Model Choice In Nonnested Families Springerbriefs In Statistics

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System- and Data-Driven Methods and Algorithms Peter Benner 2021-11-08 An increasing complexity of models used to predict real-world systems leads to the need for algorithms to replace complex models with far simpler ones, while preserving the accuracy of the predictions. This two-volume handbook covers methods as well as applications. This first volume focuses on real-time control theory, data assimilation, real-time visualization, high-dimensional state spaces and interaction of different reduction techniques.

Beautiful Visualization Julie Steele 2010-04-23 Visualization is the graphic presentation of data -- portrayals meant to reveal complex information at a glance. Think of the familiar map of the New York City subway system, or a diagram of the human brain. Successful visualizations are beautiful not only for their aesthetic design, but also for elegant layers of detail that efficiently generate insight and new understanding. This book examines the methods of two dozen visualization experts who approach their projects from a variety of perspectives -- as artists, designers, commentators, scientists, analysts, statisticians, and more. Together they demonstrate how visualization can help us make sense of the world. Explore the

importance of storytelling with a simple visualization exercise Learn how color conveys information that our brains recognize before we're fully aware of it Discover how the books we buy and the people we associate with reveal clues to our deeper selves Recognize a method to the madness of air travel with a visualization of civilian air traffic Find out how researchers investigate unknown phenomena, from initial sketches to published papers Contributors include: Nick Bilton,Michael E. Driscoll,Jonathan Feinberg,Danyel Fisher,Jessica Hagy,Gregor Hochmuth,Todd Holloway,Noah Iliinsky,Eddie Jabbour,Valdean Klump,Aaron Koblin,Robert Kosara,Valdis Krebs,JoAnn Kuchera-Morin et al.,Andrew Odewahn,Adam Perer,Anders Persson,Maximilian Schich,Matthias Shapiro,Julie Steele,Moritz Stefaner,Jer Thorp,Fernanda Viegas,Martin Wattenberg,and Michael Young.
Interactive LISREL in Practice Armando Luis Vieira 2011-03-28 "Getting Started with a SIMPLIS Approach" is particularly appropriate for those users who are not experts in statistics, but have a basic understanding of multivariate analysis that would allow them to use this handbook as a good first foray into LISREL. Part I introduces the topic, presents the study that serves as the background for the explanation of

matters, and provides the basis for Parts II and III, which, in turn, explain the process of estimation of the measurement model and the structural model, respectively. In each section, we also suggest essential literature to support the utilization of the handbook. After having read the book, readers will have acquired a basic knowledge of structural equation modeling, namely using the LISREL program, and will be prepared to continue with the learning process.
Geographically Weighted Regression A. Stewart Fotheringham 2003-02-21 Geographical Weighted Regression (GWR) is a new local modelling technique for analysing spatial analysis. This technique allows local as opposed to global models of relationships to be measured and mapped. This is the first and only book on this technique, offering comprehensive coverage on this new 'hot' topic in spatial analysis. * Provides step-by-step examples of how to use the GWR model using data sets and examples on issues such as house price determinants, educational attainment levels and school performance statistics * Contains a broad discussion of and basic concepts on GWR through to ideas on statistical inference for GWR models * uniquely features accompanying author-written software that allows users to undertake sophisticated and complex forms of GWR within a user-friendly, Windows-based, front-end (see book for details).
Polyhedral Methods in Geosciences Daniele Antonio Di Pietro 2021-06-14 The last few years have witnessed a surge in the development and usage of discretization methods supporting general meshes in geoscience applications. The need for general polyhedral meshes in this context can arise in several situations, including the modelling of petroleum reservoirs and basins, CO_2 and nuclear storage sites, etc. In the above and other situations, classical discretization methods are either not viable or require ad hoc modifications that add to the implementation complexity. Discretization methods able to operate on polyhedral meshes and possibly delivering arbitrary-order approximations constitute in this context a veritable technological jump. The goal of this monograph is to establish a state-of-the-art reference on polyhedral methods for geoscience applications by gathering contributions from top-level research groups working on this topic. This book is addressed to graduate students and researchers wishing to deepen their knowledge of advanced numerical methods with a focus on geoscience applications, as well as practitioners of the field.
Statistical Theory of Reliability and Life Testing Richard E. Barlow 1981
Spatial Econometrics J. Paul Elhorst 2013-09-30 This book provides an overview of three generations of spatial econometric models: models based on cross-sectional data, static models based on spatial panels and dynamic spatial panel data models. The book not only presents different model specifications and their corresponding estimators, but also critically discusses the purposes for which these models can be used and how their results should be interpreted.
Dynamic Nonlinear Econometric Models Benedikt M. Pötscher 2013-03-09 Many relationships in economics, and also in other fields, are both dynamic and nonlinear. A major advance in econometrics over the last fifteen years has been the development of a theory of estimation and inference for dy namic nonlinear models. This advance was accompanied by improvements in computer technology that facilitate the practical implementation of such estimation methods. In two articles in Econometric Reviews, i.e., Pötscher and Prucha {1991a,b), we provided -an expository discussion of the basic structure of the asymptotic theory of M-estimators in dynamic nonlinear models and a review of the literature up to the beginning of this decade. Among others, the class of M-estimators contains least mean distance estimators (includ ing maximum likelihood estimators) and generalized method of moment estimators. The present book expands and revises the discussion in those articles. It is geared towards the professional econometrician or statistician. Besides reviewing the literature we also

