

《数理统计(第2版)》

图书基本信息

书名：《数理统计(第2版)》

13位ISBN编号：9787510005343

10位ISBN编号：7510005345

出版时间：2009-10-1

出版社：世界图书出版公司

作者：(美)邵军 (Jun Shao)

页数：591

版权说明：本站所提供下载的PDF图书仅提供预览和简介以及在线试读，请支持正版图书。

更多资源请访问：www.tushu000.com

《数理统计(第2版)》

前言

This book is intended for a course entitled Mathematical Statistics offered at the Department of Statistics, University of Wisconsin . Madison . This course , taught in a mathematically rigorous fashion , covers essential materials in statistical theory that a first or second year graduate student typically needs to learn as preparation for work on a Ph . D . degree in statistics . The course is designed for two 15-week semesters . with three lecture hours and two discussion hours in each week. Students in this course are assumed to have a good knowledge of advanced calculus . A course in real analysis or measure theory prior to this course is often recommended . Chapter 1 provides a quick overview of important concepts and results in measure-theoretic probability theory that are used as tools in mathematical statistics . Chapter 2 introduces some fundamental concepts in statistics , including statistical models . the principle of sufficiency in data reduction , and two statistical approaches adopted throughout the book : statistical decision theory and statistical inference .

Each of Chapters 3 through 7 provides a detailed study of an important topic in statistical decision theory and inference : Chapter 3 introduces the theory of unbiased estimation ; Chapter 4 studies theory and methods in point estimation under parametric models ; Chapter 5 covers point estimation in nonparametric settings ; Chapter 6 focuses on hypothesis testing ; and Chapter 7 discusses interval estimation and confidence sets . The classical frequentist approach is adopted in this book . although the Bayesian approach is also introduced (§ 2 . 3 . 2 , § 4 . 1 , § 6 . 4 . 4 , and § 7 . 1 . 3) . Asymptotic (large sample) theory , a crucial part of statistical inference , is studied throughout the book , rather than in a separate chapter . About 85% of the book covers classical results in statistical theory that are typically found in textbooks of a similar level . These materials are in the Statistics Department ' S Ph . D . qualifying examination syllabus .

《数理统计(第2版)》

内容概要

《数理统计(第2版)(英文版)》内容简介：Probability Theory、Probability Spaces and Random Elements、
- fields and measures、Measurable functions and distributions、Integration and Differentiation、Integration
、Radon.Nikodym derivative、Distributions and Their Characteristics、Distributions and probability densities
、Moments and moment inequalities、Moment generating and characteristic functions、onditional Expectations
、Conditional expectations、Independence、Conditional distributions、Markov chains and martingales
、Asymptotic Theory、Convergence modes and stochastic orders等等。

书籍目录

- Preface to the First Edition
- Preface to the Second Edition
- Chapter 1. Probability Theory
 - 1.1 Probability Spaces and Random Elements
 - 1.1.1 σ -fields and measures
 - 1.1.2 Measurable functions and distributions
 - 1.2 Integration and Differentiation
 - 1.2.1 Integration
 - 1.2.2 Radon-Nikodym derivative
 - 1.3 Distributions and Their Characteristics
 - 1.3.1 Distributions and probability densities
 - 1.3.2 Moments and moment inequalities
 - 1.3.3 Moment generating and characteristic functions
 - 1.4 Conditional Expectations
 - 1.4.1 Conditional expectations
 - 1.4.2 Independence
 - 1.4.3 Conditional distributions
 - 1.4.4 Markov chains and martingales
 - 1.5 Asymptotic Theory
 - 1.5.1 Convergence modes and stochastic orders
 - 1.5.2 Weak convergence
 - 1.5.3 Convergence of transformations
 - 1.5.4 The law of large numbers
 - 1.5.5 The central limit theorem
 - 1.5.6 Edgeworth and Cornish-Fisher expansions
 - 1.6 Exercises
- Chapter 2. Fundamentals of Statistics
 - 2.1 Populations, Samples, and Models
 - 2.1.1 Populations and samples
 - 2.1.2 Parametric and nonparametric models
 - 2.1.3 Exponential and location-scale families
 - 2.2 Statistics, Sufficiency, and Completeness
 - 2.2.1 Statistics and their distributions
 - 2.2.2 Sufficiency and minimal sufficiency
 - 2.2.3 Complete statistics
 - 2.3 Statistical Decision Theory
 - 2.3.1 Decision rules, Loss functions, and risks
 - 2.3.2 Admissibility and optimality
 - 2.4 Statistical Inference
 - 2.4.1 Point estimators
 - 2.4.2 Hypothesis tests
 - 2.4.3 Confidence sets
 - 2.5 Asymptotic Criteria and Inference
 - 2.5.1 Consistency
 - 2.5.2 Asymptotic bias, variance, and mse
 - 2.5.3 Asymptotic inference
 - 2.6 Exercises

