Introduction To Modern Nonparametric Statistics Higgins

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Springer
Proven Material for a Course on the Introduction to the Theory and/or on the Applications of Classical Nonparametric Methods Since its first publication in 1971, Nonparametric Statistical Inference has been widely regarded as the source for learning about nonparametric statistics. The fifth edition carries on this tradition while thoroughly revising at least 50 percent of the material. New to the Fifth Edition Updated and revised contents based on recent journal articles in the literature A new section in the chapter on goodness-of-fit tests A new chapter that offers practical guidance on how to choose among the various nonparametric procedures covered Additional problems and examples Improved computer figures This classic, best-selling statistics book continues to cover the most commonly used nonparametric procedures. The authors carefully state the assumptions, develop the theory behind the procedures, and illustrate the techniques using realistic research examples from the social, behavioral, and life sciences. For most procedures, they present the tests of hypotheses, confidence interval estimation, sample size determination, power, and comparisons of other relevant procedures. The text also gives examples of computer applications based on Minitab, SAS, and StatXact and compares these examples with corresponding hand calculations. The appendix includes a collection of tables required for solving the data-oriented problems. Nonparametric Statistical Inference, Fifth Edition provides in-depth yet accessible coverage of the theory and methods of nonparametric statistical inference procedures. It takes a practical approach that draws on scores of examples and problems and minimizes the theorem-proof format. Jean Dickinson Gibbons was recently interviewed regarding her generous pledge to Virginia Tech.
Introduction to Nonparametric Item Response Theory Cambridge University Press
Praise for the Second Edition “This book should be an essential part of the personallibrary of every practicingstatistician.”—Technometrics Thoroughly revised and updated, the new edition of NonparametricStatistical Methods includes additional modern topics andprocedures, more practical data sets, and new problems fromreal-life situations. The book continues to emphasize theimportance of nonparametric methods as a significant branch ofmodern statistics and equips readers with the conceptual andtechnical skills necessary to select and apply the appropriateprocedures for any given situation. Written by leading statisticians, Nonparametric StatisticalMethods, Third Edition provides readers with crucialnonparametric techniques in a variety of settings, emphasizing theassumptions underlying the methods. The book provides an extensivearray of examples that clearly illustrate how to use nonparametricapproaches for handling one- or two-sample location and dispersionproblems, dichotomous data, and one-way and two-way layoutproblems. In addition, the Third Edition features: The use of the freely available R software to aid incomputation and simulation, including many new R programs writtenexplicitly for this new edition New chapters that address density estimation, wavelets,smoothing, ranked set sampling, and Bayesian nonparametrics Problems that illustrate examples from agricultural science,astronomy, biology, criminology, education, engineering,environmental science, geology, home economics, medicine,oceanography, physics, psychology, sociology, and spacescience Nonparametric Statistical Methods, Third Edition is anexcellent reference for applied statisticians and practitioners whoseek a review of nonparametric methods and their relevantapplications. The book is also an ideal textbook forupper-undergraduate and first-year graduate courses in

appliednonparametric statistics.
Applying Contemporary Statistical Techniques Brooks/Cole
Incorporating a hands-on pedagogical approach, Nonparametric Statistics for Social and Behavioral Sciences presents the concepts, principles, and methods used in performing many nonparametric procedures. It also demonstrates practical applications of the most common nonparametric procedures using IBM's SPSS software. This text is the only current nonparametric book written specifically for students in the behavioral and social sciences. Emphasizing sound research designs, appropriate statistical analyses, and accurate interpretations of results, the text: Explains a conceptual framework for each statistical procedure Presents examples of relevant research problems, associated research questions, and hypotheses that precede each procedure Details SPSS paths for conducting various analyses Discusses the interpretations of statistical results and conclusions of the research With minimal coverage of formulas, the book takes a nonmathematical approach to nonparametric data analysis procedures and shows students how they are used in research contexts. Each chapter includes examples, exercises, and SPSS screen shots illustrating steps of the statistical procedures and resulting output.
