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Nota di contenuto	Probability -- Discrete Random Variables -- Continuous Random Variables -- Markov Chains -- Brownian Motion -- Benford's Law -- Data for Project 12 -- Partial Solutions to Projects -- References.
Sommario/riassunto	This undergraduate textbook presents an inquiry-based learning course in stochastic models and computing designed to serve as a first course in probability. Its modular structure complements a traditional lecture format, introducing new topics chapter by chapter with accompanying projects for group collaboration. The text addresses probability axioms leading to Bayes' theorem, discrete and continuous random variables, Markov chains, and Brownian motion, as well as applications including randomized algorithms, randomized surveys, Benford's law, and Monte Carlo methods. Adopting a unique application-driven approach to better study probability in action, the book emphasizes data, simulation, and games to strengthen reader insight and intuition while proving theorems. Additionally, the text incorporates codes and exercises in the Julia programming language to further promote a hands-on focus in modelling. Students should have prior knowledge of single variable calculus. Giray Ökten received his PhD from Claremont Graduate University. He has held academic positions at University of Alaska Fairbanks, Ball State University, and Florida State University. He received a Fulbright U.S. Scholar award in

2015. His research interests include Monte Carlo methods and computational finance. .