

《统计理论》

图书基本信息

书名：《统计理论》

13位ISBN编号：9787510068118

出版时间：2014-1-1

页数：702

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

《统计理论》

内容概要

《统计理论(英文)》是一部经典的讲述统计理论的研究生教程，综合性强，内容涵盖：估计；检验；大样本理论，这些都是研究生要进入博士或者更高层次必须学习的预备知识。为了让读者具备更加强硬的数学背景和更广阔的理论知识，书中不仅给出了经典方法，也给出了贝叶斯推理知识。《统计理论(英文)》目次如下：概率模型；充分统计量；决策理论；假设检验；估计；等价；大样本理论；分层模型；序列分析；附录：测度与积分理论；概率论；数学定理；分布概述。

书籍目录

- preface
- chapter 1: probability models
 - 1.1 background
 - 1.1.1 general concepts
 - 1.1.2 classical statistics
 - 1.1.3 bayesian statistics
 - 1.2 exchangeability
 - 1.2.1 distributional symmetry
 - 1.2.2 frequency and exchangeability
 - 1.3 parametric models
 - 1.3.1 prior, posterior, and predictive distributions
 - 1.3.2 improper prior distributions
 - 1.3.3 choosing probability distributions
 - 1.4 deffinit's representation theorem
 - 1.4.1 understanding the theorems
 - 1.4.2 the mathematical statements
 - 1.4.3 some examples
 - 1.5 proofs of deffinit's theorem and related results*
 - 1.5.1 strong law of large numbers
 - 1.5.2 the bernoulli case
 - 1.5.3 the general finite case'
 - 1.5.4 the general infinite case
 - 1.5.5 formal introduction to parametric models*
 - 1.6 infinite-dimensional parameters*
 - 1.6.1 dirichlet processes
 - 1.6.2 tailfree processes
 - 1.7 problems
- chapter 2: sufficient statistics
 - 2.1 definitions
 - 2.1.1 notational overview
 - 2.1.2 sufficiency
 - 2.1.3 minimal and plete sufficiency
 - 2.1.4 ancillarity
 - 2.2 exponential families of distributions
 - 2.2.1 basic properties
 - 2.2.2 smoothness properties
 - 2.2.3 a characterization theorem*
 - 2.3 information
 - 2.3.1 fisher information
 - 2.3.2 kullback-leibler information
 - 2.3.3 conditional information*
 - 2.3.4 jeffreys' prior*
 - 2.4 extremal families'
 - 2.4.1 the main results
 - 2.4.2 examples
 - 2.4.3 proofs
 - 2.5 problems

chapter 3: decision theory

3.1 decision problems

3.1.1 framework

3.1.2 elements of bayesian decision theory

3.1.3 elements of classical decision theory

3.1.4 summary

3.2 classical decision theory

3.2.1 the role of sufficient statistics

3.2.2 admissibility

3.2.3 james-stein estimators

3.2.4 minimax rules

3.2.5 plete classes

3.3 axiomatic derivation of decision theory'

3.3.1 definitions and axioms

3.3.2 examples

3.3.3 the main theorems

3.3.4 relation to decision theory

3.3.5 proofs of the main theorems'

3.3.6 state-dependent utility*

3.4 problems:

chapter 4: hypothesis testing

4.1 introduction

4.1.1 a special kind of decision problem

4.1.2 pure significance tests

4.2 bayesian solutions

4.2.1 testing in general

4.2.2 bayes factors

4.3 most powerful tests

4.3.1 simple hypotheses and alternatives

4.3.2 simple hypotheses, posite alternatives

4.3.3 one-sided tests

4.3.4 two-sided hypotheses

4.4 unbiased tests

4.4. i general results

4.4.2 interval hypotheses

4.4.3 point hypotheses

4.5 nuisance parameters

4.5.1 neyman structure

4.5.2 tests about natural parameters

4.5.3 linear binations of natural parameters

4.5.4 other two-sided cases'

4.5.5 likelihood ratio tests

4.5.6 the standard f-test as a bayes rule* .

