Foundations Of Multidimensional And Metric Data Structures The Morgan Kaufmann Series In Computer Graphics

Multi-dimensional Approaches Towards New TechnologyApplications of Spatial Data StructuresFoundations of Signal ProcessingExploring SplunkMathematical AnalysisQuerying XMLThe Algorithmic Foundations of Differential PrivacyMultidimensional ScalingSwarm Intelligence for Multi-objective Problems in Data MiningDictionary of DistancesBasics of Structural Equation ModelingComputational GeometryHandbook of Statistical Analysis and Data Mining ApplicationsFoundations of Data ScienceAnalysis of Multidimensional PovertyFundamentals of Applied Multidimensional Scaling for Educational and Psychological ResearchSocial and Political Foundations of ConstitutionsFoundations of Gas DynamicsApplied Multivariate ResearchFeature ExtractionMetric ScalingHandbook of Decision AnalysisThe Handbook of AttitudesData Mining: Concepts and TechniquesBeyond BibliometricsIntroduction to the Mathematical and Statistical Foundations of EconometricsDiscrete Choice Methods with SimulationMetric Structures for Riemannian and Non-Riemannian SpacesFoundations of Multidimensional and Metric Data StructuresHigh-Dimensional ProbabilityFoundations of Statistical Natural Language ProcessingFoundations of Image ScienceGraph DrawingCompact Data StructuresFunction Theory of Several Complex VariablesConceptual Foundations of Human Factors MeasurementPersistence Theory: From Quiver Representations to Data AnalysisThe SAGE Encyclopedia of Social Science Research MethodsMathematics for Machine LearningMeaningful Metrics

Multi-dimensional Approaches Towards New Technology

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

Applications of Spatial Data Structures

Suitable as either a textbook or reference manual, this book describes fundamental algorithmic techniques for constructing drawings of graphs. Exercises are included at the end of each chapter.

Foundations of Signal Processing

XML has become the lingua franca for representing business data, for exchanging information between business partners and applications, and for adding structure– and sometimes meaning—to text-based documents. XML offers some special challenges and opportunities in the area of search: querying XML can produce very precise, fine-grained results, if you know how to express and execute those queries. For software developers and systems architects: this book teaches the most useful approaches to querying XML documents and repositories. This book will also help managers and project leaders grasp how "querying XML fits into the larger context of querying and XML. Querying XML provides a comprehensive background from fundamental concepts (What is XML?) to data models (the Infoset, PSVI, XQuery Data Model), to APIs (querying XML from SQL or Java) and more. * Presents the concepts clearly, and demonstrates them with illustrations and examples; offers a thorough mastery of the subject area in a single book. * Provides comprehensive coverage of XML query languages, and the concepts needed to understand them completely (such as the XQuery Data Model). * Shows how to query XML documents and data using: XPath (the XML Path Language); XQuery, soon to be the new W3C Recommendation for querying XML; XQuery's companion XQueryX; and SQL, featuring the SQL/XML * Includes an extensive set of XQuery, XPath, SQL, Java, and other examples, with links to downloadable code and data samples.

Exploring Splunk

David Meister, in his latest volume, sets explores the uncharted depths behind the most common practices and most basic principles of Human Factors (HF) and its measurement process. Seeking to question the status quo, he asks what significant changes have occurred in the discipline since its inception and what capabilities have been developed. To w

Mathematical Analysis

The fundamental mathematical tools needed to understand machine learning include linear algebra, analytic geometry,

matrix decompositions, vector calculus, optimization, probability and statistics. These topics are traditionally taught in disparate courses, making it hard for data science or computer science students, or professionals, to efficiently learn the mathematics. This self-contained textbook bridges the gap between mathematical and machine learning texts, introducing the mathematical concepts with a minimum of prerequisites. It uses these concepts to derive four central machine learning methods: linear regression, principal component analysis, Gaussian mixture models and support vector machines. For students and others with a mathematical background, these derivations provide a starting point to machine learning texts. For those learning the mathematics for the first time, the methods help build intuition and practical experience with applying mathematical concepts. Every chapter includes worked examples and exercises to test understanding. Programming tutorials are offered on the book's web site.

