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	ISBN	981-19-2008-7
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	Descrizione fisica	1 online resource (352 pages)
	Collana	Indian Statistical Institute Series, , 2523-3122
	Disciplina	332.028553
	Soggetti	Statistics
		Social sciences - Mathematics
		Stochastic analysis
		Machine learning
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		Statistics in Business, Management, Economics, Finance, Insurance
		Mathematics in Business, Economics and Finance
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		Statistical Software
	Lingua di pubblicazione	Inglese
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	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Part I. Numerical Methods -- 1. Preliminaries -- 2. Solving a System of Linear Equations -- 3. Solving Non-Linear Equations -- 4. Numerical Integration -- 5. Numerical Differentiation -- 6. Numerical Methods for PDE -- 7. Optimization -- Part II. Simulation Methods -- 8. Monte-Carlo Methods -- 9. Lattice Models -- 10. Simulating Brownian Motion -- 11. Variance Reduction -- 12. Bayesian Computation with Stan -- 13. Resampling -- Part III. Statistical Methods -- 14. Descriptive Methods -- 15. Inferential Statistics -- 16. Statistical Risk Analysis -- 17. Multivariate Analysis -- 18. Univariate Time Series -- 19. Multivariate Time Series -- 20. High Frequency Data -- 21. Supervised Learning -- 22. Unsupervised Learning -- Appendix -- A. Basics of Mathematical Finance -- B. Introduction to R -- C. Extreme Value Theory in Finance -- Bibliography. .
	Sommario/riassunto	This book prepares students to execute the quantitative and

computational needs of the finance industry. The quantitative methods are explained in detail with examples from real financial problems like option pricing, risk management, portfolio selection, etc. Codes are provided in R programming language to execute the methods. Tables and figures, often with real data, illustrate the codes. References to related work are intended to aid the reader to pursue areas of specific interest in further detail. The comprehensive background with economic, statistical, mathematical, and computational theory strengthens the understanding. The coverage is broad, and linkages between different sections are explained. The primary audience is graduate students, while it should also be accessible to advanced undergraduates. Practitioners working in the finance industry will also benefit.