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Data Mining with Decision Trees Data Mining with Decision Trees Data Mining and Knowledge Discovery Handbook Data Mining with Decision Trees: Theory and Applications (2nd Edition) Proactive Data Mining with Decision Trees Machine Learning, Optimization, and Data Science KI 2007: Advances in Artificial Intelligence Precision agriculture '09 Machine Learning and Knowledge Discovery in Databases Algorithmic Learning Theory Advances in Machine Learning Research and Application: 2012 Edition Readings in Decision Analysis Machine Learning: ECML 2004 Novel Insights in Agent-based Complex Automated Negotiation Pattern Classification Using Ensemble Methods Advances in Information Technology Research and Application: 2012 Edition Intelligence and Security Informatics Comparative Risk Assessment and Environmental Decision Making Knowledge Service Engineering Handbook Decision Making in Health and Medicine Desert Olive Oil Cultivation Advances in Web Intelligence and Data Mining Artificial Intelligence in Financial Markets Intelligent Infrastructure in Transportation and Management Information Security Theory and Practice Network and System Security Analysis of Social Media and Ubiquitous Data Soft Computing for Knowledge Discovery and Data Mining Multiple Criteria Decision Making Handbook of Research on Developments in E-Health and Telemedicine: Technological and Social Perspectives Recent Advances in Data Mining of Enterprise Data: Algorithms and Applications Multiple Criteria Decision Making Advances in Web Mining and Web Usage Analysis Fifty Years of Fuzzy Logic and its Applications Advances in Web Intelligence Content-Addressable Memories Encyclopedia of Decision Making and Decision Support Technologies Decision Support Systems and Electronic Commerce Selected Readings on Electronic Commerce Technologies: Contemporary Applications Data Mining and Knowledge Discovery Handbook

Intelligence and Security Informatics Jun 19 2021 This book constitutes the refereed proceedings of the International Workshop on Intelligence and Security Informatics, WISI 2006, held in Singapore in conjunction with the 10th Pacific-Asia Conference on Knowledge Discovery and Data Mining. The 32 papers presented together with the abstract of the keynote talk were carefully reviewed. The papers are organized in sections on Web and text mining for terrorism informatics, cybercrime analysis, network security, and crime data mining.

Readings in Decision Analysis Nov 24 2021 Provides an introduction to decision analysis. This book is based upon a number of papers and articles taken from the Operational Research Society's journal and other publications. However, the book is not simply a 'collection of reprints': Professor French has provided extensive notes and commentary to weave the extracts into a coherent whole. Although techniques are presented, the main thrust is to convey the purpose of decision analysis and the interpretation that should be placed upon its output: vital topics, but ones seldom discussed in introductory texts. The writing is aimed at the non-technical reader.

Proactive Data Mining with Decision Trees Jul 01 2022 This book explores a proactive and domain-driven method to classification tasks. This novel proactive approach to data mining not only induces a model for predicting or explaining a phenomenon, but also utilizes specific problem/domain knowledge to suggest specific actions to achieve optimal changes in the value of the target attribute. In particular, the authors suggest a specific implementation of the domain-driven proactive approach for classification trees. The book centers on the core idea of moving observations from one branch of the tree to another. It introduces a novel splitting criterion for decision trees, termed maximal-utility, which maximizes the potential for enhancing profitability in the output tree. Two real-world case studies, one of a leading wireless operator and the other of a major security company, are also included and demonstrate how applying the proactive approach to classification tasks can solve business problems. Proactive Data Mining with Decision Trees is intended for researchers, practitioners and advanced-level students.

Desert Olive Oil Cultivation Feb 13 2021 Due to the adverse stress conditions typical of olive cultivation in desert conditions, the olive tree is responding with production of high levels of antioxidant substances. Among these substances are polyphenols, tocopherols, and phyosterols. Studies have shown that saline irrigated varieties of olives have demonstrated advantages over those irrigated with tap water. This is just one of the aspects of desert cultivation of olives that is covered in Desert Olive Oil Advanced Biotechnologies. Based on 20 years of research, the book expounds on the appropriate selection of olive varieties with high productivity and oil quality, the impact of foliar nutrition on decreasing alternate bearing and increasing fruit quality, improving efficiency of mechanical harvesting, and increasing efficiency of oil extraction and oil quality regulating analysis. Addresses olive cultivation methods for semi-arid environments Focuses on intensive cultivation using saline and municipal waste recycled irrigation water and their significant impact on the production and nutritional value of olive oil Integrated and multidisciplinary approaches providing a comprehensive view of the desert olive industry Provides key considerations including ecological, biotechnological, agricultural and political impacts