Querying XML

This volume analyses the social and political forces that influence constitutions and the process of constitution making. It combines theoretical perspectives on the social and political foundations of constitutions with a range of detailed case studies from nineteen countries. In the first part leading scholars analyse and develop a range of theoretical perspectives, including constitutions as coordination devices, mission statements, contracts, products of domestic power play, transnational documents, and as reflection of the will of the people. In the second part these theories are examined through in-depth case studies of the social and political foundations of constitutions in countries such as Egypt, Nigeria, Japan, Romania, Bulgaria, New Zealand, Israel, Argentina and others. The result is a multidimensional study of constitutions as social phenomena and their interaction with other social phenomena.

The Algorithmic Foundations of Differential Privacy

This book is both a reference for engineers and scientists and a teaching resource, featuring tutorial chapters and research papers on feature extraction. Until now there has been insufficient consideration of feature selection algorithms, no unified presentation of leading methods, and no systematic comparisons.

Multidimensional Scaling

This practical, applications-oriented book describes essential tools for efficiently handling massive amounts of data.

Swarm Intelligence for Multi-objective Problems in Data Mining

This book describes the new generation of discrete choice methods, focusing on the many advances that are made possible by simulation. Researchers use these statistical methods to examine the choices that consumers, households, firms, and other agents make. Each of the major models is covered: logit, generalized extreme value, or GEV (including nested and cross-nested logits), probit, and mixed logit, plus a variety of specifications that build on these basics. Simulation-assisted estimation procedures are investigated and compared, including maximum stimulated likelihood, method of simulated moments, and method of simulated scores. Procedures for drawing from densities are described, including variance reduction techniques such as anithetics and Halton draws. Recent advances in Bayesian procedures are explored, including the use of the Metropolis-Hastings algorithm and its variant Gibbs sampling. The second edition adds chapters on endogeneity and expectation-maximization (EM) algorithms. No other book incorporates all these fields, which have arisen in the past 25 years. The procedures are applicable in many fields, including energy, transportation, environmental studies, health, labor, and marketing.

Dictionary of Distances

A comprehensive, state-of-the-art examination of the changing ways we measure scholarly performance and research impact.

Basics of Structural Equation Modeling

This book comes out of need and urgency (expressed especially in areas of Information Retrieval with respect to Image, Audio, Internet and Biology) to have a working tool to compare data. The book will provide powerful resource for all researchers using Mathematics as well as for mathematicians themselves. In the time when over-specialization and terminology fences isolate researchers, this Dictionary try to be "centripedal" and "oikoumeni", providing some access and altitude of vision but without taking the route of scientific vulgarisation. This attempted balance is the main philosophy of this Dictionary which defined its structure and style. Key features: - Unicity: it is the first book treating the basic notion of Distance in whole generality. - Interdisciplinarity: this Dictionary is larger in scope than majority of thematic dictionaries. - Encyclopedicity: while an Encyclopedia of Distances seems now too difficult to produce, this book (by its scope, short introductions and organization) provides the main material for it and for future tutorials on some parts of this material. - Applicability: the distances, as well as distance-related notions and paradigms, are provided in ready-to-use fashion. - Worthiness: the need and urgency for such dictionary was great in several huge areas, esp. Information Retrieval, Image Analysis, Speech Recognition and Biology. - Accessibility: the definitions are easy to locate by subject or, in Index, by alphabetic order; the introductions and definitions are reader-friendly and maximally independent one from another; still the text is structured, in the 3D HTML style, by hyperlink-like boldfaced references to similar definitions. * Covers a large

range of subjects in pure and applied mathematics * Designed to be easily applied--the distances and distance-related notions and paradigms are ready to use * Helps users quickly locate definitions by subject or in alphabetical order; stand-alone entries include references to other entries and sources for further investigation

Computational Geometry

This reference includes an applications focus on jet and rocket propulsion systems that will be useful for students and engineers.

