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Autore	Ibe Oliver C (Oliver Chukwudi), <1947->
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Binomial) Distribution; 4.6 Hypergeometric Distribution; 4.7 Poisson Distribution; 4.8 Exponential Distribution; 4.9 Erlang Distribution; 4.10 Uniform Distribution; 4.11 Normal Distribution; 4.12 The Hazard Function; 4.13 Chapter Summary; 4.14 Problems; Chapter 5. Multiple Random Variables; 5.1 Introduction; 5.2 Joint CDFs of Bivariate Random Variables; 5.3 Discrete Random Variables; 5.4 Continuous Random Variables; 5.5 Determining Probabilities from a Joint CDF
5.6 Conditional Distributions
5.7 Covariance and Correlation Coefficient; 5.8 Many Random Variables; 5.9 Multinomial Distributions; 5.10 Chapter Summary; 5.11 Problems; Chapter 6. Functions of Random Variables; 6.1 Introduction; 6.2 Functions of One Random Variable; 6.3 Expectation of a Function of One Random Variable; 6.4 Sums of Independent Random Variables; 6.5 Minimum of Two Independent Random Variables; 6.6 Maximum of Two Independent Random Variables; 6.7 Comparison of the Interconnection Models; 6.8 Two Functions of Two Random Variables; 6.9 Laws of Large Numbers
6.10 The Central Limit Theorem
6.11 Order Statistics; 6.12 Chapter Summary; 6.13 Problems; Chapter 7. Transform Methods; 7.1 Introduction; 7.2 The Characteristic Function; 7.3 The s-Transform; 7.4 The z-Transform; 7.5 Random Sum of Random Variables; 7.6 Chapter Summary; 7.7 Problems; Chapter 8. Introduction to Random Processes; 8.1 Introduction; 8.2 Classification of Random Processes; 8.3 Characterizing a Random Process; 8.4 Crosscorrelation and Crosscovariance Functions; 8.5 Stationary Random Processes; 8.6 Ergodic Random Processes; 8.7 Power Spectral Density
8.8 Discrete-Time Random Processes

Sommario/riassunto

This book is based on the premise that engineers use probability as a modeling tool, and that probability can be applied to the solution of engineering problems. Engineers and students studying probability and random processes also need to analyze data, and thus need some knowledge of statistics. This book is designed to provide students with a thorough grounding in probability and stochastic processes, demonstrate their applicability to real-world problems, and introduce the basics of statistics. The book's clear writing style and homework problems make it ideal for the classroom or for self-