presented in the above men tioned articles a number of then new results. One example is a consis tency result for the case where the identifiable uniqueness condition fails.
Hybrid High-Order Methods Matteo Cicuttin 2021-11-11 This book provides a comprehensive coverage of hybrid high-order methods for computational mechanics. The first three chapters offer a gentle introduction to the method and its mathematical foundations for the diffusion problem. The next four chapters address applications of increasing complexity in the field of computational mechanics: linear elasticity, hyperelasticity, wave propagation, contact, friction, and plasticity. The last chapter provides an overview of the main implementation aspects including some examples of Matlab code. The book is primarily intended for graduate students, researchers, and engineers working in related fields of application, and it can also be used as a support for graduate and doctoral lectures.
Principles of Applied Statistics D. R. Cox 2011-07-28 Applied statistics is more than data analysis, but it is easy to lose sight of the big picture. David Cox and Christl Donnelly distil decades of scientific experience into usable principles for the successful application of statistics, showing how good statistical strategy shapes every stage of an investigation. As you advance from research or policy question, to study design, through modelling and interpretation, and finally to meaningful conclusions, this book will be a valuable guide. Over a hundred illustrations from a wide variety of real applications make the conceptual points concrete, illuminating your path and deepening your understanding. This book is essential reading for anyone who makes extensive use of statistical methods in their work.
Introducing Monte Carlo Methods with R Christian Robert 2010 This book covers the main tools used in statistical simulation from a programmer's point of view, explaining the R implementation of each simulation technique and providing the output for better understanding and comparison.

Trust in Schools Anthony Bryk 2002-09-05 Most Americans agree on the necessity of education reform, but there is little consensus about how this goal might be achieved. The rhetoric of standards and vouchers has occupied center stage, polarizing public opinion and affording little room for reflection on the intangible conditions that make for good schools. Trust in Schools engages this debate with a compelling examination of the importance of social relationships in the successful implementation of school reform. Over the course of three years, Bryk and Schneider, together with a diverse team of other researchers and school practitioners, studied reform in twelve Chicago elementary schools. Each school was undergoing extensive reorganization in response to the Chicago School Reform Act of 1988, which called for greater involvement of parents and local community leaders in their neighborhood schools. Drawing on years longitudinal survey and achievement data, as well as in-depth interviews with principals, teachers, parents, and local community leaders, the authors develop a thorough account of how effective social relationships—which they term relational trust—can serve as a prime resource for school improvement. Using case studies of the network of relationships that make up the school community, Bryk and Schneider examine how the myriad social exchanges that make up daily life in a school community generate, or fail to generate, a successful educational environment. The personal dynamics among teachers, students, and their parents, for example, influence whether students regularly attend school and sustain their efforts in the difficult task of learning. In schools characterized by high relational trust, educators were more likely to experiment with new practices and work together with parents to advance improvements. As a result, these schools were also more likely to demonstrate marked gains in student learning. In contrast, schools with weak trust relations saw virtually no improvement in their

reading or mathematics scores. Trust in Schools demonstrates convincingly that the quality of social relationships operating in and around schools is central to their functioning, and strongly predicts positive student outcomes. This book offer insights into how trust can be built and sustained in school communities, and identifies some features of public school systems that can impede such development. Bryk and Schneider show how a broad base of trust across a school community can provide a critical resource as education professional and parents embark on major school reforms. A Volume in the American Sociological Association's Rose Series in Sociology