Handbook of Statistical Analysis and Data Mining Applications

This open access edited book captures the complexities and conflicts arising at the interface of intellectual property rights (IPR) and competition law. To do so, it discusses four specific themes: (a) policies governing functioning of standard setting organizations (SSOs), transparency and incentivising future innovation; (b) issue of royalties for standard essential patents (SEPs) and related disputes; (c) due process principles, procedural fairness and best practices in competition law; and (d) coherence of patent policies and consonance with competition law to support innovation in new technologies. Many countries have formulated policies and re-oriented their economies to foster technological innovation as it is seen as a major source of economic growth. At the same time, there have been tensions between patent laws and competition laws, despite the fact that both are intended to enhance consumer welfare. In this regard, licensing of SEPs has been debated extensively, although in most instances, innovators and implementers successfully negotiate licensing of SEPs. However, there have been instances where disagreements on royalty base and royalty rates, terms of licensing, bundling of patents in licenses, pooling of licenses have arisen, and this has resulted in a surge of litigation in various jurisdictions and also drawn the attention of competition/anti-trust regulators. Further, a lingering lack of consensus among scholars, industry experts and regulators regarding solutions and techniques that are apposite in these matters across jurisdictions has added to the confusion. This book looks at the processes adopted by the competition/anti-trust regulators to apply the principles of due process and procedural fairness in investigating abuse of dominance cases against innovators.

Foundations of Data Science

Outlines a set of techniques that enable a researcher to discuss the "hidden structure" of large data bases. These techniques use proximities, measures which indicate how similar or different objects are, to find a configuration of points which reflects the structure in the data.

Analysis of Multidimensional Poverty

This book explores the fundamentals of multidimensional scaling (MDS) and how this analytic method can be used in applied setting for educational and psychological research. The book tries to make MDS more accessible to a wider audience in terms of the language and examples that are more relevant to educational and psychological research and less technical so that the readers are not overwhelmed by equations. The goal is for readers to learn the methods described in this book and immediately start using MDS via available software programs. The book also examines new applications that have previously not been discussed in MDS literature. It should be an ideal book for graduate students and researchers to better understand MDS. Fundamentals of Applied Multidimensional Scaling for Educational and Psychological Research is divided into three parts. Part I covers the basic and fundamental features of MDS models pertaining to applied research applications. Chapters in this section cover the essential features of data that are typically associated with MDS analysis such as preference ration or binary choice data, and also looking at metric and non-metric MDS models to build a foundation for later discussion and applications in later chapters. Part II examines specific MDS models and its applications for education and psychology. This includes spatial analysis methods that can be used in MDS to test clustering effect of items and individual differences MDS model (INDSCAL). Finally, Part III focuses on new applications of MDS analysis in these research fields. These new applications consist of profile analysis, longitudinal analysis, mean-level change, and pattern change. The book concludes with a historical review of MDS development as an analytical method and a look to future directions.

Fundamentals of Applied Multidimensional Scaling for Educational and Psychological Research

This comprehensive and engaging textbook introduces the basic principles and techniques of signal processing, from the fundamental ideas of signals and systems theory to real-world applications. Students are introduced to the powerful foundations of modern signal processing, including the basic geometry of Hilbert space, the mathematics of Fourier transforms, and essentials of sampling, interpolation, approximation and compression The authors discuss real-world issues and hurdles to using these tools, and ways of adapting them to overcome problems of finiteness and localization, the limitations of uncertainty, and computational costs. It includes over 160 homework problems and over 220 worked examples, specifically designed to test and expand students' understanding of the fundamentals of signal processing, and is accompanied by extensive online materials designed to aid learning, including Mathematica® resources and interactive demonstrations.

