

1. Record Nr.	UNINA9910437909203321
Titolo	Towards advanced data analysis by combining soft computing and statistics // Christian Borgelt ...[et al.] (eds.)
Pubbl/distr/stampa	Berlin ; ; New York, : Springer, c2013
ISBN	9783642302787 3642302785
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (X, 378 p.)
Collana	Studies in fuzziness and soft computing, , 1434-9922 ; ; 285
Altri autori (Persone)	BorgeltChristian
Disciplina	006.3
Soggetti	Mathematical statistics - Data processing Soft computing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and author index.
Nota di contenuto	From the Contents: Arithmetic and Distance-Based Approach to the Statistical Analysis of Imprecisely Valued Data -- Linear Regression Analysis for Interval-valued Data Based on Set Arithmetic: A Bootstrap Confidence Intervals for the Parameters of a Linear Regression Model with Fuzzy Random Variables -- On the Estimation of the Regression Model M for Interval Data -- Hybrid Least-Squares Regression Modelling Using Confidence -- Testing the Variability of Interval Data: An Application to Tidal Fluctuation.-Comparing the Medians of a Random Interval Defined by Means of Two Different L1 Metrics.-Comparing the Representativeness of the 1-norm Median for Likert and Free-response Fuzzy Scales.-Fuzzy Probability Distributions in Reliability Analysis, Fuzzy HPD-regions, and Fuzzy Predictive Distributions.
Sommario/riassunto	Soft computing, as an engineering science, and statistics, as a classical branch of mathematics, emphasize different aspects of data analysis. Soft computing focuses on obtaining working solutions quickly, accepting approximations and unconventional approaches. Its strength lies in its flexibility to create models that suit the needs arising in applications. In addition, it emphasizes the need for intuitive and interpretable models, which are tolerant to imprecision and uncertainty. Statistics is more rigorous and focuses on establishing objective

conclusions based on experimental data by analyzing the possible situations and their (relative) likelihood. It emphasizes the need for mathematical methods and tools to assess solutions and guarantee performance. Combining the two fields enhances the robustness and generalizability of data analysis methods, while preserving the flexibility to solve real-world problems efficiently and intuitively.
