Scott, David W.
Multivariate density estimation. Theory, practice, and visualization. 2nd ed. (English)
Zbl 1311.62004
Wiley Series in Probability and Statistics. Hoboken, NJ: John Wiley & Sons (ISBN 978-0-471-69755-8/hbk; 978-1-118-57557-4/ebook). xviii, 350 p. (2015).

Publisher's description: Clarifies modern data analysis through nonparametric density estimation for a complete working knowledge of the theory and methods

Featuring a thoroughly revised presentation, the book maintains an intuitive approach to the underlying methodology and supporting theory of density estimation. Including new material and updated research in each chapter, the second edition presents additional clarification of theoretical opportunities, new algorithms, and up-to-date coverage of the unique challenges presented in the field of data analysis.

The new edition focuses on the various density estimation techniques and methods that can be used in the field of big data. Defining optimal nonparametric estimators, the second edition demonstrates the density estimation tools to use when dealing with various multivariate structures in univariate, bivariate, trivariate, and quadrivariate data analysis. Continuing to illustrate the major concepts in the context of the classical histogram, the book also features:

- over 150 updated figures to clarify theoretical results and to show analyses of real data sets
- an updated presentation of graphic visualization using computer software such as R
- a clear discussion of selections of important research during the past decade, including mixture estimation, robust parametric modeling algorithms, and clustering
- more than 130 problems to help readers reinforce the main concepts and ideas presented
- boxed theorems and results allowing easy identification of crucial ideas
- figures in color in the digital versions of the book
- a website with related data sets

The book is an ideal reference for theoretical and applied statisticians, practicing engineers, as well as readers interested in the theoretical aspects of nonparametric estimation and the application of these methods to multivariate data. The second edition is also useful as a textbook for introductory courses in kernel statistics, smoothing, advanced computational statistics, and general forms of statistical distributions.

For the first edition see [Zbl 0850.62006].

MSC:

62-02	Research exposition (monographs, survey articles) pertaining to statistics
62G07	Density estimation
62H05	Characterization and structure theory for multivariate probability distributions; copulas

Cited in **59** Documents

Software:

R

Full Text: DOI