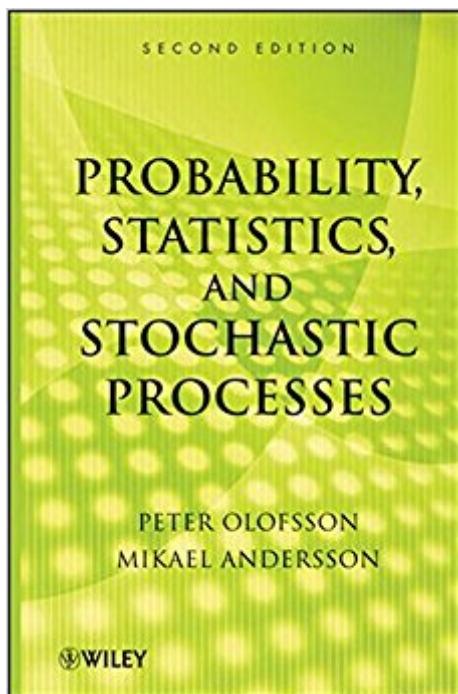


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# Probability, Statistics, And Stochastic Processes



## Synopsis

Praise for the First Edition ". . . an excellent textbook . . . well organized and neatly written."

According to Mathematical Reviews ". . . amazingly interesting . . ." According to Technometrics Thoroughly updated to showcase the interrelationships between probability, statistics, and stochastic processes, Probability, Statistics, and Stochastic Processes, Second Edition prepares readers to collect, analyze, and characterize data in their chosen fields. Beginning with three chapters that develop probability theory and introduce the axioms of probability, random variables, and joint distributions, the book goes on to present limit theorems and simulation. The authors combine a rigorous, calculus-based development of theory with an intuitive approach that appeals to readers' sense of reason and logic. Including more than 400 examples that help illustrate concepts and theory, the Second Edition features new material on statistical inference and a wealth of newly added topics, including: Consistency of point estimators Large sample theory Bootstrap simulation Multiple hypothesis testing Fisher's exact test and Kolmogorov-Smirnov test Martingales, renewal processes, and Brownian motion One-way analysis of variance and the general linear model Extensively class-tested to ensure an accessible presentation, Probability, Statistics, and Stochastic Processes, Second Edition is an excellent book for courses on probability and statistics at the upper-undergraduate level. The book is also an ideal resource for scientists and engineers in the fields of statistics, mathematics, industrial management, and engineering.

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## Customer Reviews

"This is an excellent textbook that covers the three subjects of its title at an undergraduate upper level in one single volume... well organized and neatly written... " ("Mathematical Reviews," 2006a)"Professor Olofsson has clearly set himself a difficult task...I applaud him for the attempt. PSSP is worth considering for a one-term course..." ("The American Statistician", August 2006)"This book is an amazingly interesting and not-boring textbook..." ("Technometrics", February 2006)"This is an excellent textbook that covers the three subjects of its title at an undergraduate upper level in one single volume...well organized and neatly written..." ("Mathematical Reviews", 2006a)

Praise for the First Edition ". . . an excellent textbook . . . well organized and neatly written." *Mathematical Reviews* ". . . amazingly interesting . . ." *Technometrics* Thoroughly updated to showcase the interrelationships between probability, statistics, and stochastic processes, *Probability, Statistics, and Stochastic Processes*, Second Edition prepares readers to collect, analyze, and characterize data in their chosen fields. Beginning with three chapters that develop probability theory and introduce the axioms of probability, random variables, and joint distributions, the book goes on to present limit theorems and simulation. The authors combine a rigorous, calculus-based development of theory with an intuitive approach that appeals to readers' sense of reason and logic. Including more than 400 examples that help illustrate concepts and theory, the Second Edition features new material on statistical inference and a wealth of newly added topics, including: Consistency of point estimators Large sample theory Bootstrap simulation Multiple hypothesis testing Fisher's exact test and Kolmogorov-Smirnov test Martingales, renewal processes, and Brownian motion One-way analysis of variance and the general linear model Extensively class-tested to ensure an accessible presentation, *Probability, Statistics, and Stochastic Processes*, Second Edition is an excellent book for courses on probability and statistics at the upper-undergraduate level. The book is also an ideal resource for scientists and engineers in the fields of statistics, mathematics, industrial management, and engineering.

