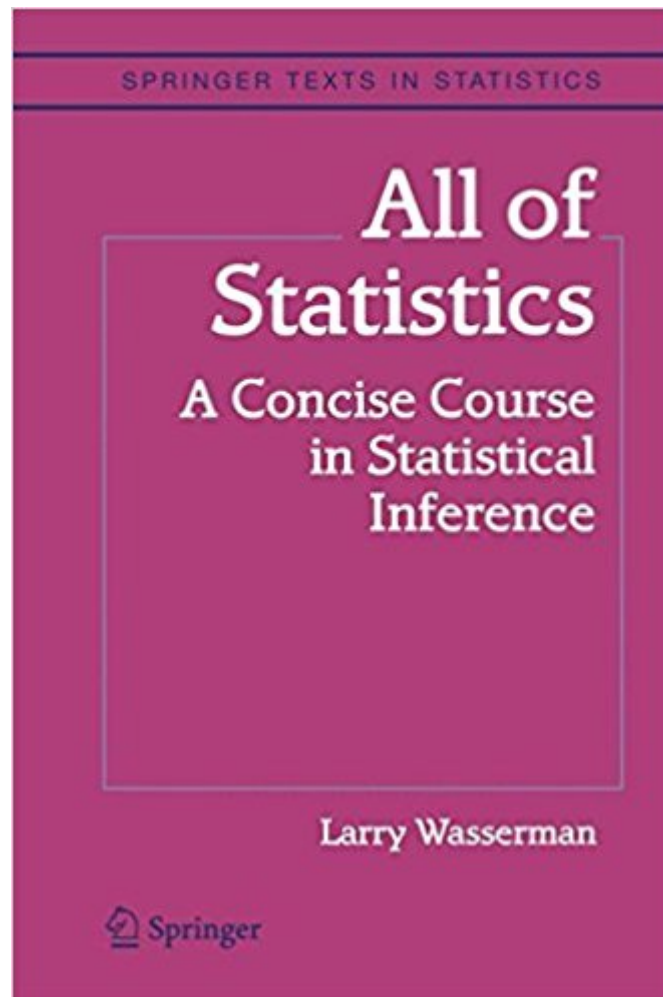# All Of Statistics: A Concise Course In Statistical Inference (Springer Texts In Statistics)

Synopsis

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 nonparametric curve estimation, bootstrapping, and clasÂ- sification, 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 analyzing data. For some time, statistics research was conÂ- ducted in statistics departments while data mining and machine learning reÂ- search was conducted in computer science departments. Statisticians thought that computer scientists were reinventing the wheel. Computer scientists thought that statistical theory didn't apply to their problems. Things are changing. Statisticians now recognize that computer scientists are making novel contributions while computer scientists now recognize the generality of statistical theory and methodology. Clever data mining algoÂ- rithms are more scalable than statisticians ever thought possible. Formal staÂ- tistical theory is more pervasive than computer scientists had realized.

Book Information

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Customer Reviews

This book is essentially a summary of the major theoretical topics in statistics, at an introductory level. The focus is on theory, not on data analysis or modeling, but there are more connections to data analysis and modeling than is typical among books on the same topics. The main flaw in this book is not that it does anything poorly, but rather, that it omits a lot.The book is very balanced in its coverage of different topics, its discussion of the frequentist vs. Bayesian paradigm, etc. It mentions parametric and nonparametric inference, including hypothesis testing, point estimation, Bayesian inference, decision theory, regression, and even two different approaches to causal inference. The book also paints a fairly whole picture of how the different topics relate to each other and fit into a unified theoretical framework. Another huge strength of this book is that it always omits unnecessary technical details, including only streamlined discussions highlighting essential points.The main weakness of this book is that certain topics are only brushed upon and not adequately explained. The first two chapters are deep enough for students to get a more or less complete understanding of the important ideas (assuming they do the exercises). But, for example, the 4th chapter covering inequalities is simply a collection of equations and formulas: the text explains how to use them, but not where they come from or what their intuitive interpretation is. This problem arises throughout the book but it is most evident in chapter 4. I want to remark, however, that this problem is widespread in statistics textbooks, and this book is still less lacking in this respect than is common among typical texts.I'm not sure this book makes the best textbook.

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