

1. Record Nr.	UNINA9910484166503321
Titolo	Uncertainty Modelling in Data Science // edited by Sébastien Destercke, Thierry Denoeux, María Ángeles Gil, Przemyslaw Grzegorzewski, Olgierd Hryniewicz
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-319-97547-1
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (XI, 234 p. 22 illus.)
Collana	Advances in Intelligent Systems and Computing, , 2194-5357 ; ; 832
Disciplina	006.3
Soggetti	Computational intelligence Artificial intelligence Computational Intelligence Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. Imprecise statistical inference for accelerated life testing data: imprecision related to the log-rank test (Abdullah Ahmadini) -- Chapter 2. Descriptive comparison of the rating scales through different scale estimates. Simulation-based analysis (Irene Arellano) -- Chapter 3. Central Moments of a Fuzzy Random Variable using the Signed Distance: a Look towards the Variance (Redina Berkachy) -- Chapter 4. On Missing Membership Degrees: Modelling Non-existence, Ignorance and Inconsistency (Michal Burda) etc.
Sommario/riassunto	This book features 29 peer-reviewed papers presented at the 9th International Conference on Soft Methods in Probability and Statistics (SMPS 2018), which was held in conjunction with the 5th International Conference on Belief Functions (BELIEF 2018) in Compiègne, France on September 17–21, 2018. It includes foundational, methodological and applied contributions on topics as varied as imprecise data handling, linguistic summaries, model coherence, imprecise Markov chains, and robust optimisation. These proceedings were produced using EasyChair. Over recent decades, interest in extensions and alternatives to probability and statistics has increased significantly in diverse areas, including decision-making, data mining and machine learning, and

optimisation. This interest stems from the need to enrich existing models, in order to include different facets of uncertainty, like ignorance, vagueness, randomness, conflict or imprecision. Frameworks such as rough sets, fuzzy sets, fuzzy random variables, random sets, belief functions, possibility theory, imprecise probabilities, lower previsions, and desirable gambles all share this goal, but have emerged from different needs. The advances, results and tools presented in this book are important in the ubiquitous and fast-growing fields of data science, machine learning and artificial intelligence. Indeed, an important aspect of some of the learned predictive models is the trust placed in them. Modelling the uncertainty associated with the data and the models carefully and with principled methods is one of the means of increasing this trust, as the model will then be able to distinguish between reliable and less reliable predictions. In addition, extensions such as fuzzy sets can be explicitly designed to provide interpretable predictive models, facilitating user interaction and increasing trust.
