Introduction to Probability (Chapman & Hall/CRC Texts in Statistical Science)

Developed from celebrated Harvard statistics lectures, Introduction to Probability provides essential language and tools for understanding statistics, randomness, and uncertainty. The book explores a wide variety of applications and examples, ranging from coincidences and paradoxes to Google PageRank and Markov chain Monte Carlo (MCMC). Additional application areas explored include genetics, medicine, computer science, and information theory. The print book version includes a code that provides free access to an eBook version.

The authors present the material in an accessible style and motivate concepts using real-world examples. Throughout, they use stories to uncover connections between the fundamental distributions in statistics and conditioning to reduce complicated problems to manageable pieces.

The book includes many intuitive explanations, diagrams, and practice problems. Each chapter ends with a section showing how to perform relevant simulations and calculations in R, a free statistical software environment.

Joseph K. Blitzstein

, PhD, professor of the practice in statistics, Department of Statistics, Harvard University, Cambridge, Massachusetts, USA

"... a welcome addition ... The authors-wisely, in this reviewer's opinion-take special care to maintain a conversational tone to prioritize accessibility instead. The result is a very readable text with concepts introduced with a degree of clarity that should suit the beginner extremely well. ... An additional feature is the extensive use, and related instruction, of the R programming language for computations, simulations, approximations, and so forth. ... beginning students opting for easy-paced learning will find the book highly suited to the purpose ... An e-book version of the book is available upon creating an account with the website vitalsource.com and redeeming a code provided with every print copy."
-International Statistical Review, 83, 2015

"A few months ago I reviewed Blitzstein and Hwang's excellent modern

Introduction to Probability

, which is chock full of features to ease the student's path. ... Blitzstein and Hwang try everything possible to help the student understand the material. ... Blitzstein and Hwang have problems with applications to just about anything you can think of ... What it comes down to, in my opinion, is that Blitzstein and Hwang is an excellent book for a wide variety of audiences trying to learn probability."
-Peter Rabinovitch, MAA Reviews, October 2015

"

Introduction to Probability

is a very nice text for a calculus-based first course in probability. ... The exercises are truly impressive. There are about 600 and some of them are very interesting and new to me. ... The website has R code, the previously mentioned solutions, and many videos from the authors teaching the class. The videos are entertaining as well as informative. ... In addition to the standard material for such a course, there are also very nicely done chapters on inequalities and limit theorems, Markov chains, and Markov chain Monte Carlo. ... this is an excellent text and deserves serious consideration."
-MAA Reviews, August 2015

"Unique in its conceptual approach and its incorporation of simulations in R, this book is a welcome addition to the vast collection of probability textbooks currently available. ... The topics covered in the book follow a fairly traditional order ... The companion website for this textbook, stat110.net, offers supplemental materials to the textbook. There are more than 600 exercises in the textbook, and 250 of these exercises have detailed solutions available on the website. The website offers additional handouts and practice problems and exams, as well as over 30 video lectures available on YouTube or iTunes U. The book is also available as an electronic book. Overall,

Introduction to Probability

offers a fresh perspective on the traditional probability textbook. Its sections on simulation in R, emphasis on common student mistakes and misconceptions, story-like presentation, and illuminating visualizations provide a comprehensive, well-written textbook that I would consider using in my own probability course."
-The American Statistician, August 2015

"Full of real-life motivations and applications, this is a leisurely paced, exercise-laden text, which is also suitable for self-study. Each chapter ends with a Recap section, another section with R code snippets suggesting how to perform calculations and simulations with that program, and finally an Exercises section with an unusually large amount of exercises. Supplementary material is provided ... The book includes a redemption code providing access to an e-book version of the text ..."
-Zentralblatt MATH 1300

Other Books

An Introduction to Financial Mathematics, Introduction to Financial Mathematics: Option Valuation, Second Edition is a well-rounded primer to the mathematics and models used in the valuation of financial derivatives. The book consists of fifteen chapters, the first ten of which develop option valuation techniques in discrete time, the last five describing the theory in continuous time. The first half of the textbook develops basic finance and probability. The author then treats the binomial model as the primary example of discrete-time option valuation. The final part of the textbook examines the Black-Scholes model. The book is written to provide a straightforward account of the principles of option pricing and examines these principles in detail using standard discrete and stochastic calculus models. Additionally, the second edition has new exercises and examples, and includes many tables and graphs generated by over 30 MS Excel VBA modules available on the

author's webpage https://home.gwu.edu/~hdj/.
□ □ □ □ □ . The book consists of fifteen chapters, the first ten of which develop option valuation techniques in discrete time, the last five describing the theory in continuous time."