Information Security Theory and Practice Oct 12 2020 This volume constitutes the refereed proceedings of the 10th IFIP WG 11.2 International Conference on Information Security Theory and Practices, WISTP 2016, held in Heraklion, Crete, Greece, in September 2016. The 13 revised full papers and 5 short papers presented together in this book were carefully reviewed and selected from 29 submissions. WISTP 2016 sought original submissions from academia and industry presenting novel research on all theoretical and practical aspects of security and privacy, as well as experimental studies of fielded systems, the application of security technology, the implementation of systems, and lessons learned. The papers are organized in topical sections on authentication and key management; secure hardware systems; attacks to software and network systems; and access control and data protection.

Handbook of Research on Developments in E-Health and Telemedicine: Technological and Social Perspectives May 07 2020 "This book provide a comprehensive coverage of the latest and most relevant knowledge, developments, solutions, and practical applications, related to e-Health, this new field of knowledge able to transform the way we live and deliver services, both from the technological and social perspectives"--Provided by publisher.

Novel Insights in Agent-based Complex Automated Negotiation Sep 22 2021 This book focuses on all aspects of complex automated negotiations, which are studied in the field of autonomous agents and multi-agent systems. This book consists of two parts. I: Agent-Based Complex Automated Negotiations and II: Automated Negotiation Agents Competition. The chapters in Part I are extended versions of papers presented at the 2012 international workshop on Agent-Based Complex Automated Negotiation (ACAN), after peer reviews by three Program Committee members. Part II examines in detail ANAC 2012 (The Third Automated Negotiating Agents Competition), in which automated agents that have different negotiation strategies and are implemented by different developers are automatically negotiated in the several negotiation domains. ANAC is an international competition in which automated negotiation strategies, submitted by a number of universities and research institutes across the world, are evaluated in tournament style. The purpose of the competition is to steer the research in the area of bilateral multi-issue, closed negotiation. This book also includes the rules, results, agents and domain descriptions for ANAC 2011 as submitted by the organizers and finalists.

Advances in Web Intelligence and Data Mining Jan 15 2021 This book presents state-of-the-art developments in the area of computationally intelligent methods applied to various aspects and ways of Web exploration and Web mining. Some novel data mining algorithms that can lead to more effective and intelligent Web-based systems are also described. Scientists, engineers, and research students can expect to find many inspiring ideas in this volume.

Algorithmic Learning Theory Jan 27 2022 This volume contains the papers presented at the 21st International Conference on Algorithmic Learning Theory (ALT 2010), which was held in Canberra, Australia, October 6-8, 2010. The conference was co-located with the 13th International Conference on Discovery Science (DS 2010) and with the Machine Learning Summer School, which was held just before ALT 2010. The technical program of ALT 2010, contained 26 papers selected from 44 submissions and 7 invited talks. The invited talks were presented in joint sessions of both conferences. ALT 2010 was dedicated to the theoretical foundations of machine learning and took place on the campus of the Australian National University, Canberra, Australia. ALT provides a forum for high-quality talks with a strong theoretical background and scientific interchange in areas such as inductive inference, universal prediction, teaching models, grammatical inference, formal languages, inductive logic programming, query learning, complexity of learning, on-line learning and relative loss bounds, semi-supervised and unsupervised learning, clustering, active learning, statistical learning, support vector machines, Vapnik-Chervonenkis dimension, probably approximately correct learning, Bayesian and causal networks, boosting and bagging, information-based methods, minimum description length, Kolmogorov complexity, kernels, graph learning, decision tree methods, Markov decision processes, reinforcement learning, and real-world applications of algorithmic learning theory. DS 2010 was the 13th International Conference on Discovery Science and focused on the development and analysis of methods for intelligent data analysis, knowledge discovery and machine learning, as well as their application to scientific knowledge discovery. As is the tradition, it was co-located and held in parallel with Algorithmic Learning Theory.

