

Introduction to the bootstrap efron and tibshirani [PDF]

An Introduction to the Bootstrap Breakthroughs in Statistics The Jackknife, the Bootstrap, and Other Resampling Plans Bootstrap Methods and Their Application Computer Age Statistical Inference Second Thoughts on the Bootstrap Bootstrap Methods The Bootstrap and Edgeworth Expansion Introduction to Variance Estimation The Jackknife, the Bootstrap, and Other Resampling Plans Exploring the Limits of Bootstrap Introductory Econometrics The Weighted Bootstrap An Introduction to Bootstrap Methods with Applications to R When Does Bootstrap Work? The Jackknife and Bootstrap Computer Age Statistical Inference, Student Edition Bootstrapping On Efron's Bootstrap Confidence Limits Bootstrap Methods Comparing Groups On Asymptotic Accuracy of Efron's Bootstrap Resampling Methods for Dependent Data Large-Scale Inference On Second Order Correctness of Efron's Bootstrap Without Cramer-type Conditions in Linear Regression Models Bootstrapping Bootstrapping and Related Techniques International Encyclopedia of Statistical Science The Practice of Business Statistics Companion Chapter 18: Bootstrap Methods and Permutation Tests Introduction to Robust Estimation and Hypothesis Testing Subsampling An Introduction to the Bootstrap Big Data Meets Survey Science Ranked Set Sampling Exponential Families in Theory and Practice Statistical and Methodological Myths and Urban Legends Continuous Univariate Distributions, Volume 2 The Encyclopedia of Research Methods in Criminology and Criminal Justice, 2 Volume Set Microeconometrics Using the ODP Bootstrap Model

An Introduction to the Bootstrap 1994-05-15 statistics is a subject of many uses and surprisingly few effective practitioners the traditional road to statistical knowledge is blocked for most by a formidable wall of mathematics the approach in an introduction to the bootstrap avoids that wall it arms scientists and engineers as well as statisticians with the computational techniques they need to analyze and understand complicated data sets

Breakthroughs in Statistics 2013-12-01 volume iii includes more selections of articles that have initiated fundamental changes in statistical methodology it contains articles published before 1980 that were overlooked in the previous two volumes plus articles from the 1980 s all of them chosen after consulting many of today s leading statisticians

The Jackknife, the Bootstrap, and Other Resampling Plans 1982-01-01 the jackknife and the bootstrap are nonparametric methods for assessing the errors in a statistical estimation problem they provide several advantages over the traditional parametric approach the methods are easy to describe and they apply to arbitrarily complicated situations distribution assumptions such as normality are never made this monograph connects the jackknife the bootstrap and many other related ideas such as cross validation random subsampling and balanced repeated replications into a unified exposition the theoretical development is at an easy mathematical level and is supplemented by a large number of numerical examples the methods described in this monograph form a useful set of tools for the applied statistician they are particularly useful in problem areas where complicated data structures are common for example in censoring missing data and highly multivariate situations

Bootstrap Methods and Their Application 1997-10-28 disk contains the library functions and documentation for use with splus for windows

Computer Age Statistical Inference 2016-07-21 the twenty first century has seen a breathtaking expansion of statistical methodology both in scope and in influence big data data science and machine learning have become familiar terms in the news as statistical methods are brought to bear upon the enormous data sets of modern science and commerce how did we get here and where are we going this book takes us on an exhilarating journey through the revolution in data analysis following the introduction of electronic computation in the 1950s beginning with classical inferential theories bayesian frequentist fisherian individual chapters take up a series of influential topics survival analysis logistic regression empirical bayes the jackknife and bootstrap random forests neural networks markov chain monte carlo inference after model selection and dozens more the distinctly modern approach integrates methodology and algorithms with statistical inference the book ends with speculation on the future direction of statistics and data science