Social and Political Foundations of Constitutions

The problem of privacy-preserving data analysis has a long history spanning multiple disciplines. As electronic data about individuals becomes increasingly detailed, and as technology enables ever more powerful collection and curation of these data, the need increases for a robust, meaningful, and mathematically rigorous definition of privacy, together with a computationally rich class of algorithms that satisfy this definition. Differential Privacy is such a definition. The Algorithmic Foundations of Differential Privacy starts out by motivating and discussing the meaning of differential privacy, and proceeds to explore the fundamental techniques for achieving differential privacy, and the application of these techniques in creative combinations, using the query-release problem as an ongoing example. A key point is that, by rethinking the computational goal, one can often obtain far better results than would be achieved by methodically replacing each step of a non-private computation with a differentially private implementation. Despite some powerful computational results, there are still fundamental limitations. Virtually all the algorithms discussed herein maintain differential privacy against adversaries of arbitrary computational power -- certain algorithms are computationally intensive, others are efficient. Computational complexity for the adversary and the algorithm are both discussed. The monograph then turns from fundamentals to applications other than query-release, discussing differentially private methods for mechanism design and machine learning. The vast majority of the literature on differentially private algorithms considers a single, static, database that is subject to many analyses. Differential privacy in other models, including distributed databases and computations on data streams, is discussed. The Algorithmic Foundations of Differential Privacy is meant as a thorough introduction to the problems and techniques of differential privacy, and is an invaluable reference for anyone with an interest in the topic.

Foundations of Gas Dynamics

Poverty is a paradoxical state. Recognizable in the eld for any sensitive observer who travels in remote rural areas and urban slums and meets marginalized people in a given society, poverty still remains a challenge to conceptual formalization and to measurement that is consistent with such formalization. The analysis of poverty is multidisciplinary. It goes from ethics to economics, from political science to human biology, and any type of measurement rests on mathematics. Moreover, poverty is multifaceted according to the types of deprivation, and it is also gender and age speci c. A vector of variables is required, which raises a substantial problem for individual and group comparisons necessary to equity analysis. Multidimension- ity also complicates the aggregation necessary to perform the ef ciency analysis of policies. In the case of income poverty, these two problems, equity and ef ciency, have bene ted from very signi cant progress in the eld of economics. Similar achievements are still to come in the area of multidimensional poverty. Within this general background, this book has a very modest and narrow-scoped objective. It proposes an operational methodology for measuring multidimensional poverty, independent from the conceptual origin, the size and the qualitative as well as the quantitative nature of the primary indicators used to describe the poverty of an individual, a household or a sociodemographic entity.

Applied Multivariate Research

This book is intended for use in a rigorous introductory PhD level course in econometrics.

Feature Extraction

With the availability of software programs, such as LISREL, EQS, and AMOS, modeling (SEM) techniques have become a popular tool for formalized presentation of the hypothesized relationships underlying correlational research and test for the plausibility of hypothesizing for a particular data set. Through the use of careful narrative explanation, Maruyama's text describes the logic underlying SEM approaches, describes how SEM approaches relate to techniques like regression and factor analysis, analyzes the strengths and shortcomings of SEM as compared to alternative methodologies, and explores the various methodologies for analyzing structural equation data. In addition, Maruyama provides carefully constructed exercises both within and

Metric Scaling

This book is an English translation of the famous "Green Book" by Lafontaine and Pansu (1979). It has been enriched and expanded with new material to reflect recent progress. Additionally, four appendices, by Gromov on Levy's inequality, by Pansu on "quasiconvex" domains, by Katz on systoles of Riemannian manifolds, and by Semmes overviewing analysis on metric spaces with measures, as well as an extensive bibliography and index round out this unique and beautiful book.

Handbook of Decision Analysis

Persistence theory emerged in the early 2000s as a new theory in the area of applied and computational topology. This book provides a broad and modern view of the subject, including its algebraic, topological, and algorithmic aspects. It also elaborates on applications in data analysis. The level of detail of the exposition has been set so as to keep a survey style, while providing sufficient insights into the proofs so the reader can understand the mechanisms at work. The book is organized into three parts. The first part is dedicated to the foundations of persistence and emphasizes its connection to quiver representation theory. The second part focuses on its connection to applications through a few selected topics. The third part provides perspectives for both the theory and its applications. The book can be used as a text for a course on applied topology or data analysis.