Advances in Machine Learning Research and Application: 2012 Edition Dec 26 2021 Advances in Machine Learning Research and Application / 2012 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Machine Learning. The editors have built Advances in Machine Learning Research and Application / 2012 Edition on the vast information databases of ScholarlyNews™. You can expect the information about Machine Learning in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Advances in Machine Learning Research and Application / 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

Advances in Information Technology Research and Application: 2012 Edition Jul 21 2021 Advances in Information Technology Research and Application / 2012 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Information Technology. The editors have built Advances in Information Technology Research and Application / 2012 Edition on the vast information databases of ScholarlyNews™. You can expect the information about Information Technology in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Advances in Information Technology Research and Application / 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

Pattern Classification Using Ensemble Methods Aug 22 2021 1. Introduction to pattern classification. 1.1. Pattern classification. 1.2. Induction algorithms. 1.3. Rule induction. 1.4. Decision trees. 1.5. Bayesian methods. 1.6. Other induction methods -- 2. Introduction to ensemble learning. 2.1. Back to the roots. 2.2. The wisdom of crowds. 2.3. The bagging algorithm. 2.4. The boosting algorithm. 2.5. The AdaBoost algorithm. 2.6. No free lunch theorem and ensemble learning. 2.7. Bias-variance decomposition and ensemble learning. 2.8. Occam's razor and ensemble learning. 2.9. Classifier dependency. 2.10. Ensemble methods for advanced classification tasks -- 3. Ensemble classification. 3.1. Fusions methods. 3.2. Selecting classification. 3.3. Mixture of experts and meta learning -- 4. Ensemble diversity. 4.1. Overview. 4.2. Manipulating the inducer. 4.3. Manipulating the training samples. 4.4. Manipulating the target attribute representation. 4.5. Partitioning the search space. 4.6. Multi-inducers. 4.7. Measuring the diversity -- 5. Ensemble selection. 5.1. Ensemble selection. 5.2. Pre selection of the ensemble size. 5.3. Selection of the ensemble size while training. 5.4. Pruning - post selection of the ensemble size -- 6. Error correcting output codes. 6.1. Code-matrix decomposition of multiclass problems. 6.2. Type I - training an ensemble given a code-matrix. 6.3. Type II - adapting code-matrices to the multiclass problems -- 7. Evaluating ensembles of classifiers. 7.1. Generalization error. 7.2. Computational complexity. 7.3. Interpretability of the resulting ensemble. 7.4. Scalability to large datasets. 7.5. Robustness. 7.6. Stability. 7.7. Flexibility. 7.8. Usability. 7.9. Software availability. 7.10. Which ensemble method should be used?

Advances in Web Intelligence Dec 02 2019 In recent years the Internet has become a source of data and information of indisputable importance and has immensely gained in acceptance and popularity. The World Wide Web (WWW or Web, for short), frequently named "the nervous system of the information society," offers numerous valuable services leaving no doubt about the significance of the Web in our daily activities at work and at home. Consequently, we have a clear aspiration to meet the obvious need for effective use of its potential by making improvements in both the methods and the technology applied. Among the new research directions observable in Web-related applications, intelligent methods from within the broadly perceived topic of soft computing occupy an important place. AWIC, the "Atlantic Web Intelligence Conferences" are intended to be a forum for exchange of new ideas and novel practical solutions in this new and exciting field. The conference was born as an initiative of the WIC-Poland and the WIC-Spain Research Centres, both belonging to the Web Intelligence Consortium - WIC (<http://wi-consortium.org/>). So far, three AWIC conferences have been held: in Madrid, Spain (2003), in Cancun, Mexico (2004), and in Łódź, Poland (2005).

Multiple Criteria Decision Making Jun 07 2020 Multiple Criteria Decision Making (MCDM) is all about making choices in the presence of multiple conflicting criteria. MCDM has become one of the most important and fastest growing subfields of Operations Research/Management Science. As modern MCDM started to emerge about 50 years ago, it is now a good time to take stock of developments. This book aims to present an informal, nontechnical history of MCDM, supplemented with many pictures. It covers the major developments in MCDM, from early history until now. It also covers fascinating discoveries by Nobel Laureates and other prominent scholars. The book begins with the early history of MCDM, which covers the roots of MCDM through the 1960s. It proceeds to give a decade-by-decade account of major developments in the field starting from the 1970s until now. Written in a simple and accessible manner, this book will be of interest to students, academics, and professionals in the field of decision sciences.