Second Thoughts on the Bootstrap 2003 a practical and accessible introduction to the bootstrap method newly revised and updated over the past decade the application of bootstrap methods to new areas of study has expanded resulting in theoretical and applied advances across various fields bootstrap methods second edition is a highly approachable guide to the multidisciplinary real world uses of bootstrapping and is ideal for readers who have a professional interest in its methods but are without an advanced background in mathematics updated to reflect current techniques and the most up to date work on the topic the second edition features the addition of a second extended bibliography devoted solely to publications from 1999 2007 which is a valuable collection of references on the latest research in the field a discussion of the new areas of applicability for bootstrap methods including use in the pharmaceutical industry for estimating individual and population bioequivalence in clinical trials a revised chapter on when and why bootstrap fails and remedies for overcoming these drawbacks added coverage on regression censored data applications p value adjustment ratio estimators and missing data new examples and illustrations as well as extensive historical notes at the end of each chapter with a strong focus on application detailed explanations of methodology and complete coverage of modern developments in the field bootstrap methods second edition is an indispensable reference for applied statisticians engineers scientists clinicians and other practitioners who regularly use statistical methods in research it is also suitable as a supplementary text for courses in statistics and resampling methods at the upper undergraduate and graduate levels

Bootstrap Methods 2011-09-23 this monograph addresses two quite different topics each being able to shed light on the other firstly it lays the foundation for a particular view of the bootstrap secondly it gives an account of edgeworth expansion the first two chapters deal with the bootstrap and edgeworth expansion respectively while chapters 3 and 4 bring these two

themes together using edgeworth expansion to explore and develop the properties of the bootstrap the book is aimed at graduate level for those with some exposure to the methods of theoretical statistics however technical details are delayed until the last chapter such that mathematically able readers without knowledge of the rigorous theory of probability will have no trouble understanding most of the book

The Bootstrap and Edgeworth Expansion 2013-12-01 now available in paperback this book is organized in a way that emphasizes both the theory and applications of the various variance estimating techniques results are often presented in the form of theorems proofs are deleted when trivial or when a reference is readily available it applies to large complex surveys and to provide an easy reference for the survey researcher who is faced with the problem of estimating variances for real survey data

Introduction to Variance Estimation 2003-11-14 this monograph connects the jackknife the bootstrap and many other related ideas into a unified exposition

The Jackknife, the Bootstrap, and Other Resampling Plans 1982-01-31 explores the application of bootstrap to problems that place unusual demands on the method the bootstrap method introduced by bradley efron in 1973 is a nonparametric technique for inferring the distribution of a statistic derived from a sample most of the papers were presented at a special meeting sponsored by the institute of mathematical statistics and the interface foundation in may 1990

Exploring the Limits of Bootstrap 1992-04-16 this highly accessible and innovative text with supporting web site uses excel r to teach the core concepts of econometrics without advanced mathematics it enables students to use monte carlo simulations in order to understand the data generating process and sampling distribution intelligent repetition of concrete examples effectively conveys the properties of the ordinary least squares ols estimator and the nature of heteroskedasticity and autocorrelation coverage includes omitted variables binary response models basic time series and simultaneous equations the authors teach students how to construct their own real world data sets drawn from the internet which they can analyze with excel r or with other econometric software the accompanying web site with text support can be found at wabash.edu/econometrics

Introductory Econometrics 2006 introduction 1 introduction in 1979 efron introduced the bootstrap method as a kind of universal tool to obtain approximation of the distribution of statistics the now well known underlying idea is the following consider a sample x of l independent and identically distributed h i d random variables r v s with unknown probability measure p m p assume we are interested in approximating the distribution of a statistical functional t p the 1 nn empirical counterpart of the functional t p where p n l i l ax is 1 the empirical p m since in some sense p is close to p when n is large n l d from p and builds the empirical p m if one samples xl xm n n 1 mn p t p conditionally on mn l i 1 a then the behaviour of p m n m n n x 1 t p should imitate that of when n and mn get large n this idea has lead to considerable investigations to see when it is correct and when it is not when it is not one looks if there is any way to adapt it

