<<数理统计学导论>>

图书基本信息

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内容概要

这本经典教材保持着一贯的风格，清晰地阐述基本理论，并且为了更好地让读者理解数理统计，还提供了一些重要的背景材料。
内容覆盖估计和测试方面的古典统计推断方法，并深入介绍了充分性和测试理论，包括一致最佳检验和似然率。
书中含有大量实例和练习，便于读者理解和巩固所学知识。

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作者简介

作者：（美国）霍格（Robert V.Hogg） （美国）Joseoh W.McKean （美国）Allen T.Craig 霍格（Robert V.Hogg），艾奥瓦大学统计与精算科学系教授，自1948年开始任教于艾奥瓦大学，在此从事教学和管理工作50多年，并帮助筹建了统计与精算科学系。
他曾担任美国统计协会（ASA）主席，获得过包括美国数学协会杰出教育奖在内的多项教学奖。
Joseph W.McKean，西密歇根大学统计系教授，ASA会士。
他在线性、非线性、混合模型的稳健非参数处理方面已发表多篇论文，主要讲授统计学、概率论、统计方法、非参数理论等课程。
Allen T.Craig，艾奥瓦大学教授，已于1970年退休。
他曾担任美国数理统计学会（IMS）第一任秘书长，发起并参与了本书的撰写工作。

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书籍目录

章节摘录

版权页： 插图： 1.4.27.Each bag in a large box contains 25 tulip bulbs.It is known that 60% of the bags contain bulbs for 5 red and 20 yellow tulips,while the remaining 40% of the bags contain bulbs for 15 red and 10 yellow tulips.A bag is selected at random and a bulb taken at random from this bag is planted. (a)What is the probability that it will be a yellow tulip? (b)Given that it is yellow,what is the conditional probability it comes from a bag that contained 5 red and 20 yellow bulbs? 1.4.28.A bowl contains 10 chips numbered 1,2,…,10,respectively.Five chips are drawn at random,one at a time,and without replacement.What is the probability that two even-numbered chips are drawn and they occur on even-numbered draws? 1.4.29.A person bets 1 dollar to b dollars that he can draw two cards from an ordinary deck of cards without replacement and that they will be of the same suit.Find b so that the bet is fair.1.4.30(Monte Hall Problem).Suppose there are three curtains.Behind one curtain there is a nice prize,while behind the other two there are worthless prizes.A contestant selects one curtain at random,and then Monte Hall opens one of the other two curtains to reveal a worthless prize.Hall then expresses the willingness to trade the curtain that the contestant has chosen for the other curtain that has not been opened.Should the contestant switch curtains or stick with the one that she has?To answer the question,determine the probability that she wins the prize if she switches. 1.4.31.A French nobleman,Chevalier de M é er é ,had asked a famous mathematician,Pascal,to explain why the following two probabilities were different(the difference had been noted from playing the game many times):(1)at least one six in four independent casts of a six-sided die;(2)at least a pair of sixes in 24 independent casts of a pair of dice.From proportions it seemed to de M é r é that the probabilities should be the same.Compute the probabilities of(1)and(2). 1.4.32.Hunters A and B shoot at a target;the probabilities of hitting the target are P1 and P2,respectively.Assuming independence,can P1 and P2 be selected so that P(zero hits)= P(one hit)= P(two hits)? 1.4.33.At the beginning of a study of individuals,15% were classified as heavy smokers,30% were classified as light smokers,and 55% were classified as nonsmokers.In the five-year study,it was determined that the death rates of the heavy and light smokers were five and three times that of the nonsmokers,respectively.A randomly selected participant died over the five-year period: calculate the probability that the participant was a nonsmoker. 1.4.34.A chemist wishes to detect an impurity in a certain compound that she is making.There is a test that detects an impurity with probability 0.90;however,this test indicates that an impurity is there when it is not about 5% of the time.The chemist produces compounds with the impurity about 20% of the time.A compound is selected at random from the chemist's output.The test indicates that an impurity is present.What is the conditional probability that the compound actually has the impurity? 1.5 Random Variables The reader perceives that a sample space C may be tedious to describe if the elements of C are not numbers.We now discuss how we may formulate a rule,or a set of rules,by which the elements c of C may be represented by numbers.We begin the discussion with a very simple example.Let the random experiment be the toss of a coin and let the sample space associated with the experiment be C={H,T},where H and T represent heads and tails,respectively.Let X be a function such that X(T)=0 and X(H)=1.Thus X is a real-valued function defined on the sample space C which takes us from the sample space C to a space of real numbers D={0,1}.We now formulate the definition of a random variable and its space.

编辑推荐

名人推荐

“该书写作风格极其清晰，就更高等内容的应用而言，我没有任何质疑。
书中内容表述专业而现代，假如我有机会再次讲授数理统计学，我会毫不犹豫使用它，同时推荐给我的同事们。
”——Walter Freiberger，布朗大学

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