Decision Making in Health and Medicine Mar 17 2021 A guide for everyone involved in medical decision making to plot a clear course through complex and conflicting benefits and risks.

Data Mining and Knowledge Discovery Handbook Sep 03 2022 This book organizes key concepts, theories, standards, methodologies, trends, challenges and applications of data mining and knowledge discovery in databases. It first surveys, then provides comprehensive yet concise algorithmic descriptions of methods, including classic methods plus the extensions and novel methods developed recently. It also gives in-depth descriptions of data mining applications in various interdisciplinary industries.

KI 2007: Advances in Artificial Intelligence Apr 29 2022 This book constitutes the thoroughly refereed proceedings of the 30th Annual German Conference on Artificial Intelligence, KI 2007, held in Osnabrück, Germany, September 2007. The papers are organized in topical sections on cognition and emotion, semantic Web, analogy, natural language, reasoning, ontologies, spatio-temporal reasoning, machine learning, spatial reasoning, robot learning, classical AI problems, and agents.

Knowledge Service Engineering Handbook Apr 17 2021 Edited by Jussi Kantola, the founding faculty member of the world's first university Knowledge Service Engineering Department at Korea Advanced Institute of Science and Technology, and Waldemar Karwowski from the Department of Industrial Engineering and Management Systems at UCF, Knowledge Service Engineering Handbook defines what knowledge services engineering means and how it is different from service engineering and service production. This groundbreaking handbook explores recent advances in knowledge service engineering from the accomplished researchers and practitioners in this field from around the world and provides engineering, systemic, industry, and consumer use viewpoints to knowledge service systems and engineering paradigms. The handbook outlines how to acquire and utilize knowledge in the 21st century presenting multiple cultural aspects including US, European, and Asian perspectives. Organized into four parts, it begins with an introduction to the main concepts of knowledge services. It then explores data, information and knowledge based engineering methods and applications that can be used to develop knowledge services, followed by discussions of the importance of human networks in knowledge services. The handbook concludes with descriptions of high-performance knowledge service systems. This structure allows different uses: the information can be looked up as needed or read in the order presented. As with any new field, the excitement lies in seeing how to combine these advances in data, information, and human parts of knowledge services in the future. While most books on this subject concentrate on data, information, or knowledge, this handbook integrates coverage of all three, thus providing a complete examination of sustainable knowledge services. The handbook has been carefully designed to be of use to professionals who develop new knowledge services and related businesses, for academic researchers and lecturers to start new research projects, and for students studying knowledge services, knowledge service production, and knowledge service business.

Machine Learning and Knowledge Discovery in Databases Feb 25 2022 The three volume set LNAI 9851, LNAI 9852, and LNAI 9853 constitutes the refereed proceedings of the European Conference on Machine Learning and Knowledge Discovery in Databases, ECML PKDD 2016, held in Riva del Garda, Italy, in September 2016. The 123 full papers and 16 short papers presented were carefully reviewed and selected from a total of 460 submissions. The papers presented focus on practical and real-world studies of machine learning, knowledge discovery, data mining; innovative prototype implementations or mature systems that use machine learning techniques and knowledge discovery processes in a real setting; recent advances at the frontier of machine learning and data mining with other disciplines. Part I and Part II of the proceedings contain the full papers of the contributions presented in the scientific track and abstracts of the scientific plenary talks. Part III contains the full papers of the contributions presented in the industrial track, short papers describing demonstration, the nectar papers, and the abstracts of the industrial plenary talks.

Precision agriculture '09 Mar 29 2022 Precision Agriculture is becoming ever more relevant as the agricultural industry struggles to come to terms with the environment, economics, traceability, vehicle guidance and crop management. Whilst some benefits have proved elusive, others contribute positively to today's agriculture. Research continues to be necessary and needs to be reported and disseminated to a wide audience. These proceedings contain the reviewed papers from the 7th European Conference on Precision Agriculture. The papers reflect the wide range of disciplines that impinge upon precision agriculture including remote sensing, plant disease and weed detection, yield monitoring, soil sensing, geo statistics and path planning, regional and crop modelling, cooperation and guidance of robots, precision application, ICT in precision agriculture, future farming and European relevance for precision agriculture. The broad range of research topics reported is a valuable resource for researchers, advisors, teachers and professionals in agriculture. Also note that the reviewed papers from the 4th European Conference on Precision Livestock Farming are presented in a companion publication.

