

1. Record Nr.	UNINA9910484167603321
Titolo	Festschrift in honor of R. Dennis Cook : fifty years of contribution to statistical science // Efsthia Bura, Bing Li, editors
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-69009-1
Descrizione fisica	1 online resource (200 pages)
Disciplina	519.5
Soggetti	Statistics Mathematical statistics Estadística matemàtica Homenatges Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Foreword -- A Tribute to Professor R. Dennis Cook -- Contents -- Using Mutual Information to Measure the Predictive Power of Principal Components -- 1 Introduction -- 2 Overview of Previous Results -- 3 Conditional Mutual Information -- 3.1 Under the Linear Model -- 3.2 Beyond the Linear Regression Model -- 3.3 Beyond the Normal Distribution -- 4 Discussion -- References -- A Robust Estimation Approach for Mean-Shift and Variance-Inflation Outliers -- 1 Introduction -- 2 Our Proposal and Some Background -- 2.1 A Generalized Setting -- 2.2 Some Technical Background -- 2.3 Our Proposal -- 2.4 Graphical Diagnostics -- 3 Simulation Study -- 4 Real-Data Examples -- 5 Final Remarks -- References -- Estimating Sufficient Dimension Reduction Spaces by Invariant Linear Operators -- 1 Introduction -- 2 Invariant Linear Operators -- 3 Invariant Linear Operator and Its Eigenvectors -- 4 Some Important Members of $T(Y X)$ -- 4.1 Sliced Average Variance Estimation -- 4.2 SIR-II -- 4.3 Contour Regression -- 4.4 Directional Regression -- 5 Two Estimation Methods Based on Invariant Operators -- 5.1 Iterative Invariant Transformations (IIT) -- 5.2 Nonparametrically Boosted Inverse Regression (NBIR) -- 6

Numerical Study -- 7 Concluding Remarks -- References -- Testing Model Utility for Single Index Models Under High Dimension -- 1 Introduction -- 2 Generalized SNR for Single Index Models -- 2.1 Notation -- 2.2 A Brief Review of the Sliced Inverse Regression (SIR) -- 2.3 Generalized Signal-to-Noise Ratio of Single Index Models -- 2.4 Global Testing for Single Index Models -- 3 The Optimal Test for Single Index Models -- 3.1 The Detection Boundary of Linear Regression -- 3.2 Single Index Models -- 3.3 Optimal Test for SIMa -- 3.4 Computationally Efficient Test -- 3.5 Practical Issues -- 4 Numerical Studies -- 5 Discussion -- Appendix: Proofs -- Assisting Lemmas. Proof of Theorems -- References -- Sliced Inverse Regression for Spatial Data -- 1 Introduction -- 2 SIR for iid Data -- 3 SIR for Time Series Data -- 4 SIR for Spatial Data -- 5 Performance Evaluation of SSIR -- 6 Discussion -- References -- Model-Based Inverse Regression and Its Applications -- 1 Introduction -- 1.1 Model-Based Inverse Reduction -- 1.2 Sufficient Reduction in Applications -- 2 Inverse Reduction for Multivariate Count Data -- 2.1 Multinomial Inverse Regression in Text Analysis -- 2.2 Predictive Learning in Metagenomics via Inverse Regression -- 2.3 Poisson Graphical Inverse Regression -- 3 Inverse Reduction and Its Dual -- 3.1 Reduction via Principal Coordinate Analysis -- 3.2 A Supervised Inverse Regression Model -- 4 Adaptive Independence Test via Inverse Regression -- 5 Cook's Contributions on Model-Based Sufficient Reduction -- References -- Sufficient Dimension Folding with Categorical Predictors -- 1 Introduction -- 2 Review on Sufficient Dimension Folding -- 3 Sufficient Dimension Folding with Categorical Predictors -- 4 Estimation Methods -- 4.1 Individual Direction Ensemble Method -- 4.2 Least Squares Folding Approach (LSFA) -- 4.3 Objective Function Optimization Method -- 5 Estimation of Structural Dimensions -- 6 Numerical Analysis -- 6.1 Simulation Studies -- 6.1.1 Part I (Continuous Y, Forward Model) -- 6.1.2 Part II (Discrete Y, Inverse Model) -- 6.2 Application -- 7 Discussion -- 8 Appendix -- 8.1 Proofs -- 8.2 Additional Simulation and Data Analysis -- Three Histograms for the Real Data -- The Bootstrap Confidence Interval Plots for Real Data -- References -- Sufficient Dimension Reduction Through Independence and Conditional Mean Independence Measures -- 1 Introduction -- 2 Estimating $SY|X$ Through ρ -Distance Covariance -- 2.1 ρ -Distance Covariance -- 2.2 Estimation of the Central Space. 3 Estimating $SE(Y|X)$ Through ρ -Martingale Difference Divergence -- 3.1 ρ -Martingale Difference Divergence -- 3.2 Estimation of the Central Mean Space -- 4 Simulation Studies -- 4.1 Model Setup -- 4.2 Comparisons of Estimating the Central Space -- 4.3 Comparisons of Estimating the Central Mean Space -- 5 Analysis of the Iris Data -- 6 Conclusion -- Appendix -- References -- Cook's Fisher Lectureship Revisited for Semi-supervised Data Reduction -- 1 Introduction -- 2 Dimension Reduction by Isotonic Models -- 2.1 Construction of Isotonic Model -- 2.2 Maximum Likelihood Estimation of ρ -- 3 Numerical Examples -- 4 Real Data Example -- 5 Discussion -- References.
