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Nota di contenuto	Contents; 1. Our Steps on the Bickel Way; 1.1 Introduction; 1.2 Doing Well at a Point and Beyond; 1.3 Robustness Transformations Oracle-free Inference and Stable Parameters; 1.4 Distribution Free Tests Higher Order Expansions and Challenging Projects; 1.5 From Adaptive Estimation to Semiparametric Models; 1.6 Hidden Markov Models; 1.7 Non- and Semi-parametric Testing; 1.8 The Road to Real Life; References; Bickel's Publication; Part I. Semiparametric Modeling; 2. Semiparametric Models: A Review of Progress since BKRW (1993); 2.1 Introduction; 2.2 Missing Data Models 2.3 Testing and Profile Likelihood Theory2.4 Semiparametric Mixture Model Theory; 2.5 Rates of Convergence via Empirical Process Methods; 2.6 Bayes Methods and Theory; 2.7 Model Selection Methods; 2.8 Empirical Likelihood; 2.9 Transformation and Frailty Models; 2.10 Semiparametric Regression Models; 2.11 Extensions to Non-i.i.d. Data; 2.12 Critiques and Possible Alternative Theories; References; 3. Efficient Estimator for Time Series; 3.1 Introduction; 3.2 Characterization of Efficient Estimators; 3.3 Autoregression Parameter; 3.4 Innovation Distribution; 3.5 Innovation Density

3.6 Conditional Expectation; 3.7 Stationary Distribution; 3.8 Stationary Density; 3.9 Transition Density; References; 4. On the Efficiency of Estimation for a Single-index Model; 4.1 Introduction; 4.2 Estimation via Outer Product of Gradients; 4.3 Global Minimization Estimation Methods; 4.4 Sliced Inverse Regression Method; 4.5 Asymptotic Distributions; 4.6 Comparisons in Some Special Cases; 4.7 Proofs of the Theorems; References; 5. Estimating Function Based Cross-Validation; 5.1 Introduction; 5.2 Estimating Function Based Cross-Validation; 5.3 Some Examples; 5.4 General Finite Sample Result; 5.5 Appendix; References; Part II. Nonparametric Methods; 6. Powerful Choices: Tuning Parameter Selection Based on Power; 6.1 Introduction: Local Testing and Asymptotic Power; 6.2 Maximizing Asymptotic Power; 6.3 Examples; 6.4 Appendix; References; 7. Nonparametric Assessment of Atypicality; 7.1 Introduction; 7.2 Estimating Atypicality; 7.3 Theoretical Properties; 7.4 Numerical Properties; 7.5 Outline of Proof of Theorem 7.1; References; 8. Selective Review on Wavelets in Statistics; 8.1 Introduction; 8.2 Wavelets; 8.3 Nonparametric Regression; 8.4 Inverse Problems; 8.5 Change-points; 8.6 Local Self-similarity and Non-stationary Stochastic Process; 8.7 Beyond Wavelets; References; 9. Model Diagnostics via Martingale Transforms: A Brief Review; 9.1 Introduction; 9.2 Lack-of-fit Tests; 9.3 Censoring; 9.4 Khamaladze Transform or Bootstrap; References; Part III. Statistical Learning and Bootstrap; 10. Boosting Algorithms: with an Application to Bootstrapping Multivariate Time Series; 10.1 Introduction; 10.2 Boosting and Functional Gradient Descent; 10.3 L2-Boosting for High-dimensional Multivariate Regression; 10.4 L2-Boosting for Multivariate Linear Time Series; References; 11. Bootstrap Methods: A Review

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Sommario/riassunto

During the last two decades, many areas of statistical inference have experienced phenomenal growth. This book presents a timely analysis and overview of some of these new developments and a contemporary outlook on the various frontiers of statistics. Eminent leaders in the field have contributed 16 review articles and 6 research articles covering areas including semi-parametric models, data analytical nonparametric methods, statistical learning, network tomography, longitudinal data analysis, financial econometrics, time series, bootstrap and other re-sampling methodologies, statistical comput

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