Data Mining with Decision Trees Nov 05 2022 This is the first comprehensive book dedicated entirely to the field of decision trees in data mining and covers all aspects of this important technique. Decision trees have become one of the most powerful and popular approaches in knowledge discovery and data mining, the science and technology of exploring large and complex bodies of data in order to discover useful patterns. The area is of great importance because it enables modeling and knowledge extraction from the abundance of data available. Both theoreticians and practitioners are continually seeking techniques to make the process more efficient, cost-effective and accurate. Decision trees, originally implemented in decision theory and statistics, are highly effective tools in other areas such as data mining, text mining, information extraction, machine learning, and pattern recognition. This book invites readers to explore the many benefits in data mining that decision trees offer: Self-explanatory and easy to follow when compacted; Able to handle a variety of input data: nominal, numeric and textual; Able to process datasets that may have errors or missing values; High predictive performance for a relatively small computational effort; Available in many data mining packages over a variety of platforms; Useful for various tasks, such as classification, regression, clustering and feature selection.

Soft Computing for Knowledge Discovery and Data Mining Jul 09 2020 Data Mining is the science and technology of exploring large and complex bodies of data in order to discover useful patterns. It is extremely important because it enables modeling and knowledge extraction from abundant data availability. This book introduces soft computing methods extending the envelope of problems that data mining can solve efficiently. It presents practical soft-computing approaches in data mining and includes various real-world case studies with detailed results.

Selected Readings on Electronic Commerce Technologies: Contemporary Applications Jul 29 2019 "This book offers research articles focused on key issues concerning the technologies and applications of electronic commerce"--Provided by publisher.

Comparative Risk Assessment and Environmental Decision Making May 19 2021 Decision making in environmental projects is typically a complex and confusing process characterized by trade-offs between socio-political, environmental, and economic impacts. Comparative Risk Assessment (CRA) is a methodology applied to facilitate decision making when various activities compete for limited resources. CRA has become an increasingly accepted research tool and has helped to characterize environmental profiles and priorities on the regional and national level. CRA may be considered as part of the more general but as yet quite academic field of multi-criteria decision analysis (MCDA). Considerable research in the area of MCDA has made available methods for applying scientific decision theoretical approaches to multi-criteria problems, but its applications, especially in environmental areas, are still limited. The papers show that the use of comparative risk assessment can provide the scientific basis for environmentally sound and cost-efficient policies, strategies, and solutions to our environmental challenges.

Fifty Years of Fuzzy Logic and its Applications Jan 03 2020 This book presents a comprehensive report on the evolution of Fuzzy Logic since its formulation in Lotfi Zadeh's seminal paper on "fuzzy sets," published in 1965. In addition, it features a stimulating sampling from the broad field of research and development inspired by Zadeh's paper. The chapters, written by pioneers and prominent scholars in the field, show how fuzzy sets have been successfully applied to artificial intelligence, control theory, inference, and reasoning. The book also reports on theoretical issues; features recent applications of Fuzzy Logic in the fields of neural networks, clustering, data mining and software testing; and highlights an important paradigm shift caused by Fuzzy Logic in the area of uncertainty management. Conceived by the editors as an academic celebration of the fifty years' anniversary of the 1965 paper, this work is a must-have for students and researchers willing to get an inspiring picture of the potentialities, limitations, achievements and accomplishments of Fuzzy Logic-based systems.

Machine Learning: ECML 2004 Oct 24 2021 This book constitutes the refereed proceedings of the 15th European Conference on Machine Learning, ECML 2004, held in Pisa, Italy, in September 2004, jointly with PKDD 2004. The 45 revised full papers and 6 revised short papers presented together with abstracts of 5 invited talks were carefully reviewed and selected from 280 papers submitted to ECML and 107 papers submitted to both, ECML and PKDD. The papers present a wealth of new results in the area and address all current issues in machine learning.

