Statistical Modeling and Computation

Dirk P. Kroese, Joshua C.C. Chan
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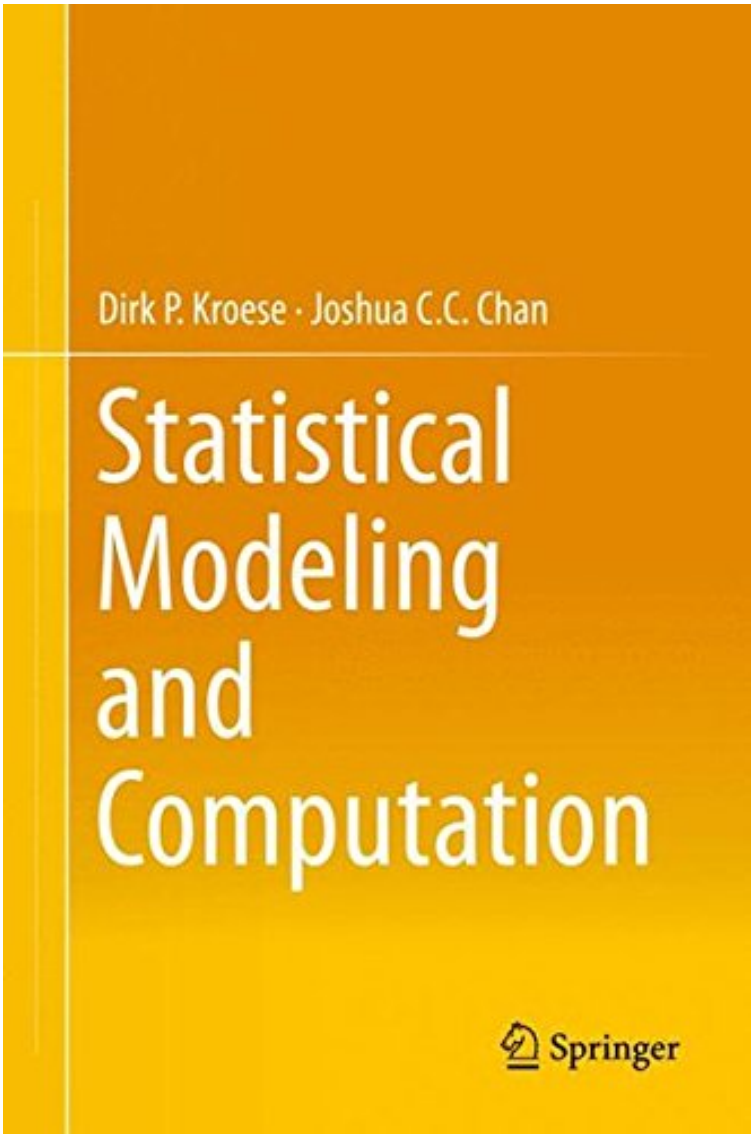

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Dirk P. Kroese, Joshua C.C. Chan : Statistical Modeling and Computation before purchasing it in order to gage whether or not it would be worth my time, and all praised Statistical Modeling and Computation:

7 of 7 people found the following review helpful. Excellent for teaching introductory second year probability and statisticsBy Zdravko BotevI taught a core statistics course at a major Australian university using the material from this book.The explanations are detailed and clear and follow the classical expositions of teaching probability, following by statistics.The students liked the numerous practice problems and illustrations. A big plus of this book is that is provides hands-onexercises using Matlab without assuming any knowledge of Matlab (the appendix provides a

primer!).The authors also provide solutions to the exercises at the end of each chapter--- these solutions are quite detailedand instructive from a pedagogical point of view. My students no longer nag me to provide solutions as there are more problems in this book than they can reasonably attempt to solve during the semester.Overall one of the best books I have used for teaching.

This textbook on statistical modeling and statistical inference will assist advanced undergraduate and graduate students. Statistical Modeling and Computation provides a unique introduction to modern Statistics from both classical and Bayesian perspectives. It also offers an integrated treatment of Mathematical Statistics and modern statistical computation, emphasizing statistical modeling, computational techniques, and applications. Each of the three parts will cover topics essential to university courses. Part I covers the fundamentals of probability theory. In Part II, the authors introduce a wide variety of classical models that include, among others, linear regression and ANOVA models. In Part III, the authors address the statistical analysis and computation of various advanced models, such as generalized linear, state-space and Gaussian models. Particular attention is paid to fast Monte Carlo techniques for Bayesian inference on these models. Throughout the book the authors include a large number of illustrative examples and solved problems. The book also features a section with solutions, an appendix that serves as a MATLAB primer, and a mathematical supplement.

Fundamentals of probability and modeling are presented in a rigorous language and the transition to more advanced chapters is almost smooth. Explanations are precise, both verbally and mathematically. Throughout the book, cross-references are made so that the reader can find further or related topics in other parts of the book. Readers interested in mathematical rigor will find this book rewarding. Another strength of the book lies in the wealth and variety of exercises at the end of each chapter. The exercises (some with complete solutions) range from mathematical proofs and model building to programming. Solutions for select problems are presented at the end of the book. [This] book is outstanding in terms of coverage of topics, rigorous language and integration of computation. (Abdolvahab Khademi, Journal of Statistical Software, August 2015) From the Back CoverThis textbook on statistical modeling and statistical inference will assist advanced undergraduate and graduate students. Statistical Modeling and Computationprovides a unique introduction to modern Statistics from both classical and Bayesian perspectives. It also offersan integrated treatment of Mathematical Statistics and modern statistical computation, emphasizing statistical modeling, computational techniques, and applications. Each of the three parts will cover topics essential to university courses. Part I covers the fundamentals of probability theory. In Part II, the authors introduce a wide variety of classical models that include, among others, linear regression and ANOVA models. In Part III,the authorsaddress the statistical analysis and computation of various advanced models, such as generalized linear, state-space and Gaussian models. Particular attention is paid to fast Monte Carlo techniques for Bayesian inference on these models. Throughout the book the authorsinclude a large number of illustrative examples and solved problems. The book also features a section with solutions, an appendix that serves as a MATLAB primer, and a mathematical supplement.About the AuthorDirk P. Kroese is a Professor of Mathematics and Statistics at The University of Queensland. He is fascinated by anything that deals with the theory and application of randomness. He has written over 90 publications in a wide range of areas in probability and statistics, including three influential books: The Cross-Entropy Method and Simulation and the Monte Carlo Method, Second Edition, both with Reuven Rubinstein, and Handbook of Monte Carlo Methods, with Thomas Taimre and Zdravko Botev. Joshua Chan is a Senior Lecturer at the Research School of Economics, Australian National University. His current research focuses on detecting and modeling time-varying structures in macroeconomic data using simulation-based methods. He has published widely in leading international journals such as Journal of Econometrics, Journal of Business and Economic Statistics, and Journal of Computational and Graphical Statistics.