PISA 2012 Results: Excellence through Equity (Volume II) Giving Every Student the Chance to Succeed OECD 2013-12-03 This second volume of PISA 2012 results defines and measures equity in education and analyses how equity in education has evolved across countries between PISA 2003 and 2012.

Snapshot-Based Methods and Algorithms Peter Benner 2020-12-16 An increasing complexity of models used to predict real-world systems leads to the need for algorithms to replace complex models with far simpler ones, while preserving the accuracy of the predictions. This two-volume handbook covers methods as well as applications. This second volume focuses on applications in engineering, biomedical engineering, computational physics and computer science.

Entrepreneurship, Technological Upgrading and Innovation Policy in Less Developed and Peripheral Regions Ivano Dileo 2019-01-01 This special issue of the journal tries to shed light on how innovation processes occur in less developed regions by examining which factors affect these processes and how they differ substantially between the less developed and the more developed areas in Europe. There are significant differences in innovation capacity among the lagging-peripheral and the more developed regions. Recently, the downgrading of traditional

manufacturing and districts-based models in Europe has also highlighted the importance of enhancing relationships between the global and local-regional networks of entrepreneurs and innovators. The transfer of resources alone is not enough to create competitive regional economies in a global world. In this regard, innovation policy may be crucial in designing new paths for development and increasing innovation in peripheral regions. The issue consists of six articles. All of the papers focus on analyzing various aspects of the less developed and peripheral areas within a European context, and look at innovation issues from different research perspectives and methods. In particular, four papers are related to innovation in SMEs and Smart Specialisation Strategy, innovation and the regional allocation of coordination–participation in projects across EU regions, innovation policy and firm absorptive capacities, and innovation linkages with path development in rural areas. One article is based on the relationship between family firms and the propensity to invest in innovation, comparing the more and less developed macro geographical areas. The final paper concerns the nexus between policy planning and the local business ecosystems' innovative and competitive competence. The first paper by Lukasz Arendt and Wojciech Grabowski focuses on indirectly assessing the impact of innovation policies conducted in Polish NUTS 2 regions within the framework of Regional Innovation Systems and Smart Specialisation Strategy. Interestingly, the authors combine firm-level data with meso data in a multilevel setting and observe that Polish SMEs in less developed regions mostly depend on in-house capabilities, rather than on regional innovative potential, to introduce different types of innovations. Another observation is that Polish SMEs are more likely to innovate if they have an R&D department, a higher quality of labor, realized investments and they use ICT. Finally, regional policies in these less-developed regions should focus more on linking firm-level factors with regional innovation systems, so as to

enhance companies' innovation capacity. The article by Pedro Varela-Vázquez, Manuel González-López and María del Carmen Sánchez-Carreira presents a consistent descriptive analysis concerning the regional allocation of coordination and participation in projects under the 6th and 7th Framework Programmes (FPs), as well as the funds allocated by the ongoing Horizon 2020. By comparing the 6th and 7th FPs, the authors show the existence of a slight reduction in the disparities, in particular, due to the higher participation of regions from Spain, Portugal, and Italy. The results show some interesting insights, as it emerges that developed regions account for most of the participation in projects and funds from the FP instruments. Concerning less developed regions, an uneven geographical distribution of projects and funds leads to the reinforcement of pre-existing industrial and innovation hubs. The third paper is by Marco Pini. The author investigates whether, in less developed regions, family businesses run by outside managers show a higher propensity to innovate (investing in Industry 4.0) than those where the managers are family members. This research focuses on the impact of digital innovation between the less developed Italian regions (Southern) and the more developed regions (the Centre-North). The results show that in Southern Italy, family businesses are more likely to invest in digital technologies when the firm is run by an external manager and spends on R&D. However, in less developed regions, R&D requires new competencies and capabilities. Hence, innovation policies should be based on specific "innovation patterns" defined within individual regions, not only in terms of R&D incentives, but also in encouraging a policy mix approach that is not entirely based on R&D and technology issues. The fourth paper, written by Agnė Paliokaitė, refers to the "regional innovation paradox," i.e. the low absorption capacity of public funds for innovation shown by less developed region. The author has carried out an analysis of innovation policies applied to central and eastern European countries between 2007 and 2013. She finds that