4.6 p-values

4.6.1 definitions and examples

4.6.2 p-values and bayes factors

4.7 problems

chapter 5: estimation

5.1 point estimation

- 5.1.1 minimum variance unbiased estimation
- 5.1.2 lower bounds on the variance of unbiased estimators
- 5.1.3 maximum likelihood estimation
- 5.1.4 bayesian estimation
- 5.1.5 robust estimation*
- 5.2 set estimation
 - 5.2.1 confidence sets
 - 5.2.2 prediction sets*
 - 5.2.3 tolerance sets*
 - 5.2.4 bayesian set estimation
 - 5.2.5 decision theoretic set estimation'
- 5.3 the bootstrap*
 - 5.3.1 the general concept
 - 5.3.2 standard deviations and bias
 - 5.3.3 bootstrap confidence intervals
- 5.4 problems
- chapter 6: equivariance
 - 6.1 mon examples
 - 6.1.1 location problems
 - 6.1.2 scale problems'
 - 6.2 equivariant decision theory
 - 6.2.1 groups of transformations
 - 6.2.2 equivariance and changes of units
 - 6.2.3 minimum risk equivariant decisions
 - 6.3 testing and confidence intervals'
 - 6.3.1 p-values in invariant problems
 - 6.3.2 equivariant confidence sets
 - 6.3.3 invariant tests*
 - 6.4 problems
- chapter 7: large sample theory
 - 7.1 convergence concepts
 - 7.1.1 deterministic convergence
 - 7.1.2 stochastic convergence
 - 7.1.3 the delta method
 - 7.2 sample quantiles
 - 7.2.1 a single quantile
 - 7.2.2 several quantiles
 - 7.2.3 linear binations of quantiles'
 - 7.3 large sample estimation
 - 7.3.1 some principles of large sample estimation
 - 7.3.2 maximum likelihood estimators
 - 7.3.3 mles in exponential families
 - 7.3.4 examples of inconsistent mles
 - 7.3.5 asymptotic normality of mles
 - 7.3.6 asymptotic properties of m-estimators'
 - 7.4 large sample properties of posterior distributions
 - 7.4.1 consistency of posterior distributions
 - 7.4.2 asymptotic normality of posterior distributions
 - 7.4.3 laplace approximations to posterior distributions*

7.4.4 asymptotic agreement of predictive distributions

7.5 large sample tests

7.5.1 likelihood ratio tests

7.5.2 chi-squared goodness of fit tests

7.6 problems

chapter 8: hierarchical models

8.1 introduction

8.1.1 general hierarchical models

8.1.2 partial exchangeability'

8.1.3 examples of the representation theorem'

8.2 normal linear models

8.2.1 one-way anova

8.2.2 two-way mixed model anova'

8.2.3 hypothesis testing

8.3 nonnormal models'

8.3.1 poisson process data

8.3.2 bernoulli process data

8.4 empirical bayes analysis*

8.4.1 naive empirical bayes

8.4.2 adjusted empirical bayes

8.4.3 unequal variance case

8.5 successive substitution sampling

8.5.1 the general algorithm

8.5.2 normal hierarchical models

8.5.3 nonnormal models

8.6 mixtures of models

8.6.1 general mixture models

8.6.2 outliers

8.6.3 bayesian robustness

8.7 problems

chapter 9: sequential analysis

9.1 sequential decision problems

9.2 the sequential probability ratio test

9.3 interval estimation*

9.4 the relevance of stopping rules

9.5 problems

appendix a: measure and integration theory

a.1 overview

a.1.1 definitions

a.1.2 measurable functions

a.1.3 integration

a.1.4 absolute continuity

a.2 measures

a.3 measurable functions

a.4 integration

a.5 product spaces

a.6 absolute continuity

a.7 problems

appendix b: probability theory

- b.1 overview
 - b.i.1 mathematical probability
 - b.1.2 conditioning
 - b.1.3 limit theorems
 - b.2 mathematical probability
 - b.2.1 random quantities and distributions
 - b.2.2 some useful inequalities
 - b.3 conditioning
 - b.3.1 conditional expectations
 - b.3.2 borel spaces'
 - b.3.3 conditional densities
 - b.3.4 conditional independence
 - b.3.5 the law of total probability
 - b.4 limit theorems
 - b.4.1 convergence in distribution and in probability
 - b.4.2 characteristic functions
 - b.5 stochastic processes
 - b.5.1 introduction
 - b.5.2 martingales
 - b.5.3 markov chains*
 - b.5.4 general stochastic processes
 - b.6 subjective probability
 - b.7 simulation*
 - b.8 problems
- appendix c: mathematical theorems not proven here
- c.1 real analysis
 - c.2 plex analysis
 - c.3 functional analysis
- appendix d: summary of distributions
- d.1 univariate continuous distributions
 - d.2 univariate discrete distributions
 - d.3 multivariate distributions
- references
- notation and abbreviation index
- name index
- subject index

《统计理论》

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