The Weighted Bootstrap 2012-12-06 a comprehensive introduction to bootstrap methods in the r programming environment bootstrap methods provide a powerful approach to statistical data analysis as they have more general applications than standard parametric methods an introduction to bootstrap methods with applications to r explores the practicality of this approach and successfully utilizes r to illustrate applications for the bootstrap and other resampling methods this book provides a modern introduction to bootstrap methods for readers who do not have an extensive background in advanced mathematics emphasis throughout is on the use of bootstrap methods as an exploratory tool including its value in variable selection and other modeling environments the authors begin with a description of bootstrap methods and its relationship to other resampling methods along with an overview of the wide variety of applications of the approach subsequent chapters offer coverage of improved confidence set estimation estimation of error rates in discriminant analysis and applications to a wide variety of hypothesis testing and estimation problems including pharmaceutical genomics and economics to inform readers on the limitations of the method the book also exhibits counterexamples to the consistency of bootstrap methods an introduction to r programming provides the needed preparation to work with the numerous exercises and applications presented throughout the book a related website houses the book s r subroutines and an extensive listing of references

provides resources for further study discussing the topic at a remarkably practical and accessible level an introduction to bootstrap methods with applications to r is an excellent book for introductory courses on bootstrap and resampling methods at the upper undergraduate and graduate levels it also serves as an insightful reference for practitioners working with data in engineering medicine and the social sciences who would like to acquire a basic understanding of bootstrap methods

An Introduction to Bootstrap Methods with Applications to R 2014-08-21 the jackknife and bootstrap are the most popular data resampling methods used in statistical analysis the resampling methods replace theoretical derivations required in applying traditional methods such as substitution and linearization in statistical analysis by repeatedly resampling the original data and making inferences from the resamples because of the availability of inexpensive and fast computing these computer intensive methods have caught on very rapidly in recent years and are particularly appreciated by applied statisticians the primary aims of this book are 1 to provide a systematic introduction to the theory of the jackknife the bootstrap and other resampling methods developed in the last twenty years 2 to provide a guide for applied statisticians practitioners often use or misuse the resampling methods in situations where no theoretical confirmation has been made and 3 to stimulate the use of the jackknife and bootstrap and further developments of the resampling methods the theoretical properties of the jackknife and bootstrap methods are studied in this book in an asymptotic framework theorems are illustrated by examples finite sample properties of the jackknife and bootstrap are mostly investigated by examples and or empirical simulation studies in addition to the theory for the jackknife and bootstrap methods in problems with independent and identically distributed iid data we try to cover as much as we can the applications of the jackknife and bootstrap in various complicated non iid data problems

When Does Bootstrap Work? 2012-12-06 the twenty first century has seen a breathtaking expansion of statistical methodology both in scope and influence data science and machine learning have become familiar terms in the news as statistical methods are brought to bear upon the enormous data sets of modern science and commerce how did we get here and where are we going how does it all fit together now in paperback and fortified with exercises this book delivers a concentrated course in modern statistical thinking beginning with classical inferential theories bayesian frequentist fisherian individual chapters take up a series of influential topics survival analysis logistic regression empirical bayes the jackknife and bootstrap random forests neural networks markov chain monte carlo inference after model selection and dozens more the distinctly modern approach integrates methodology and algorithms with statistical inference each chapter ends with class tested exercises and the book concludes with speculation on the future direction of statistics and data science

The Jackknife and Bootstrap 2012-12-06 this book is clear and well written anyone with any interest in the basis of quantitative analysis simply must read this book well written with a wealth of explanation dougal hutchison in educational research using real data examples this volume shows how to apply bootstrapping when the underlying sampling distribution of a statistic cannot be assumed normal as well as when the sampling distribution has no analytic solution in addition it discusses the advantages and limitations of four bootstrap confidence interval methods normal approximation percentile bias corrected percentile and percentile t the book concludes with a convenient summary of how to apply this computer intensive methodology using various available software packages