Chapter 3.Unbiased Estimation

3.1 The UMVUE

3.1.1 Sufficient and complete statistics

3.1.2 A necessary and.sufficient condition

3.1.3 Information inequality

3.1.4 Asymptotic properties of UMVUE's

3.2 U-Statistics

3.2.1 Some examples

3.2.2 Variances of U-statistics

3.2.3 The projection method

3.3 The LSE in Linear Models

3.3.1 The LSE and estimability

3.3.2 The UMVUE and BLUE

3.3.3 Robustness of LSE's

3.3.4 Asymptotic properties of LSE's

3.4 Unbiased Estimators in Survey Problems

3.4.1 UMVUE's of population totals

3.4.2 Horvitz-Thompson estimators

3.5 Asymptotically Unbiased Estimators

3.5.1 Functions of unbiased estimators

3.5.2 The method of moments

3.5.3 V-statistics

3.5.4 The weighted LSE

3.6 Exercises

Chapter 4.Estimation in Parametric Models

4.1 Bayes Decisions and Estimators

4.1.1 Bayes actions

4.1.2 Empirical and hierarchical Bayes methods

4.1.3 Bayes rules and estimators

4.1.4 Markov chain Monte Carlo

4.2 Invariance.....

4.2.1 One-parameter location families

4.2.2 One-parameter scale families

4.2.3 General location-scale families

4.3 Minimality and Admissibility

4.3.1 Estimators with constant risks

4.3.2 Results in one-parameter exponential families

4.3.3 Simultaneous estimation and shrinkage estimators

4.4 The Method of Maximum Likelihood

4.4.1 The likelihood function and MLE's

4.4.2 MLE's in generalized linear models

4.4.3 Quasi-likelihoods and conditional likelihoods

4.5 Asymptotically Efficient Estimation

4.5.1 Asymptotic optimality

4.5.2 Asymptotic efficiency of MLE's and RLE's

4.5.3 Other asymptotically efficient estimators

4.6 Exercises

Chapter 5.Estimation in Nonparametric Models

5.1 Distribution Estimators

- 5.1.1 Empirical C.d.f.'s in i.i.d.cases
- 5.1.2 Empirical likelihoods
- 5.1.3 Density estimation
- 5.1.4 Semi-parametric methods
- 5.2 Statistical Functionals
 - 5.2.1 Differentiability and asymptotic normality
 - 5.2.2 L-, M- and R-estimators and rank statistics
- 5.3 Linear Functions of Order Statistics
 - 5.3.1 Sample quantiles
 - 5.3.2 Robustness and efficiency
 - 5.3.3 L-estimators in linear models
- 5.4 Generalized Estimating Equations
 - 5.4.1 The GEE method and its relationship with others
 - 5.4.2 Consistency of GEE estimators
 - 5.4.3 Asymptotic normality of GEE estimators
- 5.5 Variance Estimation
 - 5.5.1 The substitution method
 - 5.5.2 The jackknife
 - 5.5.3 The bootstrap
- 5.6 Exercises
- Chapter 6. Hypothesis Tests
 - 6.1 UMP Tests
 - 6.1.1 The Neyman-Pearson lemma
 - 6.1.2 Monotone likelihood ratio
 - 6.1.3 UMP tests for two-sided hypotheses
 - 6.2 UMP Unbiased Tests
 - 6.2.1 Unbiasedness, similarity, and Neyman structure
 - 6.2.2 UMPU tests in exponential families
 - 6.2.3 UMPU tests in normal families
-
- Chapter 7 Confidence Sets
- References
- List of Notation
- List of Abbreviations
- Index of Definitions, Main Results, and Examples
- Author Index
- Subject Index

《数理统计(第2版)》

精彩短评

- 1、折后大概34元买到了这本书，非常好的数理统计教材。
- 2、原版书看起来还是有点难度
- 3、数理统计的经典教材，不用多说。世界图书出版社引进了这么多好书，功德无量啊！
- 4、该书很好，就是有点难，讲的比较深入，适合研究生使用
- 5、概率与数理统计的经典教材！
- 6、本书是Wisconsin大学统计专业的博士教材，邵军教授的书，非常值得我们学习！
- 7、非常全面的数理统计教材，目前当作参考书用.....
- 8、非常好的一本数理统计教材，折后大概34元，很划算。
- 9、SHAO JUN大作,入门教材,内容丰富,理论充实
- 10、同学推荐买的，挺不错，内容设计的很合理~
- 11、加上一本习题集,可斩数理统计
- 12、非常适合中国学生口味
- 13、系主任写的教科书，ms国内也用。
- 14、邵军的这本数理统计还是比较有深度的 基于测度讲的 适合经济学博士生课程高计一的拓展补充

《数理统计(第2版)》

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:www.tushu000.com