

| | |
|--|-----|
| PREFACE | v |
| 1. ALGORITHMIC APPROACHES TO STATISTICS | |
| An introduction to support vector machines Bernhard Schölkopf | 3 |
| Bagging, subbagging and bragging for improving some prediction algorithms Peter Bühlmann | 19 |
| Data compression by geometric quantization Nkem-Amin Khumbah and Edward J. Wegman | 35 |
| 2. FUNCTIONAL DATA ANALYSIS | |
| Functional data analysis in evolutionary biology Nancy E. Heckman | 49 |
| Functional nonparametric statistics: a double infinite dimensional framework F. Ferraty and Philippe Vieu | 61 |
| 3. NONPARAMETRIC MODEL BUILDING | |
| Nonparametric models for ANOVA and ANCOVA: a review Michael G. Akritas and Edgar Brunner | 79 |
| Isotonic additive interaction models Ilya Gluhovsky | 93 |
| A nonparametric alternative to analysis of covariance Arne Bathke and Edgar Brunner | 109 |
| 4. GOODNESS OF FIT | |
| Assessing structural relationships between distributions—a quantile process approach based on Mallows distance G. Freitag, Axel Munk, and M. Vogt | 123 |
| Almost sure representations in survival analysis under censoring and truncation: applications to goodness-of-fit tests R. Cao, W. González Manteiga, and C. Iglesias Pérez | 139 |

5. HIGH-DIMENSIONAL DATA AND VISUALIZATION

Data depth: center-outward ordering of multivariate data and nonparametric multivariate statistics

Regina Y. Liu 155

Visual exploration of data through their graph representations

George Michailidis 169

6. NONPARAMETRIC REGRESSION

Inference for nonsmooth regression curves and surfaces using kernel-based methods

Irene Gijbels 183

Nonparametric smoothing methods for a class of non-standard curve estimation problems

Oliver Linton and Enno Mammen 203

Weighted local linear approach to censored nonparametric regression

Zongwu Cai 217

7. TOPICS IN NONPARAMETRICS

Adaptive quantile regression

Sara van de Geer 235

Set estimation: an overview and some recent developments

Antonio Cuevas and Alberto Rodríguez-Casal 251

Nonparametric methods for heavy tailed vector data: a survey with applications from finance and hydrology

Mark M. Meerschaert and Hans-Peter Scheffler 265

8. NONPARAMETRICS IN FINANCE

Nonparametric methods in continuous-time finance: a selective review

Zongwu Cai and Yongmiao Hong 283

Nonparametric estimation in a stochastic volatility model

Jürgen Franke, Wolfgang Härdle, and Jens-Peter Kreiss 303

Dynamic nonparametric filtering with application to volatility estimation

Ming-Yen Cheng, Jianqing Fan, and Vladimir Spokoiny 315

A normalizing and variance-stabilizing transformation for financial time series

Dimitris N. Politis 335

9. BIOINFORMATICS AND BIOSTATISTICS

Biostochastics and nonparametrics: oranges and apples?

Pranab Kumar Sen 351

Some issues concerning length-biased sampling in survival analysis

Masoud Asgharian and David B. Wolfson 367

Covariate centering and scaling in varying-coefficient regression with application to longitudinal growth studies

Colin O. Wu, Kai F. Yu, and Vivian W.S. Yuan 377

Directed peeling and covering of patient rules

Michael LeBlanc, James Moon, and John Crowley 393

10. RESAMPLING AND SUBSAMPLING

Statistical analysis of survival models with Bayesian bootstrap

Jaeyong Lee and Yongdai Kim 411

On optimal variance estimation under different spatial subsampling schemes

Daniel J. Nordman and Soumendra N. Lahiri 421

Locally stationary processes and the local block bootstrap

Arif Dowla, Efstathios Paparoditis, and Dimitris N. Politis 437

11. TIME SERIES AND STOCHASTIC PROCESSES

Spectral analysis and a class of nonstationary processes

Murray Rosenblatt 447

Curve estimation for locally stationary time series models

Rainer Dahlhaus 451

Assessing spatial isotropy

Michael Sherman, Yongtao Guan, and James A. Calvin 467

12. WAVELET AND MULTIREOLUTION METHODS

Automatic landmark registration of 1D curves

Jérémie Bigot

479

Stochastic multiresolution models for turbulence

B. Whitcher, J.B. Weiss, D.W. Nychka, and T.J. Hoar

497

LIST OF CONTRIBUTORS

511