I wanted to expand my basic understanding of statistics and therefore was very pleased to have purchased Peter Olofsson's book. I found the development of the book logical with topics covered in detail and with explanations that helped the reader gain an in-depth understanding of each topic. I particularly appreciated the comprehensive treatment of conditional expectation, joint distributions and the introduction to stochastic processes. I now regularly use the book as a reference.

This is a well-written book. The examples used are easy to follow, and the range of topics it covers

is exactly what I was looking for.

I've been self-teaching this subject using this book. I would like to share a few points with potential readers:  
Up:1. Well-organised and concise, fun to read This book assumes that readers have good calculus foundation, few step by step solutions could be found to most of the examples. The solutions may seem so obvious to mathematicians like the writers, but not to readers with flimsy calculus. Therefore this book serves better as an upper level(Junior/1st year PG) probability textbook.  
2. Excellent problems after each chapter Problems are well categorised, interesting and challenging. They help readers forge deeper understanding of the theories. Please try them all to get the most out of this book!  
Down  
1. No companion solution manual Though problems after each chapter are too good to miss, no solution manual is available out there.  
2. Index of the book needs to be updated  
All in all, this book is a five star reading for me.

I found Peter Olofsson's text to be a highly intelligent treatment of undergraduate probability. If you are looking for a text that is more than just a permutation of the material presented in Hogg and Craig, then look at this text. If, on the other hand you have a need for a text that is written in the disjointed picture book style of the textbook mills, then I recommend you do not choose this text. I personally find great pleasure in reading a text written by a single dedicated author with a clear mindset of how to treat probability. In reading this text you will clearly see Olofsson's thought process develop the continuity we should all expect from a math text. The exercises in the text cover problems from the very basic to quite challenging. Most of the problems are more than just a rote drill, and actually allow one to learn on several levels. Again, this is the sign of a devoted author with a clear insight into the subject, as opposed to a textbook mill. The prose is engaging to those who know how to read, not just to those who know how to read mathematics. The author makes reference to a variety of cultural icons that keeps the prose from becoming overly formalized, and this is refreshing in a math text. As good as the exercises and writing are, the truly outstanding nature of this text is the topics covered. Olofsson has laid out a path of discovery that will allow the active and engaged reader to progress from no knowledge of probability up to being able to understand and use basic techniques of branching processes. I know of no other text that does this, let alone does it well.

Very well written, one of the better book out there. Of course, it is not for people who just want to do basic applied probability (draw balls from urns) or basic stat(put the numbers into formula, ta-da!) it is

for junior/senior/first year grad level prob&stat book. Rigorous enough to handle the inevitable mathematical complexity, intuitive stimulant, overall, not bad at all. As a mathematician, and it is not my field, I can say that I learned a lot from this book while teaching a course on this subject.

I used this book to teach a junior level intro course on probability and statistics, and overall I am very satisfied with it. The book strikes a nice balance between mathematical rigor on the one hand and a wide range of concrete examples on the other. I found the presentation and arrangement of material to be much more natural than the other text I've used (Hogg and Tanis).

Basically I am not a mathematician (just an AI practitioner) but I have strong math background. I started self-study 2nd edition of this book in order to learn how to build probabilistic models for various phenomena that I encounter in the field during day to day work (Machine learning oriented problems, simulation problems, learning networks, Queuing problems,...). Almost half way through the book (with understanding all the content along with solving almost every single problem at the end of each chapter) I still cannot apply this strong tool!! I began to ponder why is that, why this book gave me false self confidence. Then I found the reason. The problem with the book is it had strong tendency to reduce the probability into analysis by overemphasizing analytical methods. For instance it teaches various discrete / continuous distributions but in the examples and also problems at the end of the chapter you will not see any case where it teaches you how to apply these distribution. For me learning a distribution is \*NOT\* learning the formula and calculating the value! Most of the problems of the book are straightforward calculations and in some cases just trivial extension of examples that author provided in the text. In 80% of the cases it doesn't teach you how to use distributions and conditional probability but it teaches you how to calculate various functions of random variables, variance, standard deviation, ... . Statistics and probability is NOT mere calculating these values, its way more than that!! I can use few lines of R code to do all these calculations for me. Only when you can apply a single distribution along with conditional probability to model a problem then you can say you know this subject. This no computer can do. I now start re-read all these concepts from the best book ever written in probability: The Feller book. Now I believe I am understanding the subject and see the contrast.

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