DESCRIPTION

Improve Your Probability of Mastering This Topic

This book takes an innovative approach to calculus-based probability theory, considering it within a framework for creating models of random phenomena. The author focuses on the synthesis of stochastic models concurrent with the development of distribution theory while also introducing the reader to basic statistical inference. In this way, the major stochastic processes are blended with coverage of probability laws, random variables, and distribution theory, equipping the reader to be a true problem solver and critical thinker.

Deliberately conversational in tone, Probability is written for students in junior- or senior-level probability courses majoring in mathematics, statistics, computer science, or engineering. The book offers a lucid and mathematically sound introduction to how probability is used to model random behavior in the natural world. The text contains the following chapters:

* Modeling
* Sets and Functions
* Probability Laws I: Building on the Axioms
* Probability Laws II: Results of Conditioning
* Random Variables and Stochastic Processes
* Discrete Random Variables and Applications in Stochastic Processes

* Continuous Random Variables and Applications in Stochastic Processes

* Covariance and Correlation Among Random Variables

Included exercises cover a wealth of additional concepts, such as conditional independence, Simpson's paradox, acceptance sampling, geometric probability, simulation, exponential families of distributions, Jensen's inequality, and many non-standard probability distributions.

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**ABOUT THE AUTHOR**

**GREGORY K. MILLER, PHD,** is Associate Professor of Statistics in the Department of Mathematics and Statistics at Stephen F. Austin State University in Nacogdoches, Texas. He is a coauthor, with U. Narayan Bhat, of *Elements of Applied Stochastic Processes*, Third Edition (Wiley).

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**FEATURES**

- Presents a seamless introduction to the basic elements of probability together with applications from stochastic processes

- Places a primary focus on modeling so that students learn why various distributions and processes available are useful as probabilistic models of physical phenomena

- Briefly discusses methods of point estimation seamlessly throughout, rather than placing the topic in a separate chapter

- Prepares students for courses in statistical inference, stochastic processes, mathematical statistics, or other discipline-specific courses that require knowledge of probability and elementary stochastic processes

- Includes 395 exercises comprised of 916 separate parts that ask a total of over 1000 different questions across eight chapters; 90 additional conceptual questions finish out the chapters

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