Content-Addressable Memories Oct 31 2019 Due to continual progress in the large-scale integration of semiconductor circuits, parallel computing principles can already be met in low-cost systems: numerous examples exist in image processing, for which special hardware is implementable with quite modest resources even by nonprofessional designers. Principles of content addressing, if thoroughly understood, can thereby be applied effectively using standard components. On the other hand, mass storage based on associative principles still exists only in the long term plans of computer technologists. This situation is somewhat confused by the fact that certain expectations are held for the development of new storage media such as optical memories and "spin glasses" (metal alloys with low-density magnetic impurities). Their technologies, however, may not ripen until after "fifth generation" computers have been built. It seems that software methods for content addressing, especially those based on hash coding principles, are still holding their position firmly, and a few innovations have been developed recently. As they need no special hardware, one might expect that they will spread to a wide circle of users. This monograph is based on an extensive literature survey, most of which was published in the First Edition. I have added Chap. 7, which contains a review of more recent work. This updated book now has references to over 1200 original publications. In the editing of the new material, I received valuable help from Anneli Heimbürger, M. Sc., and Mrs. Leila Koivisto.

Encyclopedia of Decision Making and Decision Support Technologies Sep 30 2019 As effective organizational decision making is a major factor in a company's success, a comprehensive account of current available research on the core concepts of the decision support agenda is in high demand by academicians and professionals. Through 110 authoritative contributions by over 160 of the world's leading experts the Encyclopedia of Decision Making and Decision Support Technologies presents a critical mass of research on the most up-to-date research on human and computer support of managerial decision making, including discussion on support of operational, tactical, and strategic decisions, human vs. computer system support structure, individual and group decision making, and multi-criteria decision making.

Intelligent Infrastructure in Transportation and Management Nov 12 2020 This book mainly focuses on the innovations in intelligent transportation infrastructure and management. The content of the book is selected in such a way that it will cover a wide range of areas to integrate advanced technologies and provide best and innovative solution to problems faced by the rapidly growing transportation sector. The topics of the book primarily address the needs of the students in civil, electrical, and mechanical engineering. It is equally useful as reference material for innovators, inventors, practitioners, and policymaker for an innovative and classified solution in the field of transportation and infrastructure management. Looking at the global electric and hybrid vehicles market, the book focuses on and discuss recent developments in electric mobility across the globe. In this edition, we try to feature toward an update on the performance and costs of batteries which is the current demand of the consumers. The book inspires researchers, innovators, industry experts, and policymakers to consider the solutions into the practice.

Data Mining with Decision Trees Oct 04 2022 This is the first comprehensive book dedicated entirely to the field of decision trees in data mining and covers all aspects of this important technique. Decision trees have become one of the most powerful and popular approaches in knowledge discovery and data mining, the science and technology of exploring large and complex bodies of data in order to discover useful patterns. The area is of great importance because it enables modeling and knowledge extraction from the abundance of data available. Both theoreticians and practitioners are continually seeking techniques to make the process more efficient, cost-effective and accurate. Decision trees, originally implemented in decision theory and statistics, are highly effective tools in other areas such as data mining, text mining, information extraction, machine learning, and pattern recognition. This book invites readers to explore the many benefits in data mining that decision trees offer: Self-explanatory and easy to follow when compacted; Able to handle a variety of input data: nominal, numeric and textual; Able to process datasets that may have errors or missing values; High predictive performance for a relatively small computational effort; Available in many data mining packages over a variety of platforms; Useful for various tasks, such as classification, regression, clustering and feature selection. Sample Chapter(s). Chapter 1: Introduction to Decision Trees (245 KB). Chapter 6: Advanced Decision Trees (409 KB). Chapter 10: Fuzzy Decision Trees (220 KB). Contents: Introduction to Decision Trees; Growing Decision Trees; Evaluation of Classification Trees; Splitting Criteria; Pruning Trees; Advanced Decision Trees; Decision Forests; Incremental Learning of Decision Trees;

Feature Selection; Fuzzy Decision Trees; Hybridization of Decision Trees with Other Techniques; Sequence Classification Using Decision Trees. Readership: Researchers, graduate and undergraduate students in information systems, engineering, computer science, statistics and management.