policies hardly promote structural changes as they mainly focus on improving the capacities of mature sectors and on adopting existing technologies. In this sense, the results suggest that a more tailored approach to innovation capacity building is needed, taking into account the current capacity levels within the target groups. The fifth paper, by Merli Reidolf and Martin Graffenberger, analyses the role of local resources for firm innovation and path development in rural areas. Based on the case of Estonia, they find that rural resources (physical, human, immaterial, social and community, and financial) have the potential to extend and upgrade regional development paths, and to enrich existing paths with additional functions. However, merely relying on rural resources to facilitate substantial changes in regional paths does not suffice. Finally, the sixth paper which has been written by Charis Vlados and Dimos Chatzinikolaou analyses the case of business ecosystem policy from a physiological and evolutionary perspective, the so-called "Strategy, Technology and Management" which represents the organic center of the produced innovation, inside a socioeconomic organism. By studying the case of the Eastern Macedonia and Thrace region, one of the less developed regions in Greece, they present an introductory and qualitative field research. The authors outline a new possible direction for policy planning and implementation in order to expand the local business ecosystems' innovative and competitive competence, especially in the context of a less developed region, by the usage of the ILDI (Institutes of Local Development and Innovation) mechanism. We would sincerely like to thank the authors for their contributions to this special issue. The articles offer us the opportunity to evaluate various facets underneath innovation issues within the context of different peripheral areas. We also thank all the reviewers for their commitment, and for contributing to improving the quality and reliability of the articles. Finally, our special thanks go to the

Editor in Chief, Prof. Anna Ujwary-Gil, for her tireless and valuable effort in producing this journal. And, lastly, we hope that all of our readers around the world find these articles an inspiration to conduct more research on these topics in the future.

A Primer for Spatial Econometrics G. Arbia 2014-06-30 This book aims at meeting the growing demand in the field by introducing the basic spatial econometrics methodologies to a wide variety of researchers. It provides a practical guide that illustrates the potential of spatial econometric modelling, discusses problems and solutions and interprets empirical results.

Data Flow Robert Klanten 2008 "The eight comprehensive chapters in Data Flow 2 expand the definition of contemporary information graphics. Wide-ranging examples introduce new techniques and forms of expression. In addition to the inspiring visuals, interviews with the New York Times's Steve Duenes, Infosthetic's Andrew Vande Moere, Visualcomplexity's Manuel Lima, Art+Com's Joachim Sauter, and passionate cartographer Menno-Jan Kraak as well as text features by Johannes Schardt provide insight into the challenges of creating effective work."--Cover.

Domain Decomposition Methods in Science and Engineering XVI Olof Widlund 2007-07-30 Domain decomposition is an active research area concerned with the development, analysis, and implementation of coupling and decoupling strategies in mathematical and computational models of natural and engineered systems. The present volume sets forth new contributions in areas of numerical analysis, computer science, scientific and industrial applications, and software development.

