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Nota di contenuto	Chapter 1 Introduction -- Chapter 2 Why use Python? -- Part I Parameter Estimation -- Chapter 3 Sample Based Methods -- Chapter 4 Risk Factors Models -- Chapter 5 Black Litterman Models -- Chapter 7 Convex Risk Measures -- Chapter 8 Return-Risk Trade-Off

Optimization -- Chapter 9 Real Features Constraints -- Chapter 10 Risk Parity Optimization -- Chapter 11 Robust Optimization -- Part III Machine Learning Portfolio Optimization -- Chapter 12 Hierarchical Clustering Portfolios -- Chapter 13 Graph Theory Based Portfolios -- Part IV Backtesting -- Chapter 14 Generation of Synthetic Data -- Chapter 15 Backtesting Process -- Part V Appendix -- Chapter A Linear Algebra -- Chapter B Convex Optimization -- Chapter C Mixed Integer Programming.

Sommario/riassunto

This book is an innovative and comprehensive guide that provides readers with the knowledge about the latest trends, models and algorithms used to build investment portfolios and the practical skills necessary to apply them in their own investment strategies. It integrates latest advanced quantitative techniques into portfolio optimization, raises questions about which alternatives to modern portfolio theory exists and how they can be applied to improve the performance of multi-asset portfolios. It provides answers and solutions by offering practical tools and code samples that enable readers to implement advanced portfolio optimization techniques and make informed investment decisions. Portfolio Optimization goes beyond traditional portfolio theory (Quadratic Programming), incorporating last advances in convex optimization techniques and cutting-edge machine learning algorithms. It extensively addresses risk management and uncertainty quantification, teaching readers how to measure and minimize various forms of risk in their portfolios. This book goes beyond traditional back testing methodologies based on historical data for investment portfolios, incorporating tools to create synthetic datasets and robust methodologies to identify better investment strategies considering real aspects like transaction costs. The author provides several methodologies for estimating the input parameters of investment portfolio optimization models, from classical statistics to more advanced models, such as graph-based estimators and Bayesian estimators, provide a deep understanding of advanced convex optimization models and machine learning algorithms for building investment portfolios and the necessary tools to design the back testing of investment portfolios using several methodologies based on historical and synthetic datasets that allow readers identify the better investment strategies.