

S. Dudoit, University of California, Berkeley, CA, USA (Ed)

Selected Works of Terry Speed

The purpose of this volume is to provide an overview of Terry Speed's contributions to statistics and beyond. Each of the fifteen chapters concerns a particular area of research and consists of a commentary by a subject-matter expert and selection of representative papers. The chapters, organized more or less chronologically in terms of Terry's career, encompass a wide variety of mathematical and statistical domains, along with their application to biology and medicine. Accordingly, earlier chapters tend to be more theoretical, covering some algebra and probability theory, while later chapters concern more recent work in genetics and genomics. The chapters also span continents and generations, as they present research done over four decades, while crisscrossing the globe. The commentaries provide insight into Terry's contributions to a particular area of research, by summarizing his work and describing its historical and scientific context, motivation, and impact.

Features

► Collected papers by Terry Speed in one volume ► Contains a complete bibliography of Speed ► New commentary by important statisticians working today

Contents

Algebra.- Probability.- Sufficiency.- Analysis of Variance.- Cumulants.- Interaction Models.- Asymptotics and Coding Theory.- Applied Statistics and Exposition.- History and Teaching Statistics.- Genetic Recombination.- Molecular Evolution.- Statistical Genetics.- DNA Sequencing.- Biological Sequence Analysis.- Microarray Data Analysis.

Field of interest

Statistical Theory and Methods

Target groups

Research

Product category

Monograph

Available

2012. XXX, 665 p. 2 illus. in color. (Selected Works in Probability and Statistics) Hardcover

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► € 169,95 | £153.00

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N. Golyandina, St. Petersburg University, Russia;
A. Zhigljavsky, Cardiff University, UK

Singular Spectrum Analysis for Time Series

Singular spectrum analysis (SSA) is a technique of time series analysis and forecasting combining elements of classical time series analysis, multivariate statistics, multivariate geometry, dynamical systems and signal processing. SSA seeks to decompose the original series into a sum of a small number of interpretable components such as trend, oscillatory components and noise. It is based on the singular value decomposition of a specific matrix constructed upon the time series.

Features

► Presents the methodology of SSA ► Shows how to use SSA both safely and with maximum effect ► For professional statisticians, econometricians and specialists in any discipline ► For students taking courses on applied time series analysis

Contents

Introduction: Preliminaries.- SSA Methodology and the Structure of the Book.- SSA Topics Outside the Scope of this Book.- Common Symbols and Acronyms.- Basic SSA: The Main Algorithm.- Potential of Basic SSA.- Models of Time Series and SSA Objectives.- Choice of Parameters in Basic SSA.- Some Variations of Basic SSA.- SSA for Forecasting, interpolation, Filtration and Estimation: SSA Forecasting Algorithms.- LRR and Associated Characteristic Polynomials.- Recurrent Forecasting as Approximate Continuation.- Confidence Bounds for the Forecast.- Summary and Recommendations on Forecasting Parameters.- Case Study: 'Fortified Wine'.- Missing Value Imputation.- Subspace-Based Methods and Estimation of Signal Parameters.- SSA and Filters.

Field of interest

Statistical Theory and Methods

Target groups

Research

Product category

Brief

Due February 2013

2013. XVI, 111 p. 41 illus., 38 in color. (SpringerBriefs in Statistics) Softcover

► *€ (D) 42,75 | € (A) 43,95 | sFr 53,50

► € 39,95 | £35.99

ISBN 978-3-642-34912-6



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L. Lin, A. S. Hedayat, W. Wu

Statistical Tools for Measuring Agreement

Agreement assessment techniques are widely used in examining the acceptability of a new or generic process, methodology and/or formulation in areas of lab performance, instrument/assay validation or method comparisons, statistical process control, goodness-of-fit, and individual bioequivalence. Successful applications in these situations require a sound understanding of both the underlying theory and methodological advances in handling real-life problems. This book seeks to effectively blend theory and applications while presenting readers with many practical examples. For instance, in the medical device environment, it is important to know if the newly established lab can reproduce the instrument/assay results from the established but outdated lab. When there is a disagreement, it is important to differentiate the sources of disagreement.

Features

► Appeals to a broad range of statisticians, researchers, practitioners, and students in areas of biomedical devices, psychology, and medical research, in which agreement assessment are needed ► Considers un-scaled (absolute) and scaled (relative) agreement statistics for both continuous and categorical variables ► Many practical examples will be presented throughout the book in a wide variety of situations for continuous and categorical data

Contents

Introduction.- Continuous Data.- Categorical Data.- Sample Size and Power.- A Unified Model for Continuous and Categorical Data.- A Comparative Model for Continuous and Categorical Data.- Workshop.

Field of interest

Statistical Theory and Methods

Target groups

Research

Product category

Monograph

Available

2012. XVI, 161 p. 32 illus., 4 in color. Hardcover

► *€ (D) 74,85 | € (A) 76,95 | sFr 100,50

► € 69,95 | £62.99

ISBN 978-1-4614-0561-0



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G. Wills, SPSS, Inc., Naperville, IL, USA

Visualizing Time

Designing Graphical Representations for Statistical Data

Art, or Science? Which of these is the right way to think of the field of visualization? This is not an easy question to answer, even for those who have many years experience in making graphical depictions of data with a view to help people understand it and take action. In this book, Graham Wills bridges the gap between the art and the science of visually representing data. He does not simply give rules and advice, but bases these on general principles and provide a clear path between them. This book is concerned with the graphical representation of time data and is written to cover a range of different users. A visualization expert designing tools for displaying time will find it valuable, but so also should a financier assembling a report in a spreadsheet, or a medical researcher trying to display gene sequences using a commercial statistical package.

Features

- ▶ Contains over 100 figures, many in color
- ▶ All new text and material
- ▶ A go-to reference for how to visualize time

Contents

History.- Framework.- Designing Visualizations.- Types of Data.- Time as a Coordinate.- Coordinate Systems, Transformations, Faceting, and Axes.- Aesthetics.- Transformations.- Interactivity.- Topics in Time.- Gallery of Figures.

Field of interest

Statistical Theory and Methods

Target groups

Research

Product category

Monograph

Available

2012. XVI, 256 p. 157 illus., 149 in color. (Statistics and Computing) Hardcover

▶ *€ (D) 74,85 | € (A) 76,95 | sFr 100,50

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