Decision Support Systems and Electronic Commerce Aug 29 2019

Multiple Criteria Decision Making Mar 05 2020 Multiple Criteria Decision Making (MCDM) is all about making choices in the presence of multiple conflicting criteria. MCDM has become one of the most important and fastest growing subfields of Operations Research/Management Science. As modern MCDM started to emerge about 50 years ago, it is now a good time to take stock of developments. This book aims to present an informal, nontechnical history of MCDM, supplemented with many pictures. It covers the major developments in MCDM, from early history until now. It also covers fascinating discoveries by Nobel Laureates and other prominent scholars. The book begins with the early history of MCDM, which covers the roots of MCDM through the 1960s. It proceeds to give a decade-by-decade account of major developments in the field starting from the 1970s until now. Written in a simple and accessible manner, this book will be of interest to students, academics, and professionals in the field of decision sciences. Contents: The Early History of MCDM; MCDM Developments in the 1970s; MCDM Developments in the 1980s; MCDM Developments in the 1990s and Beyond; MCDM Conferences; MCDM Society Traditions; Awards and Presidents; Biographies of Leading MCDM Scholars; Conclusion; Readership: Graduate-level students in business administration or operations management; engineers involved in decision making and policy implementation; business analysts, financial planners. Keywords: Multiple Criteria Decision Making; Multiattribute; Multiple Objectives; Multiple Criteria; Key Features: First book to cover an informal history of Multiple Criteria Decision Making; Covers decade-by-decade developments in MCDM, from early history until now; Contains brief biographies and pictures of major contributors in the field; Reviews: "Our ability to analyze and resolve complex decision problems is one of the most important developments of the last half of the 20th century. But, like all such endeavors, advances were often based on earlier ideas from a multitude of fields, ideas that encouraged and gave impetus to new generations of researchers. All readers of Multiple Criteria Decision Making: From Early History to the 21st Century will find that the authors have woven the early and modern histories of MCDM into a scientific adventure story, one that helps us to understand better how advances in a field of research are the result of many, many seemingly unrelated activities." Saul I Gass Professor Emeritus Department of Decision, Operations and Information Technologies Robert H Smith School of Business, University of Maryland, College Park "Rarely do we get to understand the evolution of a scientific field told with such care and understanding. And a handy guide to the MCDM literature as well! I'll have all of my students read it!" Mark H Karwan Praxair Professor in Operations Research, SUNY Distinguished Teaching Professor Industrial and Systems Engineering at the University at Buffalo (SUNY) "I really enjoyed reading this book. It was written by three experts who have lived with MCDM and its history for a long time (two of them for over 40 years!). Now our community has a useful and valuable book that can be used by students and researchers to learn about MCDM and its history. I particularly like the photos which bring the history and its people to life." Pekka Korhonen Professor of Statistics Aalto University, School of Economics "This book brings to life – contributors, contributions, activities – the evolution, growth, and future directions of MCDM, a multidiscipline that embraces all facets of decision making. Kudos to three highly distinguished MCDM scholars who have written a classic, which should be essential reading and serve as a resource for scholars in all academic and professional disciplines." Herb Moskowitz Purdue University Retired Professor "Köksalan and his co-authors provide us with a better understanding of the history of an important area in OR to which many top researchers have contributed especially over the last twenty to thirty years ... As one of the first such publications covering a specific subfield, this book has certainly set a very high standard." IFORS Newsletter

Machine Learning, Optimization, and Data Science May 31 2022 This book constitutes the post-conference proceedings of the 5th International Conference on Machine Learning, Optimization, and Data Science, LOD 2019, held in Siena, Italy, in September 2019. The 54 full papers presented were carefully reviewed and selected from 158 submissions. The papers cover topics in the field of machine learning, artificial intelligence, reinforcement learning, computational optimization and data science presenting a substantial array of ideas, technologies, algorithms, methods and applications.

Analysis of Social Media and Ubiquitous Data Aug 10 2020 This book constitutes the joint thoroughly refereed post-proceedings of The Modeling Social Media Workshop, MSM 2010 held in Toronto, Canada in June 2010 and the International Workshop on Mining Ubiquitous and Social Environments, MUSE 2010, held in Barcelona, Spain in September 2010. The eight revised full papers included were carefully reviewed and selected after two rounds of reviewing and revision. The papers address various aspects of the analysis and engineering of socio-computational systems in which social, ubiquitous and computational processes are interdependent and tightly interwoven.

