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Nota di contenuto	Handbook of Computational Econometrics; Contents; List of Contributors; Preface; 1 Econometric software; 1.1 Introduction; 1.2 The nature of econometric software; 1.2.1 The characteristics of early econometric software; 1.2.2 The expansive development of econometric software; 1.2.3 Econometric computing and the microcomputer; 1.3 The existing characteristics of econometric software; 1.3.1 Software characteristics: broadening and deepening; 1.3.2 Software characteristics: interface development; 1.3.3 Directives versus constructive commands; 1.3.4 Econometric software design implications 1.4 ConclusionAcknowledgments; References; 2 The accuracy of

econometric software; 2.1 Introduction; 2.2 Inaccurate econometric results; 2.2.1 Inaccurate simulation results; 2.2.2 Inaccurate GARCH results; 2.2.3 Inaccurate VAR results; 2.3 Entry-level tests; 2.4 Intermediate-level tests; 2.4.1 NIST Statistical Reference Datasets; 2.4.2 Statistical distributions; 2.4.3 Random numbers; 2.5 Conclusions; Acknowledgments; References; 3 Heuristic optimization methods in econometrics; 3.1 Traditional numerical versus heuristic optimization methods; 3.1.1 Optimization in econometrics; 3.1.2 Optimization heuristics; 3.1.3 An incomplete collection of applications of optimization heuristics in econometrics; 3.1.4 Structure and instructions for use of the chapter; 3.2 Heuristic optimization; 3.2.1 Basic concepts; 3.2.2 Trajectory methods; 3.2.3 Population-based methods; 3.2.4 Hybrid metaheuristics; 3.3 Stochastics of the solution; 3.3.1 Optimization as stochastic mapping; 3.3.2 Convergence of heuristics; 3.3.3 Convergence of optimization-based estimators; 3.4 General guidelines for the use of optimization heuristics; 3.4.1 Implementation; 3.4.2 Presentation of results; 3.5 Selected applications; 3.5.1 Model selection in VAR models; 3.5.2 High breakdown point estimation; 3.6 Conclusions; Acknowledgments; References; 4 Algorithms for minimax and expected value optimization; 4.1 Introduction; 4.2 An interior point algorithm; 4.2.1 Subgradient of  $(x)$  and basic iteration; 4.2.2 Primal-dual step size selection; 4.2.3 Choice of  $c$  and  $\epsilon$ ; 4.3 Global optimization of polynomial minimax problems; 4.3.1 The algorithm; 4.4 Expected value optimization; 4.4.1 An algorithm for expected value optimization; 4.5 Evaluation framework for minimax robust policies and expected value optimization; Acknowledgments; References; 5 Nonparametric estimation; 5.1 Introduction; 5.1.1 Comments on software; 5.2 Density estimation; 5.2.1 Some illustrations; 5.3 Nonparametric regression; 5.3.1 An illustration; 5.3.2 Multiple predictors; 5.3.3 Some illustrations; 5.3.4 Estimating conditional associations; 5.3.5 An illustration; 5.4 Nonparametric inferential techniques; 5.4.1 Some motivating examples; 5.4.2 A bootstrap-t method; 5.4.3 The percentile bootstrap method; 5.4.4 Simple ordinary least squares regression; 5.4.5 Regression with multiple predictors

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## Sommario/riassunto

Handbook of Computational Econometrics examines the state of the art of computational econometrics and provides exemplary studies dealing with computational issues arising from a wide spectrum of econometric fields including such topics as bootstrapping, the evaluation of econometric software, and algorithms for control, optimization, and estimation. Each topic is fully introduced before proceeding to a more in-depth examination of the relevant methodologies and valuable illustrations. This book: Provides self-contained treatments of issues in computational econometrics

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