A Step-by-Step Approach Springer Science & Business Media
This companion is designed for anyone who desires a guide to using SAS to carry out nonparametric analyses. It can serve as a SAS lab manual for students enrolled in a course covering nonparametric methods where SAS is used for computing. It is also an excellent reference for researchers who currently use SAS and wish to learn about the capabilities of SAS for performing nonparametric analyses and the syntax for implementing the procedures. An important feature of this companion is that all of the SAS examples presented are self-contained and can be entered into SAS, as they appear, and executed. Thus, the user does not have to deal with issues of creating SAS data sets before using the programs. In addition to presenting the SAS code to obtain various nonparametric analyses, brief introductions to the methods themselves are also given. Particular attention is given to how SAS calculates the results it presents, and explanation provided wherever SAS presents results that might be different from what is typically presented in textbooks.
Concepts in Probability and Stochastic Modeling Duxbury Press
This book demonstrates that nonparametric statistics can be taught from a parametric point of view. As a result, one can exploit various parametric tools such as the use of the likelihood function, penalized likelihood and score functions to not only derive well-known tests but to also go beyond and make use of Bayesian methods to analyze ranking data. The book bridges the gap between parametric and nonparametric statistics and presents the best practices of the former while enjoying the robustness properties of the latter. This book can be used in a graduate course in nonparametrics, with parts being accessible to senior undergraduates. In addition, the book will be of wide interest to statisticians and researchers in applied fields.
Introduction to Nonparametric Estimation Springer
"Modern astronomical research is beset with a vast range of statistical challenges, ranging from reducing data from megadatasets to characterizing an amazing variety of variable celestial objects or testing astrophysical theory. Yet most astronomers still use a narrow suite of traditional statistical methods. Linking astronomy to the world of modern statistics, this volume is a unique resource, introducing astronomers to advanced statistics through ready-to-use code in the public-domain R statistical software environment"--
Statistical Methods for Ranking Data CRC Press
Statistical Methods, Fourth Edition, is designed to introduce students to a wide-range of popular and practical statistical techniques. Requiring a minimum of advanced mathematics, it is suitable for undergraduates in statistics, or graduate students in the physical, life, and social sciences. By providing an overview of statistical reasoning, this text equips readers with the insight needed to summarize data, recognize good experimental designs, implement appropriate analyses, and arrive at sound interpretations of statistical results. Includes extensive case studies and exercises drawn from a variety of disciplines Provides practice problems for each chapter with complete solutions Offers new and updated data sets available online Includes recommended data analysis projects with accompanying data sets
Nonparametric Statistics for Social and Behavioral Sciences CRC Press
An Introduction to Nonparametric Statistics presents techniques for statistical analysis in the absence of strong assumptions about the distributions generating the data. Rank-based and resampling techniques are heavily represented, but robust techniques are considered as well. These techniques include one-sample testing and estimation, multi-sample testing and estimation, and regression. Attention is paid to the intellectual development of the field, with a thorough review of bibliographical references. Computational tools, in R and SAS, are developed and illustrated via examples. Exercises designed to reinforce examples are included. Features Rank-based techniques including sign, Kruskal-Wallis, Friedman, Mann-Whitney and Wilcoxon tests are presented Tests are inverted to produce estimates and confidence intervals Multivariate tests are explored Techniques reflecting the dependence of a response variable on explanatory variables are presented Density estimation is explored The bootstrap and jackknife are discussed This text is intended for a graduate student in applied statistics. The course is best taken after an introductory course in statistical methodology, elementary probability, and regression. Mathematical prerequisites include calculus through multivariate differentiation and integration, and, ideally, a course in matrix algebra.