The Handbook of Attitudes

Data Mining: Concepts and Techniques

A self-contained introduction to the fundamentals of mathematical analysis Mathematical Analysis: A Concise Introduction presents the foundations of analysis and illustrates its role in mathematics. By focusing on the essentials, reinforcing learning through exercises, and featuring a unique "learn by doing" approach, the book develops the reader's proof writing skills and establishes fundamental comprehension of analysis that is essential for further exploration of pure and applied mathematics. This book is directly applicable to areas such as differential equations, probability theory, numerical analysis, differential geometry, and functional analysis. Mathematical Analysis is composed of three parts: ?Part One presents the analysis of functions of one variable, including sequences, continuity, differentiation, Riemann integration, series, and the Lebesgue integral. A detailed explanation of proof writing is provided with specific attention devoted to standard proof techniques. To facilitate an efficient transition to more abstract settings, the results for single variable functions are proved using methods that translate to metric spaces. ?Part Two explores the more abstract counterparts of the concepts outlined earlier in the text. The reader is introduced to the fundamental spaces of analysis, including Lp spaces, and the book successfully details how appropriate definitions of integration, continuity, and differentiation lead to a powerful and widely applicable foundation for further study of applied mathematics. The interrelation between measure theory, topology, and differentiation is then examined in the proof of the Multidimensional Substitution Formula. Further areas of coverage in this section include manifolds, Stokes' Theorem, Hilbert spaces, the convergence of Fourier series, and Riesz' Representation Theorem. ?Part Three provides an overview of the motivations for analysis as well as its applications in various subjects. A special focus on ordinary and partial differential equations presents some theoretical and practical challenges that exist in these areas. Topical coverage includes Navier-Stokes equations and the finite element method. Mathematical Analysis: A Concise Introduction includes an extensive index and over 900 exercises ranging in level of difficulty, from conceptual questions and adaptations of proofs to proofs with and without hints. These opportunities for reinforcement, along with the overall concise and well-organized treatment of analysis, make this book essential for readers in upper-undergraduate or beginning graduate mathematics courses who would like to build a solid foundation in analysis for further work in all analysis-based branches of mathematics.

Beyond Bibliometrics

This book provides an introduction to the mathematical and algorithmic foundations of data science, including machine learning, high-dimensional geometry, and analysis of large networks. Topics include the counterintuitive nature of data in high dimensions, important linear algebraic techniques such as singular value decomposition, the theory of random walks and Markov chains, the fundamentals of and important algorithms for machine learning, algorithms and analysis for

clustering, probabilistic models for large networks, representation learning including topic modelling and non-negative matrix factorization, wavelets and compressed sensing. Important probabilistic techniques are developed including the law of large numbers, tail inequalities, analysis of random projections, generalization guarantees in machine learning, and moment methods for analysis of phase transitions in large random graphs. Additionally, important structural and complexity measures are discussed such as matrix norms and VC-dimension. This book is suitable for both undergraduate and graduate courses in the design and analysis of algorithms for data.

Introduction to the Mathematical and Statistical Foundations of Econometrics

The theory of several complex variables can be studied from several different perspectives. In this book, Steven Krantz approaches the subject from the point of view of a classical analyst, emphasizing its function-theoretic aspects. He has taken particular care to write the book with the student in mind, with uniformly extensive and helpful explanations, numerous examples, and plentiful exercises of varying difficulty. In the spirit of a student-oriented text, Krantz begins with an introduction to the subject, including an insightful comparison of analysis of several complex variables with the more familiar theory of one complex variable. The main topics in the book include integral formulas, convexity and pseudoconvexity, methods from harmonic analysis, and several aspects of the $\overline{\partial}$ problem. Some further topics are zero sets of holomorphic functions, estimates, partial differential equations, approximation theory, the boundary behavior of holomorphic functions, inner functions, invariant metrics, and holomorphic mappings. While due attention is paid to algebraic aspects of several complex variables (sheaves, Cousin problems, etc.), the student with a background in real and complex variable theory, harmonic analysis, and differential equations will be most comfortable with this treatment. This book is suitable for a first graduate course in several complex variables.