Computer Age Statistical Inference, Student Edition 2021-06-17 a comprehensive practical treatment for professionals in less than two decades the bootstrap has grown from an obscure object of theoretical study to a widely used resampling method with broad applications in numerous real world situations bootstrap methods a practitioner's guide provides an introduction to the bootstrap for readers who have professional interest in these methods but do not have a background in advanced mathematics it offers reliable authoritative coverage of the bootstrap's considerable advantages as well as its drawbacks this book updates classic texts in the field by presenting results on improved confidence set estimation estimation of error rates in discriminant analysis and applications to a wide variety of hypothesis testing and estimation problems to alert readers to the limitations of the method it exhibits counterexamples to the consistency of bootstrap methods this book also makes connections between more traditional resampling methods and bootstrap outstanding special features of bootstrap methods include

the most extensive and detailed bootstrap bibliography available including more than 1 600 references discussions enlivened with stimulating topics such as data mining historical notes at the end of each chapter examples and explanations of when and why bootstrap is not effective bootstrap methods is a serious useful and unparalleled practical guide for professionals in engineering the sciences clinical medicine and applied statistics

Bootstrapping 1993-08-09 a hands on guide to using r to carry out key statistical practices in educational and behavioral sciences research computing has become an essential part of the day to day practice of statistical work broadening the types of questions that can now be addressed by research scientists applying newly derived data analytic techniques comparing groups randomization and bootstrap methods using r emphasizes the direct link between scientific research questions and data analysis rather than relying on mathematical calculations this book focus on conceptual explanations and the use of statistical computing in an effort to guide readers through the integration of design statistical methodology and computation to answer specific research questions regarding group differences utilizing the widely used freely accessible r software the authors introduce a modern approach to promote methods that provide a more complete understanding of statistical concepts following an introduction to r each chapter is driven by a research question and empirical data analysis is used to provide answers to that question these examples are data driven inquiries that promote interaction between statistical methods and ideas and computer application computer code and output are interwoven in the book to illustrate exactly how each analysis is carried out and how output is interpreted additional topical coverage includes data exploration of one variable and multivariate data comparing two groups and many groups permutation tests randomization tests and the independent samples t test bootstrap tests and bootstrap intervals interval estimates and effect sizes throughout the book the authors incorporate data from real world research studies as well as chapter problems that provide a platform to perform data analyses a related site features a complete collection of the book s datasets along with the accompanying codebooks and the r script files and commands allowing readers to reproduce the presented output and plots comparing groups randomization and bootstrap methods using r is an excellent book for upper undergraduate and graduate level courses on statistical methods particularly in the educational and behavioral sciences the book also serves as a valuable resource for researchers who need a practical guide to modern data analytic and computational methods *On Efron's Bootstrap Confidence Limits* 1986 by giving a detailed account of bootstrap methods and their properties for dependent data this book provides illustrative numerical examples throughout the book fills a gap in the literature covering research on re sampling methods for dependent data that has witnessed vigorous growth over the last two decades but remains scattered in various statistics and econometrics journals it can be used as a graduate level text and also as a research monograph for statisticians and econometricians

Bootstrap Methods 1999-09-16 we live in a new age for statistical inference where modern scientific technology such as microarrays and fmri machines routinely produce thousands and sometimes millions of parallel data sets each with its own estimation or testing problem doing thousands of problems at once is more than repeated application of classical methods taking an empirical bayes approach bradley efron inventor of the bootstrap shows how information accrues across problems in a way that combines bayesian and frequentist ideas estimation testing and prediction blend in this framework producing opportunities for new methodologies of increased power new difficulties also arise easily leading to flawed inferences this book takes a careful look at both the promise and pitfalls of large scale statistical inference with particular attention to false discovery rates the most successful of the new statistical techniques emphasis is on the inferential ideas underlying technical developments illustrated using a large number of real examples

Comparing Groups 2012-01-10 bootstrapping is a conceptually simple statistical technique to increase the quality of estimates conduct robustness checks and compute standard errors for virtually any statistic this book provides an intelligible and compact introduction for students scientists and practitioners it not only gives a clear explanation of the underlying concepts but also demonstrates the application of bootstrapping using python and stata

On Asymptotic Accuracy of Efron's Bootstrap 1980 this book contains 30 selected refereed papers from an international conference on bootstrapping and related techniques held in trier 1990 the purpose of the book is to inform about recent research in the area of bootstrap jack

knife and monte carlo tests addressing the novice and the expert it covers as well theoretical as practical aspects of these statistical techniques potential users in different disciplines as biometry epidemiology computer science economics and sociology but also theoretical researchers should consult the book to be informed on the state of the art in this area