A Parametric Approach to Nonparametric Statistics Springer Science & Business Media
Nonparametric statistics has probably become the leading methodology for researchers performing data analysis. It is nevertheless true that, whereas these methods have already proved highly effective in other applied areas of knowledge such as biostatistics or social sciences, nonparametric analyses in reliability currently form an interesting area of study that has not yet been fully explored. Applied Nonparametric Statistics in Reliability is focused on the use of modern statistical methods for the estimation of dependability measures of reliability systems that operate under different conditions. The scope of the book includes: smooth estimation of the reliability function and hazard rate of non-repairable systems; study of stochastic processes for modelling the time evolution of systems when imperfect repairs are performed; nonparametric analysis of discrete and continuous time semi-Markov processes; isotonic regression analysis of the structure function of a reliability system, and lifetime regression analysis. Besides the explanation of the mathematical background, several numerical computations or simulations are presented as illustrative examples. The corresponding computer-based methods have been implemented using R and MATLAB®. A concrete modelling scheme is chosen for each practical situation and, in consequence, a nonparametric inference procedure is conducted. Applied Nonparametric Statistics in Reliability will serve the practical needs of scientists (statisticians and engineers) working on applied reliability subjects.
Modern Statistical Methods for HCI John Wiley & Sons
Never HIGHLIGHT a Book Again! Includes all testable terms, concepts, persons, places, and events. Cram101 Just the FACTS101 studyguides gives all of the outlines, highlights, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanies: 9780534387754. This item is printed on demand.
A Step-by-Step Approach Springer Science & Business Media
This is the first book on multivariate analysis to look at large data sets which describes the state of the art in analyzing such data. Material such as database management systems is included that has never appeared in statistics books before.
An Introduction to Statistical Learning BoD - Books on Demand
This book introduces advanced undergraduate, graduate students and practitioners to statistical methods for ranking data. An important aspect of nonparametric statistics is oriented towards the use of ranking data. Rank correlation is defined through the notion of distance functions and the notion of compatibility is introduced to deal with incomplete data. Ranking data are also modeled using a variety of modern tools such as CART, MCMC, EM algorithm and factor analysis. This book deals with statistical methods used for analyzing such data and provides a novel and unifying approach for hypotheses testing. The techniques described in the book are illustrated with examples and the statistical software is provided on the authors' website.
Applied Nonparametric Statistics in Reliability An Introduction to Modern Nonparametric Statistics
Applying Contemporary Statistical Techniques explains why traditional statistical methods are often inadequate or outdated when applied to modern problems. Wilcox demonstrates how new and more powerful techniques address these problems far more effectively, making these modern robust methods understandable, practical, and easily accessible. Highlights: * Assumes no previous training in statistics * Explains when and why modern methods provide more accurate results * Provides simple descriptions of when and why conventional methods can be highly unsatisfactory * Covers the latest developments on multiple comparisons * Includes recent advances in risk-based methods * Features many illustrations and examples using data from real studies * Describes and illustrates easy-to-use s-plus functions for applying cutting-edge techniques "The book is quite unique in that it offers a lot of up-to-date statistical tools. No other book at this level comes close in this aspect." Xuming He -University of Illinois, Urbana
Practical Nonparametric Statistics Springer Science & Business Media
A Practical Guide to Implementing Nonparametric and Rank-Based Procedures Nonparametric Statistical Methods Using R covers traditional nonparametric methods and rank-based analyses, including estimation and inference for models ranging from simple location models to general linear and nonlinear models for uncorrelated and correlated responses. The authors emphasize applications and statistical computation. They illustrate the methods with many real and simulated data examples using R, including the packages Rfit and npsm. The book first gives an overview of the R language and basic statistical concepts before discussing nonparametrics. It presents rank-based methods for one- and two-sample problems, procedures for regression models, computation for general fixed-effects ANOVA and ANCOVA models, and time-to-event analyses. The last two chapters cover more advanced material, including high breakdown fits for general regression models and rank-based inference for cluster correlated data. The book can be used as a primary text or supplement in a course on applied nonparametric or robust procedures and as a reference for researchers who need to implement nonparametric and rank-based methods in practice. Through numerous examples, it shows readers how to apply these methods using R.
Nonparametric Statistics CRC Press
This book presents the modern theory of nonparametric goodness-of-fit testing. It fills the gap in modern nonparametric statistical theory by discussing hypothesis testing and addresses mathematical statisticians who are interesting in the theory of non-parametric statistical inference. It will be of interest to specialists who are dealing with applied non-parametric statistical problems relevant in signal detection and transmission and in technical and medical diagnostics among others.