Bayesian and High-Dimensional Global Optimization Anatoly Zhigljavsky 2021-03-02 Accessible to a variety of readers, this book is of interest to specialists, graduate students and researchers in mathematics, optimization, computer science, operations research, management science, engineering and other applied areas interested in solving optimization problems. Basic principles, potential and boundaries of applicability of stochastic global optimization techniques are examined in this book. A variety of issues that face specialists in global optimization are explored, such as multidimensional spaces which are frequently ignored by researchers. The importance of precise interpretation of the mathematical results in assessments of optimization methods is demonstrated through examples of convergence in probability of random search. Methodological issues concerning construction and applicability of stochastic global optimization methods are discussed, including the one-step optimal average improvement method based on a statistical model of the objective function. A significant portion of this book is devoted to an analysis of high-dimensional global optimization problems and the so-called 'curse of dimensionality'. An examination of the three different classes of high-dimensional optimization problems, the geometry of high-dimensional balls and cubes, very slow convergence of global random search algorithms in large-dimensional problems , and poor uniformity of the uniformly distributed sequences of points are included in this book.

Model Choice in Nonnested Families Basilio de Bragança Pereira 2016-12-30 This book discusses the problem of model choice when the statistical models are separate, also called nonnested. Chapter 1 provides an introduction, motivating examples and a general overview of the problem. Chapter 2 presents the classical or frequentist approach to the problem as well as several alternative procedures and their properties. Chapter 3 explores the Bayesian approach, the limitations of the classical Bayes factors and the proposed alternative Bayes factors to overcome these limitations. It also discusses a significance Bayesian procedure. Lastly, Chapter 4 examines the pure likelihood approach. Various real-data examples and computer simulations are provided throughout the text.

Understanding Psychology as a Science

Zoltan Dienes 2008-02-28 How can we objectively define categories of truth in scientific thinking? How can we reliably measure the results of research? In this ground-breaking text, Dienes undertakes a comprehensive historical analysis of the dominant schools of thought, key theories and influential thinkers that have progressed the foundational principles and characteristics that typify scientific research methodology today. This book delivers a masterfully simple, 'though not simplistic', introduction to the core arguments surrounding Popper, Kuhn and Lakatos, Fisher and Royall, Neyman and Pearson and Bayes. Subsequently, this book clarifies the prevalent misconceptions that surround such theoretical perspectives in psychology today, providing an especially accessible critique for student readers. This book launches an informative inquiry into the methods by which psychologists throughout history have arrived at the conclusions of research, equipping readers with the knowledge to accurately design and evaluate their own research and gain confidence in critiquing results in psychology research. Particular attention is given to understanding methods of measuring the falsifiability of statements, probabilities and the differing views on statistical inference. An illuminating book for any undergraduate psychology student taking courses in critical thinking, research methods, BPS's core area 'conceptual and historical issues' as well as those studying masters, phd's and experienced researchers.

The Econometrics of Panel Data Lászlo Mátyás 2008-04-06 This restructured, updated Third Edition provides a general overview of the econometrics of panel data, from both theoretical and applied viewpoints. Readers discover how econometric tools are used to study organizational and household behaviors as well as other macroeconomic phenomena such as economic growth. The book contains sixteen entirely new chapters; all other chapters have been revised to account for recent developments. With contributions from well known specialists in the field, this handbook is a standard reference for all those involved in the use of panel data in econometrics.

An Introduction to Bartlett Correction and Bias Reduction Gauss M. Cordeiro 2014-05-08 This book presents a concise introduction to Bartlett and Bartlett-type corrections of statistical tests and bias correction of point estimators. The underlying idea behind both groups of corrections is to obtain higher accuracy in small samples. While the main focus is on corrections that can be analytically derived, the authors also present alternative strategies for improving estimators and tests based on bootstrap, a data resampling technique and discuss concrete applications to several important statistical models.

Principles of Statistical Inference D. R. Cox 2006-08-10 In this definitive book, D. R. Cox gives a comprehensive and balanced appraisal of statistical inference. He develops the key concepts, describing and comparing the main ideas and controversies over foundational issues that have been keenly argued for more than two-hundred years. Continuing a sixty-year career of major contributions to statistical thought, no one is better placed to give this much-needed account of the field. An appendix gives a more personal assessment of the merits of different ideas. The content ranges from the traditional to the contemporary. While specific applications are not treated, the book is strongly motivated by applications across the sciences and associated technologies. The mathematics is kept as elementary as feasible, though previous knowledge of statistics is assumed. The book will be valued by every user or student of statistics who is serious about understanding the uncertainty inherent in conclusions from statistical analyses.