Resampling Methods for Dependent Data 2013-03-09 the goal of this book is multidimensional a to help reviving statistics education in many parts in the world where it is in crisis for the first time authors from many developing countries have an opportunity to write together with the most prominent world authorities the editor has spent several years searching for the most reputable statisticians all over the world international contributors are either presidents of the local statistical societies or head of the statistics department at the main university or the most distinguished statisticians in their countries b to enable any non statistician to obtain quick and yet comprehensive and highly understandable view on certain statistical term method or application c to enable all the researchers managers and practitioners to refresh their knowledge in statistics especially in certain controversial fields d to revive interest in statistics among students since they will see its usefulness and relevance in almost all branches of science

Large-Scale Inference 2012-11-29 this book focuses on the practical aspects of modern and robust statistical methods the increased accuracy and power of modern methods versus conventional approaches to the analysis of variance anova and regression is remarkable through a combination of theoretical developments improved and more flexible statistical methods and the power of the computer it is now possible to address problems with standard methods that seemed insurmountable only a few years ago

On Second Order Correctness of Efron's Bootstrap Without Cramer-type Conditions in Linear Regression Models 1993 since efron's profound paper on the bootstrap an enormous amount of effort has been spent on the development of bootstrap jackknife and other resampling methods the primary goal of these computer intensive methods has been to provide statistical tools that work in complex situations without imposing unrealistic or unverifiable assumptions about the data generating mechanism this book sets out to lay some of the foundations for subsampling methodology and related methods

Bootstrapping 2021-04-19 an introduction to the bootstrap arms scientists and engineers as well as statisticians with the computational techniques they need to analyze and understand complicated data sets the bootstrap is a computer based method of statistical inference that answers statistical questions without formulas and gives a direct appreciation of variance bias coverage and other probabilistic phenomena this book presents an overview of the bootstrap and related methods for assessing statistical accuracy concentrating on the ideas rather than their mathematical justification not just for beginners the presentation starts off slowly but builds in both scope and depth to ideas that are quite sophisticated

Bootstrapping and Related Techniques 2012-12-06 offers a clear view of the utility and place for survey data within the broader big data ecosystem this book presents a collection of snapshots from two sides of the big data perspective it assembles an array of tangible tools methods and approaches that illustrate how big data sources and methods are being used in the survey and social sciences to improve official statistics and estimates for human populations it also provides examples of how survey data are being used to evaluate and improve the quality of insights derived from big data big data meets survey science a collection of innovative methods shows how survey data and big data are used together for the benefit of one or more sources of data with numerous chapters providing consistent illustrations and examples of survey data enriching the evaluation of big data sources examples of how machine learning data mining and other data science techniques are inserted into virtually every stage of the survey lifecycle are presented topics covered include total error frameworks for found data performance and sensitivities of home detection on mobile phone data assessing community wellbeing using google street view and satellite imagery using surveys to build and assess rbs religious flag and more presents groundbreaking survey methods being utilized today in the field of big data explores how machine learning methods can be applied to the design collection and analysis of social science data filled with examples and illustrations that show how survey data benefits big data evaluation covers methods and applications used in combining big data with survey statistics examines regulations as well as ethical and privacy issues big data meets survey science a collection of innovative methods is an excellent book for both the survey and

social science communities as they learn to capitalize on this new revolution it will also appeal to the broader data and computer science communities looking for new areas of application for emerging methods and data sources

International Encyclopedia of Statistical Science 2010-12-01 ranked set sampling is one of the new areas of study in this region of the world and is a growing subject of research recently researchers have paid attention to the development of the types of sampling though it was not welcome in the beginning it has numerous advantages over the classical sampling techniques ranked set sampling is doubly random and can be used in any survey designs the pakistan journal of statistics had attracted statisticians and samplers around the world to write up aspects of ranked set sampling all of the essays in this book have been reviewed by many critics this volume can be used as a reference book for postgraduate students in economics social sciences medical and biological sciences and statistics the subject is still a hot topic for mphil and phd students for their dissertations