Studyguide for Introduction to Modern Nonparametric Statistics by Higgins, James J., ISBN 9780534387754 Sage Publications Pvt. Limited
While preserving the clear, accessible style of previous editions, Applied Nonparametric Statistical Methods, Fourth Edition reflects the latest developments in computer-intensive methods that deal with intractable analytical problems and unwieldy data sets. Reorganized and with additional material, this edition begins with a brief summary of some relevant general statistical concepts and an introduction to basic ideas of nonparametric or distribution-free methods. Designed experiments, including those with factorial treatment structures, are now the focus of an entire chapter. The text also expands coverage on the analysis of survival data and the bootstrap method. The new final chapter focuses on important modern developments, such as large sample methods and computer-intensive applications. Keeping mathematics to a minimum, this text introduces nonparametric methods to undergraduate students who are taking either mainstream statistics courses or statistics courses within other disciplines. By giving the proper attention to data collection and the interpretation of analyses, it provides a full introduction to nonparametric methods.
With R Applications Springer Science & Business Media
Taken literally, the title "All of Statistics" is an exaggeration. But in spirit, the title is apt, as the book does cover a much broader range of topics than a typical introductory book on mathematical statistics. This book is for people who want to learn probability and statistics quickly. It is suitable for graduate or advanced undergraduate students in computer science, mathematics, statistics, and related disciplines. The book includes modern topics like non-parametric curve estimation, bootstrapping, and classification, topics that are usually relegated to follow-up courses. The reader is presumed to know calculus and a little linear algebra. No previous knowledge of probability and statistics is required. Statistics, data mining, and machine learning are all concerned with collecting and analysing data.
OpenIntro Statistics Springer
This book critically reflects on current statistical methods used in Human-Computer Interaction (HCI) and introduces a number of novel methods to the reader. Covering many techniques and approaches for exploratory data analysis including effect and power calculations, experimental design, event history analysis, non-parametric testing and Bayesian inference; the research contained in this book discusses how to communicate statistical results fairly, as well as presenting a general set of recommendations for authors and reviewers to improve the quality of statistical analysis in HCI. Each chapter presents [R] code for running analyses on HCI examples and explains how the results can be interpreted. Modern Statistical Methods for HCI is aimed at researchers and

graduate students who have some knowledge of “traditional” null hypothesis significance testing, but who wish to improve their practice by using techniques which have recently emerged from statistics and related fields. This book critically evaluates current practices within the field and supports a less rigid, procedural view of statistics in favour of fair statistical communication.
Applied Nonparametric Statistical Methods Academic Press
This book is a practical introduction to statistical techniques called nonpara metric methods. Using examples, we explain assumptions and demonstrate procedures; theory is kept to a minimum. We show how basic problems are tackled and try to clear up common misapprehensions so as to help both students of statistics meeting the methods for the first time and workers in other fields faced with data needing simple but informative analysis. An analogy between experimenters and car drivers describes our aim. Statistical analyses may be done by following a set of rules without understanding their logical basis, but this has dangers. It is like driving a car with no inkling ofhow the internal combustion engine, the gears, the ignition system, the brakes actually work. Understanding the rudiments helps one get better performance and makesdrivingsafer;appropriate gearchanges become a way to reduce engine stress, prolong engine life, improve fuel economy, minimize wear on brake linings. Knowing how to change the engine oil or replace worn sparking plugs is notessential for adriver, but it will reduce costs. Learning such basics will not make one a fully fledged mechanic, even less an automotive engineer; but it all contributes to more economical and safer driving, alertingone to the dangers ofbald tyres, aleakingexhaust, worn brake linings.
Nonparametric Statistical Methods Using R John Wiley & Sons
Probability theory; Statistical inference; Some tests based on the binomial distribution; Contingency tables; Some methods based on ranks; Statistics of the koolmogorov-smirnov type.