Interactive Data Visualization Matthew O. Ward 2015-06-11 An Updated Guide to the Visualization of Data for Designers, Users, and Researchers Interactive Data Visualization: Foundations, Techniques, and Applications, Second Edition provides all the theory, details, and tools necessary to build

visualizations and systems involving the visualization of data. In color throughout, it explains basic terminology and concepts, algorithmic and software engineering issues, and commonly used techniques and high-level algorithms. Full source code is provided for completing implementations. New to the Second Edition New related readings, exercises, and programming projects Better quality figures and numerous new figures New chapter on techniques for time-oriented data This popular book continues to explore the fundamental components of the visualization process, from the data to the human viewer. For developers, the book offers guidance on designing effective visualizations using methods derived from human perception, graphical design, art, and usability analysis. For practitioners, it shows how various public and commercial visualization systems are used to solve specific problems in diverse domains. For researchers, the text describes emerging technology and hot topics in development at academic and industrial centers today. Each chapter presents several types of exercises, including review questions and problems that motivate readers to build on the material covered and design alternate approaches to solving a problem. In addition, programming projects encourage readers to perform a range of tasks, from the simple implementation of algorithms to the extension of algorithms and programming techniques. Web Resource A supplementary website includes downloadable software tools and example data sets, enabling hands-on experience with the techniques covered in the text. The site also offers links to useful data repositories and data file formats, an up-to-date listing of software packages and vendors, and instructional tools, such as reading lists, lecture slides, and demonstration programs.

Spatial Econometrics: Methods and Models L. Anselin 2013-03-09 Spatial econometrics deals with spatial dependence and spatial heterogeneity, critical aspects of the data used by regional scientists. These characteristics may cause standard econometric techniques to become inappropriate. In this book, I combine several recent research results to construct a comprehensive approach to the incorporation of spatial effects in econometrics. My primary focus is to demonstrate how these spatial effects can be considered as special cases of general frameworks in standard econometrics, and to outline how they necessitate a separate set of methods and techniques, encompassed within the field of spatial econometrics. My viewpoint differs from that taken in the discussion of spatial autocorrelation in spatial statistics - e.g., most recently by Cliff and Ord (1981) and Upton and Fingleton (1985) - in that I am mostly concerned with the relevance of spatial effects on model specification, estimation and other inference, in what I call a model-driven approach, as opposed to a data-driven approach in spatial statistics. I attempt to combine a rigorous econometric perspective with a comprehensive treatment of methodological issues in spatial analysis.

Advances in Databases and Information Systems Jérôme Darmont 2020-08-17 The chapter "An Efficient Index for Reachability Queries in Public Transport Networks" is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.

Persistent Poverty In Rural America Rural Poverty 1993 A team of anthropologists, economists, geographers, political scientists, social workers, and sociologists examine the leading explanations for why poverty persists in rural America. Their findings discredit established theories such as the "culture of poverty" and suggest new explanations for rural poverty and new directions for antipoverty programs and policies.

Introduction to Spatial Econometrics James LeSage 2009-01-20 Although interest in spatial regression models has surged in recent years, a comprehensive, up-to-date text on these approaches does not exist. Filling this void, Introduction to Spatial

Econometrics presents a variety of regression methods used to analyze spatial data samples that violate the traditional assumption of independence between observations. It explores a wide range of alternative topics, including maximum likelihood and Bayesian estimation, various types of spatial regression specifications, and applied modeling situations involving different circumstances. Leaders in this field, the authors clarify the often-mystifying phenomenon of simultaneous spatial dependence. By presenting new methods, they help with the interpretation of spatial regression models, especially ones that include spatial lags of the dependent variable. The authors also examine the relationship between spatiotemporal processes and long-run equilibrium states that are characterized by simultaneous spatial dependence. MATLAB® toolboxes useful for spatial econometric estimation are available on the authors' websites. This work covers spatial econometric modeling as well as numerous applied illustrations of the methods. It encompasses many recent advances in spatial econometric models—including some previously unpublished results.