The Practice of Business Statistics Companion Chapter 18: Bootstrap Methods and Permutation Tests 2003-03-10 this accessible course on a central player in modern statistical practice connects models with methodology without need for advanced math

Introduction to Robust Estimation and Hypothesis Testing 2012-01-12 this book provides an up to date review of commonly undertaken methodological and statistical practices that are sustained in part upon sound rationale and justification and in part upon unfounded lore some examples of these methodological urban legends as we refer to them in this book are characterized by manuscript critiques such as a your self report measures suffer from common method bias b your item to subject ratios are too low c you can t generalize these findings to the real world or d your effect sizes are too low historically there is a kernel of truth to most of these legends but in many cases that truth has been long forgotten ignored or embellished beyond recognition this book examines several such legends each chapter is organized to address a what the legend is that we almost all know to be true b what the kernel of truth is to each legend c what the myths are that have developed around this kernel of truth and d what the state of the practice should be this book meets an important need for the accumulation and integration of these methodological and statistical practices

Subsampling 2012-12-06 comprehensive reference for statistical distributions continuous univariate distributions volume 2 provides in depth reference for anyone who applies statistical distributions in fields including engineering business economics and the sciences covering a range of distributions both common and uncommon this book includes guidance toward extreme value logistics laplace beta rectangular noncentral distributions and more each distribution is presented individually for ease of reference with clear explanations of methods of inference tolerance limits applications characterizations and other important aspects including reference to other related distributions

[An Introduction to the Bootstrap](#) 1994-05-15 the encyclopedia of research methods in criminology criminal justice the most comprehensive reference work on research designs and methods in criminology and criminal justice this encyclopedia of research methods in criminology and criminal justice offers a comprehensive survey of research methodologies and statistical techniques that are popular in criminology and criminal justice systems across the globe with contributions from leading scholars and practitioners in the field it offers a clear insight into the techniques that are currently in use to answer the pressing questions in criminology and criminal justice the encyclopedia contains essential information from a diverse pool of authors about research designs grounded in both qualitative and quantitative approaches it includes information on popular datasets and leading resources of government statistics in addition the contributors cover a wide range of topics such as the most current research on the link between guns and crime rational choice theory and the use of technology like geospatial mapping as a crime reduction tool this invaluable reference work offers a comprehensive survey of international research designs methods and statistical techniques includes contributions from leading figures in the field contains data on criminology and criminal justice from cambridge to chicago presents information on capital punishment domestic violence crime science and much more helps us to better understand explain and prevent crime written for undergraduate students graduate students and researchers the encyclopedia of research methods in criminology and criminal justice is the first reference work of its kind to offer a comprehensive review of this important topic

Big Data Meets Survey Science 2020-09-29 this book provides the most comprehensive treatment to date of microeconometrics the analysis of individual level data on the economic behavior of individuals or firms using regression methods for cross section and panel data the book is oriented to the practitioner a basic understanding of the linear regression model with matrix algebra is assumed the text can be used for a microeconometrics course typically a second year economics phd course for data oriented applied microeconometrics field courses and as a reference work for graduate students and applied researchers who wish to fill in gaps in their toolkit distinguishing features of the book include emphasis on nonlinear models and robust inference simulation based estimation and problems of complex survey data the book makes frequent use of numerical examples based on generated data to illustrate the key models and methods more substantially it systematically integrates into the text empirical illustrations based on seven large and exceptionally rich data sets

[Ranked Set Sampling](#) 2010-09-13

Exponential Families in Theory and Practice 2022-12-15

[Statistical and Methodological Myths and Urban Legends](#) 2010-10-18

Continuous Univariate Distributions, Volume 2 1995-05-08

The Encyclopedia of Research Methods in Criminology and Criminal Justice, 2 Volume Set 2021-09-08

Microeconometrics 2005-05-09

[Using the ODP Bootstrap Model](#) 2016