



METADATA

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Abstract

The book is intended for use in teaching the basic theory of probability and developing some of its fundamental applications in statistics and computer science. It is primarily aimed at first-year (but not exclusively) students, mainly in departments of Computer Science, Mathematics, and Statistics, but due to the broad range of material it covers, it is also suitable for departments of Engineering Schools. Included are chapters on the basic concepts of events and randomness, the axiomatic foundation of probability, the main distributions and their common applications (with an emphasis on computer science), discrete and continuous random variables, the law of large numbers,

and the central limit theorem. The book is ideal for teaching in departments that include a smaller number of mathematical background courses, dedicating about one course to Single Variable Calculus and related topics. There are dozens of such departments nationwide. The primary goal of the book is for students to understand the fundamental difference—as a way of thinking—of probability theory from other mathematics courses they have taken. Consequently, they should be able to grasp the concepts of randomness and quantitative probability both in their strictly mathematical dimension and in their proper use in basic applications of statistics and computer science.

