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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	I. Univariate Random Variables -- Discrete Random Variables -- Properties of Expectation -- Properties of Characteristic Functions -- Basic Distributions -- Absolutely Continuous Random Variables -- Basic Distributions -- Distribution Functions -- Computer Generation of Random Variables -- Exercises -- II. Multivariate Random Variables -- Joint Random Variables -- Conditional Expectation -- Orthogonal Projections -- Joint Normal Distribution -- Multi-Dimensional Distribution Functions -- Exercises -- III. Limit Laws -- Law of Large Numbers -- Weak Convergence -- Bochner’s Theorem -- Extremes -- Extremal Distributions -- Large Deviations -- Exercises -- IV. Markov Chains—Passage Phenomena -- First Notions and Results -- Limiting Diffusions -- Branching Chains -- Queueing Chains -- Exercises -- V. Markov Chains—Stationary Distributions and Steady State -- Stationary Distributions -- Geometric Ergodicity -- Examples -- Exercises -- VI. Markov Jump Processes -- Pure Jump Processes -- Poisson Process -- Birth and Death Process -- Exercises -- VII. Ergodic Theory with an Application to Fractals -- Ergodic Theorems -- Subadditive Ergodic Theorem -- Products of Random Matrices -- Oseledec’s Theorem -- Fractals -- Bibliographical Comments -- Exercises -- References -- Solutions (Sections I–V).
Sommario/riassunto	These notes were written as a result of my having taught a "nonmeasure theoretic" course in probability and stochastic processes a few times at the Weizmann Institute in Israel. I have tried to follow two

principles. The first is to prove things "probabilistically" whenever possible without recourse to other branches of mathematics and in a notation that is as "probabilistic" as possible. Thus, for example, the asymptotics of pn for large n, where P is a stochastic matrix, is developed in Section V by using passage probabilities and hitting times rather than, say, pulling in Perron- Frobenius theory or spectral analysis. Similarly in Section II the joint normal distribution is studied through conditional expectation rather than quadratic forms. The second principle I have tried to follow is to only prove results in their simple forms and to try to eliminate any minor technical com- putations from proofs, so as to expose the most important steps. Steps in proofs or derivations that involve algebra or basic calculus are not shown; only steps involving, say, the use of independence or a dominated convergence argument or an assumptjon in a theorem are displayed. For example, in proving inversion formulas for characteristic functions I omit steps involving evaluation of basic trigonometric integrals and display details only where use is made of Fubini's Theorem or the Dominated Convergence Theorem.