Prelis Karl G. Joreskog 1988-01-01
Spatial Econometrics Giuseppe Arbia 2006-06-08 This book bridges the gap between economic theory and spatial econometric techniques. It is accessible to those with only a basic statistical background and no prior knowledge of spatial econometric methods. It provides a comprehensive treatment of the topic, motivating the reader with examples and analysis. The volume provides a rigorous treatment of the basic spatial linear model, and it discusses the violations of the classical regression assumptions that occur when dealing with spatial data.
Domain-Specific Knowledge Graph Construction Mayank Kejriwal 2019-03-04 The vast amounts of ontologically unstructured information on the Web, including HTML, XML and JSON documents, natural language documents, tweets, blogs, markups, and even structured documents like CSV tables, all contain useful knowledge that can present a tremendous advantage to the Artificial Intelligence community if extracted robustly, efficiently and semi-automatically as knowledge graphs. Domain-specific Knowledge Graph Construction (KGC) is an active research area that has recently witnessed impressive advances due to machine learning techniques like deep neural networks and word embeddings. This book will synthesize Knowledge Graph Construction over Web Data in an engaging and accessible manner. The book will describe a timely topic for both early -and mid-career researchers. Every year, more papers continue to be published on knowledge graph construction, especially for difficult Web domains. This work would serve as a useful reference, as well as an accessible but rigorous overview of this body of work. The book will present interdisciplinary connections when possible to engage researchers looking for new ideas or synergies. This will allow the book to be marketed in multiple venues and conferences. The book will also appeal to practitioners in industry and data scientists since it will have chapters on both data collection, as well as a chapter on querying and off-the-shelf implementations. The author has, and continues to, present on this topic at large and important conferences. He plans to make the powerpoint he presents available as a supplement to the work. This will draw a natural audience for the book. Some of the reviewers are unsure about his position in the community but that seems to be more a function of his age rather than his relative expertise. I agree with some of the reviewers that the title is a little complicated. I would recommend "Domain Specific Knowledge Graphs".

Change-point Problems Edward G. Carlstein 1994
Adaptive Stochastic Methods Dmitry G. Arseniev 2018-01-09 This monograph develops adaptive stochastic methods in computational mathematics. The authors discuss the basic ideas of the algorithms and ways to analyze their properties and

efficiency. Methods of evaluation of multidimensional integrals and solutions of integral equations are illustrated by multiple examples from mechanics, theory of elasticity, heat conduction and fluid dynamics. Contents Part I: Evaluation of Integrals Fundamentals of the Monte Carlo Method to Evaluate Definite Integrals Sequential Monte Carlo Method and Adaptive Integration Methods of Adaptive Integration Based on Piecewise Approximation Methods of Adaptive Integration Based on Global Approximation Numerical Experiments Adaptive Importance Sampling Method Based on Piecewise Constant Approximation Part II: Solution of Integral Equations Semi-Statistical Method of Solving Integral Equations Numerically Problem of Vibration Conductivity Problem on Ideal-Fluid Flow Around an Airfoil First Basic Problem of Elasticity Theory Second Basic Problem of Elasticity Theory Projectional and Statistical Method of Solving Integral Equations Numerically Applications Peter Benner 2020-12-07 An increasing complexity of models used to predict real-world systems leads to the need for algorithms to replace complex models with far simpler ones, while preserving the accuracy of the predictions. This three-volume handbook covers methods as well as applications. This third volume focuses on applications in engineering, biomedical engineering, computational physics and computer science.

Enlargement of Filtration with Finance in View Anna Aksamit 2017-11-18 This volume presents classical results of the theory of enlargement of filtration. The focus is on the behavior of martingales with respect to the enlarged filtration and related objects. The study is conducted in various contexts including immersion, progressive enlargement with a random time and initial enlargement with a random variable. The aim of this book is to collect the main mathematical results (with proofs) previously spread among numerous papers, great part of which is only available in French. Many examples and applications to finance, in particular to credit risk modelling

and the study of asymmetric information, are provided to illustrate the theory. A detailed summary of further connections and applications is given in bibliographic notes which enables to deepen study of the topic. This book fills a gap in the literature and serves as a guide for graduate students and researchers interested in the role of information in financial mathematics and in econometric science. A basic knowledge of the general theory of stochastic processes is assumed as a prerequisite.

