http://www.cs.waikato.ac.nz/ml/weka/book.html It contains Powerpoint slides for Chapters 1-12. This is a very comprehensive teaching resource, with many PPT slides covering each chapter of the book Online Appendix on the Weka workbench; again a very comprehensive learning aid for the open source software that goes with the book Table of contents, highlighting the many new sections in the 4th edition, along with reviews of the 1st edition, errata, etc. Provides a thorough grounding in machine learning concepts, as well as practical advice on applying the tools and techniques to data mining projects Presents concrete tips and techniques for performance improvement that work by transforming the input or output in machine learning methods Includes a downloadable WEKA software toolkit, a comprehensive collection of machine learning algorithms for data mining tasks-in an easy-to-use interactive interface Includes open-access online courses that introduce practical applications of the material in the book

Comprehensive Coverage of the Entire Area of ClassificationResearch on the problem of classification tends to be fragmented across such areas as pattern recognition, database, data mining, and machine learning. Addressing the work of these different communities in a unified way, Data Classification: Algorithms and Applications explores the underlyi

This second and revised edition contains a detailed introduction to the key classes of intelligent data analysis methods. The twelve coherently written chapters by leading experts provide complete coverage of the core issues. The first half of the book is devoted to the discussion of classical statistical issues. The following chapters concentrate on machine learning and artificial intelligence, rule induction methods, neural networks, fuzzy logic, and stochastic search methods. The book concludes with a chapter on visualization and an advanced overview of IDA processes.

Our ability to generate and collect data has been increasing rapidly. Not only are all of our business, scientific, and government transactions now computerized, but the widespread use of digital cameras, publication tools, and bar codes also generate data. On the collection side, scanned text and image platforms, satellite remote sensing systems, and the World Wide Web have flooded us with a tremendous amount of data. This explosive growth has generated an even more urgent need for new techniques and automated tools that can help us transform this data into useful information and knowledge. Like the first edition, voted the most popular data mining book by KD Nuggets readers, this book explores concepts and techniques for the discovery of patterns hidden in large data sets, focusing on issues relating to their feasibility, usefulness, effectiveness, and scalability. However, since the publication of the first edition, great progress has been made in the development of new data mining methods, systems, and applications. This new edition substantially enhances the first edition, and new chapters have been added to address recent

developments on mining complex types of data— including stream data, sequence data, graph structured data, social network data, and multi-relational data. A comprehensive, practical look at the concepts and techniques you need to know to get the most out of real business data Updates that incorporate input from readers, changes in the field, and more material on statistics and machine learning Dozens of algorithms and implementation examples, all in easily understood pseudo-code and suitable for use in real-world, large-scale data mining projects Complete classroom support for instructors at www.mkp.com/datamining2e companion site