Nonparametric Statistics with Applications to Science and Engineering
Paul Kvam, Brani Vidakovic

A thorough and definitive book that fully addresses traditional and modern-day topics of nonparametric statistics

This book presents a practical approach to nonparametric statistical analysis and provides comprehensive coverage of both established and newly developed methods. With the use of MATLAB, the authors present information on theorems and rank tests in an applied fashion, with an emphasis on modern methods in regression and curve fitting, bootstrap confidence intervals, splines, wavelets, empirical likelihood, and goodness-of-fit testing.

*Nonparametric Statistics with Applications to Science and Engineering* begins with succinct coverage of basic results for order statistics, methods of categorical data analysis, nonparametric regression, and curve fitting methods. The authors then focus on nonparametric procedures that are becoming more relevant to engineering researchers and practitioners. The important fundamental materials needed to effectively learn and apply the discussed methods are also provided throughout the book.

Complete with exercise sets, chapter reviews, and a related Web site that features downloadable MATLAB applications, this book is an essential textbook for graduate courses in engineering and the physical sciences and also serves as a valuable reference for researchers who seek a more comprehensive understanding of modern nonparametric statistical methods.
ABOUT THE AUTHOR

Paul H. Kvam, PhD, is Professor of Industrial and Systems Engineering at Georgia Institute of Technology. His research interests include nonparametric estimation, statistical reliability with applications to engineering, and analysis of complex and dependent systems. He has written over fifty refereed articles and was named a Fellow of the American Statistical Association in 2006.

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FEATURES

• The use of MATLAB subroutines, ideal for engineers and students/readers in the physical sciences, differentiates this book from the plethora of competition that typically employs Minitab, S-Plus, SAS, or R.

• The emphasis on modern topics such as goodness of fit, curve fitting, splines, robust analysis, empirical likelihood, Kaplan Meier estimation, machine learning and wavelets, is first-and-foremost. This said, however, traditional topics are presented when and where necessary.

• The book is written at a beginning graduate level; it will appeal to both ends of the spectrum where there is natural overlap (i.e. advanced upper undergraduates and beginning Ph. D. candidates). The versatility of the level and the emphasis on engineering and science applications are redeeming qualities.

• This book is written as a textbook, complete with exercise sets and chapter pedagogy such as chapter reviews, plentiful examples, and multiple running heads.

• The presentation is crisp and to-the-point. The authors take careful effort to word-craft the text.

SERIES

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