Discrete Choice Methods with Simulation

A ONE-OF-A-KIND GUIDE TO THE BEST PRACTICES IN DECISION ANALYSIS Decision analysis provides powerful tools for addressing complex decisions that involve uncertainty and multiple objectives, yet most training materials on the subject overlook the soft skills that are essential for success in the field. This unique resource fills this gap in the decision analysis literature and features both soft personal/interpersonal skills and the hard technical skills involving mathematics and modeling. Readers will learn how to identify and overcome the numerous challenges of decision making, choose the appropriate decision process, lead and manage teams, and create value for their organization. Performing modeling analysis, assessing risk, and implementing decisions are also addressed throughout. Additional features include: Key insights gleaned from decision analysis applications and behavioral decision analysis research Integrated coverage of the techniques of single- and multiple-objective decision analysis Multiple qualitative and quantitative techniques presented for

each key decision analysis task Three substantive real-world case studies illustrating diverse strategies for dealing with the challenges of decision making Extensive references for mathematical proofs and advanced topics The Handbook of Decision Analysis is an essential reference for academics and practitioners in various fields including business, operations research, engineering, and science. The book also serves as a supplement for courses at the upper-undergraduate and graduate levels.

Metric Structures for Riemannian and Non-Riemannian Spaces

Big data has incredible business value, and Splunk is the best tool for unlocking that value. Exploring Splunk shows you how to pinpoint answers and find patterns obscured by the flood of machinegenerated data. This book uses an engaging, visual presentation style that quickly familiarizes you with how to use Splunk. You'll move from mastering Splunk basics to creatively solving real-world problems, finding the gems hidden in big data.

Foundations of Multidimensional and Metric Data Structures

Statistical approaches to processing natural language text have become dominant in recent years. This foundational text is the first comprehensive introduction to statistical natural language processing (NLP) to appear. The book contains all the theory and algorithms needed for building NLP tools. It provides broad but rigorous coverage of mathematical and linguistic foundations, as well as detailed discussion of statistical methods, allowing students and researchers to construct their own implementations. The book covers collocation finding, word sense disambiguation, probabilistic parsing, information retrieval, and other applications.

High-Dimensional Probability

Winner of the 2006 Joseph W. Goodman Book Writing Award! A comprehensive treatment of the principles, mathematics, and statistics of image science In today's visually oriented society, images play an important role in conveying messages. From seismic imaging to satellite images to medical images, our modern society would be lost without images to enhance our understanding of our health, our culture, and our world. Foundations of Image Science presents a comprehensive treatment of the principles, mathematics, and statistics needed to understand and evaluate imaging systems. The book is the first to provide a thorough treatment of the continuous-to-discrete, or CD, model of digital imaging. Foundations of Image Science emphasizes the need for meaningful, objective assessment of image quality and presents the necessary tools for this purpose. Approaching the subject within a well-defined theoretical and physical context, this landmark text presents the mathematical underpinnings of image science at a level that is accessible to graduate students and

practitioners working with imaging systems, as well as well-motivated undergraduate students. Destined to become a standard text in the field, Foundations of Image Science covers: Mathematical Foundations: Examines the essential mathematical foundations of image science Image Formation–Models and Mechanisms: Presents a comprehensive and unified treatment of the mathematical and statistical principles of imaging, with an emphasis on digital imaging systems and the use of SVD methods Image Quality: Provides a systematic exposition of the methodology for objective or task-based assessment of image quality Applications: Presents detailed case studies of specific direct and indirect imaging systems and provides examples of how to apply the various mathematical tools covered in the book Appendices: Covers the prerequisite material necessary for understanding the material in the main text, including matrix algebra, complex variables, and the basics of probability theory

Foundations of Statistical Natural Language Processing

Foundations of Image Science

Publisher Description

Graph Drawing

This new handbook presents, synthesizes, and integrates the existing knowledge of methods, theories, and data in attitudes. The editors' goal is to promote an understanding of the broader principles underlying attitudes across several disciplines. Divided into three parts: one on definitions and methods; another on the relations of attitudes with beliefs, behavior, and affect; and a final one that integrates these relations into the broader areas of cognitive processes, communication and persuasion, social influence, and applications, the handbook also features an innovative chapter on implicit versus explicit attitudes. With contributions from the top specialists, this handbook features unique collaborations between researchers, some who have never before worked together. Every writer was encouraged to work from as unbiased a perspective as possible. A "must have" for researchers in the areas of social, political, health, clinical, counseling, and consumer psychology, marketing, and communication, the handbook will also serve as an excellent reference for advanced courses on attitudes in a variety of departments.