Advances in Web Mining and Web Usage Analysis Feb 02 2020 Web mining and usage is a fast-moving and hugely important field of study. This new Springer text constitutes the thoroughly refereed post-proceedings of the 8th International Workshop on Mining Web Data, WEBKDD 2006, held in Philadelphia, USA in 2006. The 13 revised full papers presented together with a detailed preface went through two rounds of reviewing and improvement and were carefully selected for inclusion in the book. They cover a huge range of relevant topics.

Data Mining With Decision Trees: Theory And Applications (2nd Edition) Aug 02 2022 Decision trees have become one of the most powerful and popular approaches in knowledge discovery and data mining; it is the science of exploring large and complex bodies of data in order to discover useful patterns. Decision tree learning continues to evolve over time. Existing methods are constantly being improved and new methods introduced. This 2nd Edition is dedicated entirely to the field of decision trees in data mining; to cover all aspects of this important technique, as well as improved or new methods and techniques developed after the publication of our first edition. In this new edition, all chapters have been revised and new topics brought in. New topics include Cost-Sensitive Active Learning, Learning with Uncertain and Imbalanced Data, Using Decision Trees beyond Classification Tasks, Privacy Preserving Decision Tree Learning, Lessons Learned from Comparative Studies, and Learning Decision Trees for Big Data. A walk-through guide to existing open-source data mining software is also included in this edition. This book invites readers to explore the many benefits in data mining that decision trees offer:

Artificial Intelligence in Financial Markets Dec 14 2020 As technology advancement has increased, so to have computational applications for forecasting, modelling and trading financial markets and information, and practitioners are finding ever more complex solutions to financial challenges. Neural networking is a highly effective, trainable algorithmic approach which emulates certain aspects of human brain functions, and is used extensively in financial forecasting allowing for quick investment decision making. This book presents the most cutting-edge artificial intelligence (AI)/neural networking applications for markets, assets and other areas of finance. Split into four sections, the book first explores time series analysis for forecasting and trading across a range of assets, including derivatives, exchange traded funds, debt and equity instruments. This section will focus on pattern recognition, market timing models, forecasting and trading of financial time series. Section II provides insights into macro and microeconomics and how AI techniques could be used to better understand and predict economic variables. Section III focuses on corporate finance and credit analysis providing an insight into corporate structures and credit, and establishing a relationship between financial statement analysis and the influence of various financial scenarios. Section IV focuses on portfolio management, exploring applications for portfolio theory, asset allocation and optimization. This book also provides some of the latest research in the field of artificial intelligence and finance, and provides in-depth analysis and highly applicable tools and techniques for practitioners and researchers in this field.

Data Mining and Knowledge Discovery Handbook Jun 27 2019 Data Mining and Knowledge Discovery Handbook organizes all major concepts, theories, methodologies, trends, challenges and applications of data mining (DM) and knowledge discovery in databases (KDD) into a coherent and unified repository. This book first surveys, then provides comprehensive yet concise algorithmic descriptions of methods, including classic methods plus the extensions and novel methods developed recently. This volume concludes with in-depth descriptions of data mining applications in various interdisciplinary industries including finance, marketing, medicine, biology, engineering, telecommunications, software, and security. Data Mining and Knowledge Discovery Handbook is designed for research scientists and graduate-level students in computer science and engineering. This book is also suitable for professionals in fields such as computing applications, information systems management, and strategic research management.

Recent Advances in Data Mining of Enterprise Data: Algorithms and Applications Apr 05 2020

Network and System Security Sep 10 2020 This book constitutes the proceedings of the 10th International Conference on Network and System Security, NSS 2016, held in Taipei, Taiwan, in September 2016. The 31 full and 4 short papers presented in this volume were carefully reviewed and selected from 105 submissions. They were organized in topical sections named: authentication mechanism; cloud computing security; data mining for security application; privacy-preserving technologies; network security and forensics; searchable encryption; security policy and access control; security protocols, symmetric key cryptography; system security; Web security. The volume also contains one invited paper.

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