1. Record Nr. UNINA9911018945003321

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Titolo	Introduction to nonparametric regression / / Kunio Takezawa
Pubbl/distr/stampa	Hoboken, N.J., : Wiley-Interscience, c2006
ISBN	9786610286980 9781280286988 1280286989 9780470362617 0470362618 9780471771456 0471771457 9780471771449 0471771449
Descrizione fisica	1 online resource (566 p.)
Collana	Wiley series in probability and statistics
Disciplina	519.5/36
Soggetti	Regression analysis Nonparametric statistics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 529-531) and index.
Nota di contenuto	INTRODUCTION TO NONPARAMETRIC REGRESSION; CONTENTS; Preface; Acknowledgments; 1 Exordium; 1.1 Introduction; 1.2 Are the moving average and Fourier series sufficiently useful?; 1.3 Is a histogram or normal distribution sufficiently powerful?; 1.4 Is interpolation sufficiently powerful?; 1.5 Should we use a descriptive equation?; 1.6 Parametric regression and nonparametric regression; 2 Smoothing for data with an equispaced predictor; 2.1 Introduction; 2.2 Moving average and binomial filter; 2.3 Hat matrix; 2.4 Local linear regression; 2.5 Smoothing spline 2.6 Analysis on eigenvalue of hat matrix2.7 Examples of S-Plus object; References; Problems; 3 Nonparametric regression for one-dimensional predictor; 3.1 Introduction; 3.2 Trade-off between bias and variance; 3.3 Index to select beneficial regression equations; 3.4 Nadaraya-Watson estimator; 3.5 Local polynomial regression; 3.6 Natural spline

and smoothing spline; 3.7 LOESS; 3.8 Supersmoother; 3.9 LOWESS; 3.10 Examples of S-Plus object; References; Problems; 4 Multidimensional smoothing; 4.1 Introduction; 4.2 Local polynomial regression for multidimensional predictor
4.3 Thin plate smoothing splines4.4 LOESS and LOWESS with plural predictors; 4.5 Kriging; 4.6 Additive model; 4.7 ACE; 4.8 Projection pursuit regression; 4.9 Examples of S-Plus object; References; Problems; 5 Nonparametric regression with predictors represented as distributions; 5.1 Introduction; 5.2 Use of distributions as predictors; 5.3 Nonparametric DVR method; 5.4 Form of nonparametric regression with predictors represented as distributions; 5.5 Examples of S-Plus object; References; Problems; 6 Smoothing of histograms and nonparametric probability density functions; 6.1 Introduction
6.2 Histogram6.3 Smoothing a histogram; 6.4 Nonparametnc probability density function; 6.5 Examples of S-Plus object; References; Problems; 7 Pattern recognition; 7.1 Introduction; 7.2 Bayes' decision rule; 7.3 Linear discriminant rule and quadratic discriminant rule; 7.4 Classification using nonparametric probability density function; 7.5 Logistic regression; 7.6 Neural networks; 7.7 Tree-based model; 7.8 k-nearest-neighbor classifier; 7.9 Nonparametric regression based on the least squares; 7.10 Transformation of feature vectors; 7.11 Examples of S-Plus object; References; Problems
Appendix A: Creation and applications of B-spline basesA.1 Introduction; A.2 Method to create B-spline basis; A.3 Natural spline created by B-spline; A.4 Application to smoothing spline; A.5 Examples of S-Plus object; References; Appendix B: R objects; B.1 Introduction; B. 2 Transformation of S-Plus objects in Chapter 2; B.3 Transformation of S-Plus objects in Chapter 3; B.4 Transformation of S-Plus objects in Chapter 4; B.5 Transformation of S-Plus objects in Chapter 5; B.6 Transformation of S-Plus objects in Chapter 6; B.7 Transformation of S-Plus objects in Chapter 7
B.8 Transformation of S-Plus objects in Appendix A

Sommario/riassunto

An easy-to-grasp introduction to nonparametric regressionThis book's straightforward, step-by-step approach provides an excellent introduction to the field for novices of nonparametric regression. Introduction to Nonparametric Regression clearly explains the basic concepts underlying nonparametric regression and features:* Thorough explanations of various techniques, which avoid complex mathematics and excessive abstract theory to help readers intuitively grasp the value of nonparametric regression methods* Statistical techniques accompanied by clear numerical examples that fur