Book Reviews \ Reseñas

MODERN MULTIVARIATE STATISTICAL TECHNIQUES REGRESSION, CLASSIFICATION, AND MANIFOLD LEARNING

Alan Julian Izenman (2008)
Series: Springer Texts in Statistics   ISBN: 978-0-387-78188-4
XX+760   59,95€

 The book describes how to manage data for maintaining and querying large databases.
It provides a discussion on the commonly arising problems in linear and nonlinear data-mining and machine-learning techniques, advances in computation and data storage, management of large data sets , data mining, machine learning and the challenges of the Human Genome Project..
The techniques presented goes form the common models of multivariate methods (multiple regression, principal components, canonical variables, linear discriminant analysis, factor analysis, clustering, multidimensional scaling, and correspondence analysis) up to density estimation, projection pursuit, multivariate reduced-rank regression, nonlinear manifold learning, random forests, support vector machines, etc.
I recommend this book for advanced students in statistics and related profiles as , computer science, artificial intelligence, cognitive sciences, bio-informatics, and the involved different branches of engineering.
More than 60 data sets are used for working out as examples. More than 200 exercises are presented in the book.

J. A. Rouen
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STATISTICAL MODELS AND METHODS FOR BIOMEDICAL AND TECHNICAL SYSTEMS

Filia Vonta, Kikhil Nikulin, Nikolaos Limnios ad Catherine Huber-Carol, Editors. (2008)
Birkhãuser   ISBN: 978-0-8176-4464-2 e ISBN: 978-0-8176-4619-6
XXXV+592   USD 139.00

This book presents a selection of the contributions presented at the conference BIOSTAT2006 held in Limasol, Cyprus, which was attended by more than 100 participants. It is divided into 9 pasts.
Part 1. Cox Models, Analysis and Extension contains the contributions dealing with recent developments in survival analysis (extended Cox and accelerated models in reliability, multivariate data on continuous time asymptotic properties of Cox proportional hazards regressions, diagnosing of frailty distributions in proportional models.
Part 2. Reliability Theory-Degradation Models clusters contributions on, estimating relationships, use of Semi Markov and Poisson processes for population degradation in l biological models. Some papers propose softwares and numerical experiments are performed for supporting the usefulness of some of the proposals.
Part III is devoted to the Inferential Analysis and the contribution in this part deal with the theory and application of estimation procedures (sampling for survival analysis, resampling, minimum distance estimators, nested plans for sequential quality control) and testing (specialized parametric, non parametric models, chi-squared related Brain-Shapiro tests).
Part IV has contributions on the analysis of censored data. Their results contribute to the areas of sampling-based chi square tests, semi parametric regression and likelihood under censoring.

Part V's subject is quality of life. The papers may be qualified as 'conceptualizing' more than 'developers' of new results. They deal with sequential analysis and mixing Rasch models for clinical trials, discussing the philosophical and practical aspects of constructing questionnaires for quality of life research, the architecture of the notion developing,

Part VI is devoted to Inference for Processes (stochastic of course). Goodness of fit procedure for different processes (as ergodic diffusion, Poisson, self exciting point processes) calculus of moment and estimation of functionals, transition distribution identification for Markov models.

Part VII is concerned with designs (of experiments of course). Adaptive deigns for sequential clinical survival and discrete variance minimizers optimal designs are discussed.

Part VIII is theoretically colorful. The themes of the papers deal with cross validation, measures of information-divergence and entropy-divergence for model selection, survival regression (linear hazard),

Pat IX contain s only a paper where the challenges that Genomics poses to statisticians both in modeling and inferring.

In the text 37 tables are developed. Most of them are of practical interest for the specialists investigating in the field of Biomedicine.

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BIOSTATISTIQUE

Alain-Jacques Valleron (2007)

Flammarion Medecine-Sciences Collection: De la biologie à la clinique

ISBN-10: 2257110722   ISBN-13: 978-2-257-11072-5

XV+239   39.00€

This text, written in French, offers a mastery of methods most often used in medicine, biology, and is of interest for , mathematicians as well as for all the readers interested in researching in Biomedicine. The approach minimizes mathematical formulations yet gives complete explanations of all important concepts. Every new concept is systematically developed through completely worked-out examples from current medical research problems. Computer outputs are used to illustrate concepts when appropriate.

A.S. Akiva
Nosharkart Women College

STATISTICAL LEARNING FROM A REGRESSION PERSPECTIVE
R. A. Berk (2008)
Springer Series in Statistics   ISBN 978-0-387-77500-5
XVI+370   69.95€

The readers of this book will obtain the knowledge of the dialectic of the regression modeling problems arising in the study of predictor –response. A large percent of the contents is devoted to discuss how to understand phenomena through regression equation fitting. This discussions include references on the available computer programs supported in R and how they support the practical day-to-day work. Further readings are recommended. .
I recommend it for practitioners and professors have the responsibility of teaching on the subject, the book gives an interesting perspective for dealing with regression

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STUDYING HUMAN POPULATIONS
N. T. Longford (2008)
Springer   ISBN 978-0-387-98753
XVI-472   62,95€

This book presents the roots of different methods of wide use in applications. The discussed models and approaches to the analysis of data are of wide use in the social sciences. The readers should not have a good mathematical basis, but some experience on applications. The subjects, though not exhaustive, contains the discussion of problems of common interest for behavioural statistics. The book presents a philosophical sketch of how to fix the objectives of the research, to obtain the data, the information processing and the ways of generalizing from the data using a probabilistic point of view. They discuss the effect of the manipulations of the responses in producing incompleteness and imperfectness in the measurement of the variables. Sampling procedures are discussed at large and Bayes ideas are presented. Experimental designs are presented including the clinical trials and longitudinal studies. GLIM, Time Series, Meta analysis are largely studied. It is illustrating the discussions on the effect, in inferences, of the incorrect use of statistical too

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SOFTWARE FOR DATA ANALYSIS. PROGRAMMING WITH R
J. M. Chambers (2008)
Springer   ISBN 978-0-387-75935-7
XVI+310   69.95€

R is nowadays the language used in programming for statistics. Most of the thesis and practical programming are implemented in this language. This is a valuable book for every body involved in data analysis, not only statisticians. Being written by the father of S programming language, as R is S based, the development of the presentation as well as the advises are good for fitting the minds of the students within the roots of the art of programming with R. The formulations of the programming problems go from simple issues to complex procedures.. The author gives several important clues. It is pointed out the importance of R for statistics due to its possibilities for merging theoretical thinking with easy programming.

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J. Scheneweiss
BROUQUE Consultors
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PROBABILITY MODELS FOR DNA SEQUENCE EVOLUTION
R. Durrett (2008)
Springer   ISBN 978-0-387-78168
XVIII+440   69.95€

This book may be considered as a monograph on probability modeling DNA sequence evolution. It also can be considered as reference book fro researchers in the theme. Different considerations make of Probability the natural approach for data analysis of these problems. The book introduces the particularities of the modeling for special an important families of problems arising in the study of DNA. Different phenomena are described and modeled. The combinatoric nature of the problems is described in detail It presents different useful models and defines some procedures for establishing theoretical testing models for evaluating if the evolution is non neutral.
My evaluation is a that it is good book for mathematicians, biologists, physics, engineers and other scientists involved with the study of DNA problems.

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Chou- la Kain
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