Model Order Reduction: Theory, Research Aspects and Applications Wilhelmus H. Schilders 2008-08-27 The idea for this book originated during the workshop "Model order reduction, coupled problems and optimization" held at the Lorentz Center in Leiden from S- tember 19–23, 2005. During one of the discussion sessions, it became clear that a book describing the state of the art in model order reduction, starting from the very basics and containing an overview of all relevant techniques, would be of great use for students, young researchers starting in the ?eld, and experienced researchers. The observation that most of the theory on model order reduction is scattered over many good papers, making it dif?cult to ?nd a good starting point, was supported by most of the participants. Moreover, most of the speakers at the workshop were willing to contribute to the book that is now in front of you. The goal of this book, as de?ned during the discussion sessions at the workshop, is three-fold: ?rst, it should describe the basics of model order reduction. Second, both general and more specialized model order reduction techniques for linear and nonlinear systems should be covered, including the use of several related numerical techniques. Third, the use of model order reduction techniques in practical appli- tions and current research aspects should be discussed. We have organized the book according to these goals. In Part I, the rationale behind model order reduction is explained, and an overview of the most common methods is described.

Compilation for Secure Multi-party Computation Niklas Büscher 2017-11-16 This book presents a holistic view on compiler assisted practical secure multi-party computation (MPC) over Boolean circuits. It discusses that two or more parties jointly evaluate a function over their inputs in such a way that each party keeps its input unknown to the other parties in MPC. MPC provides a generic way to construct Privacy-Enhancing Technologies, which protect sensitive data during processing steps in untrusted environments. A major obstacle in the past was to generate MPC applications by hand. Recently, special compilers have been developed to build all kinds of applications. This book also explains in detail how efficient MPC applications can be created automatically from ANSI-C, thus, bridging the areas of cryptography, compilation and hardware synthesis. It also gives an insight into the requirements for creating efficient applications for MPC and is hence of interest to not only researchers in the area of MPC but also developers realizing practical applications with MPC. For a better understanding of the complete compile chain from ANSI-C to circuits, which is the 'machine code' of MPC, the authors first give the necessary background information on MPC protocols, Boolean logic, and logic synthesis. Then the authors describe the various compilation steps required to translate any code into an adequate circuit description. Afterwards, the authors introduce a variety of optimization techniques for two classes of MPC protocols, namely techniques that improve the runtime of applications in constant- and multi-round MPC protocols. The authors also illustrate how efficient parallelization of MPC protocols can be achieved using the assistance of compilers. It presents the effectiveness of the proposed techniques by giving a detailed evaluation on benchmarking applications. Most of the aforementioned techniques are implemented in our open source compiler that is accompanying this book and allows to study compilation for MPC in practice.Researchers who are interested in practical secure multi-party computation (MPC), and developers who are interested in realizing MPC applications in practice will find this book useful as a reference, as well as advanced-level students in computer science.
Introducing LISREL Adamantios Diamantopoulos 2013-02-01 Introducing Lisrel provides a comprehensive introduction to Lisrel for structural equation modeling using a non-technical, user-friendly approach. It shows the major steps associated with the formulation and testing of a model.
Optimal Control of PDEs Under Uncertainty Jesús Martínez-Frutos 2018 This book provides a direct and comprehensive introduction to theoretical and numerical concepts in the emerging field of optimal control of partial differential equations (PDEs) under uncertainty. The main objective of the book is to offer graduate students and researchers a smooth transition from optimal control of deterministic PDEs to optimal control of random PDEs. Coverage includes uncertainty modelling in control problems, variational formulation of PDEs with random inputs, robust and risk-averse formulations of optimal control problems, existence theory and numerical resolution methods. The exposition focusses on the entire path, starting from uncertainty modelling and ending in the practical implementation of numerical schemes for the numerical approximation of the considered problems. To this end, a selected number of illustrative examples are analysed in detail throughout the book. Computer codes, written in MatLab, are provided for all these examples. This book is adressed to graduate students and researches in Engineering, Physics and Mathematics who are interested in optimal control and optimal design for random partial differential equations.--