Compact Data Structures

From the reviews: "This book offers a coherent treatment, at the graduate textbook level, of the field that has come to be

known in the last decade or so as computational geometry. The book is well organized and lucidly written; a timely contribution by two founders of the field. It clearly demonstrates that computational geometry in the plane is now a fairly well-understood branch of computer science and mathematics. It also points the way to the solution of the more challenging problems in dimensions higher than two." #Mathematical Reviews#1 " This remarkable book is a comprehensive and systematic study on research results obtained especially in the last ten years. The very clear presentation concentrates on basic ideas, fundamental combinatorial structures, and crucial algorithmic techniques. The plenty of results is clever organized following these guidelines and within the framework of some detailed case studies. A large number of figures and examples also aid the understanding of the material. Therefore, it can be highly recommended as an early graduate text but it should prove also to be essential to researchers and professionals in applied fields of computer-aided design, computer graphics, and robotics." #Biometrical Journal#2

Function Theory of Several Complex Variables

The purpose of this book is to collect contributions that are at the intersection of multi-objective optimization, swarm intelligence (specifically, particle swarm optimization and ant colony optimization) and data mining.

Conceptual Foundations of Human Factors Measurement

"The first encyclopedia to cover inclusively both quantitative and qualitative research approaches, this set provides clear explanations of 1,000 methodologies, avoiding mathematical equations when possible with liberal cross-referencing and bibliographies. Each volume includes a list of works cited, and the third contains a comprehensive index and lists of person names, organizations, books, tests, software, major concepts, surveys, and methodologies."--"Reference that rocks," American Libraries, May 2005.

Persistence Theory: From Quiver Representations to Data Analysis

High-dimensional probability offers insight into the behavior of random vectors, random matrices, random subspaces, and objects used to quantify uncertainty in high dimensions. Drawing on ideas from probability, analysis, and geometry, it lends itself to applications in mathematics, statistics, theoretical computer science, signal processing, optimization, and more. It is the first to integrate theory, key tools, and modern applications of high-dimensional probability. Concentration inequalities form the core, and it covers both classical results such as Hoeffding's and Chernoff's inequalities and modern developments such as the matrix Bernstein's inequality. It then introduces the powerful methods based on stochastic processes, including such tools as Slepian's, Sudakov's, and Dudley's inequalities, as well as generic chaining and bounds

based on VC dimension. A broad range of illustrations is embedded throughout, including classical and modern results for covariance estimation, clustering, networks, semidefinite programming, coding, dimension reduction, matrix completion, machine learning, compressed sensing, and sparse regression.

The SAGE Encyclopedia of Social Science Research Methods

Using a conceptual, non-mathematical approach, the updated Third Edition of Applied Multivariate Research: Design and Interpretation provides full coverage of the wide range of multivariate topics that graduate students across the social and behavioral sciences encounter. Authors Lawrence S. Meyers, Glenn Gamst, and A. J. Guarino integrate innovative multicultural topics in examples throughout the book, which include both conceptual and practical coverage of: statistical techniques of data screening; multiple regression; multilevel modeling; exploratory factor analysis; discriminant analysis; structural equation modeling; structural equation modeling invariance; survival analysis; multidimensional scaling; and cluster analysis.

Mathematics for Machine Learning

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

Meaningful Metrics

This book presents a set of closely-related techniques that facilitate the visual exploration and display of a wide variety of

multivariate data, both categorical and continuous. Three methods of metric scaling - correspondence analysis, principal components analysis and multiple dimensional preference scaling - are explored in detail for their strengths and weaknesses over a wide range of data types and research situations. The book focuses upon representing the relations among two or more sets of variables, and upon applications that are exploratory in nature rather than predictive.

ROMANCE ACTION & ADVENTURE MYSTERY & THRILLER BIOGRAPHIES & HISTORY CHILDREN'S YOUNG ADULT FANTASY HISTORICAL FICTION HORROR LITERARY FICTION NON-FICTION SCIENCE FICTION