

1. Record Nr.	UNINA9910999683803321
Autore	Trejos Javier
Titolo	Data Science, Classification, and Artificial Intelligence for Modeling Decision Making / / edited by Javier Trejos, Theodore Chadjipadelis, Aurea Grané, Mario Villalobos
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	3-031-85870-0
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (194 pages)
Collana	Studies in Classification, Data Analysis, and Knowledge Organization, , 2198-3321
Altri autori (Persone)	ChadjipadelisTheodore GranéAurea VillalobosMario
Disciplina	519.50285
Soggetti	Machine learning Multivariate analysis Information visualization Data mining Artificial intelligence - Data processing Statistical Learning Multivariate Analysis Data and Information Visualization Machine Learning Data Mining and Knowledge Discovery Data Science
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Preface -- Acknowledgements -- G. Afriyie, D. Hughes, A. Nettel Aguirre, N. Li, C. H. Lee, L. M. Lix, and T. Sajobi: A Comparison of Multivariate Mixed Models and Generalized Estimation Equations Models for Discrimination in Multivariate Longitudinal Data -- C. Adela Anton and I. Smith: A Multivariate Functional Data Clustering Method Using Parsimonious Cluster Weighted Models -- J. P. Arroyo-Castro and S. W. Chou-Chen: Unsupervised Detection of Anomaly in Public Procurement Processes -- Z. Aouabed, M. Achraf Bouaoune, V.

Therrien, M. Bakhtyari, M. Hijri, and V. Makarenkov: Predicting Soil Bacterial and Fungal Communities at Different Taxonomic Levels Using Machine Learning -- V. Bouranta, G. Panagiotidou and T. Chadjipadelis: Candidates, Parties, Issues and the Political Marketing Strategies: A Comparative Analysis on Political Competition in Greece -- J. Cervantes, M. Monge, and D. Sabater: Predicting Air Pollution in Beijing, China Using Chemical, and Climate Variables -- J. Champagne Gareau, É. Beaudry, and V. Makarenkov: Towards Topologically Diverse Probabilistic Planning Benchmarks: Synthetic Domain Generation for Markov Decision Processes -- P. Chaparala and P. Nagabhushan: Symbolic Data Analysis Framework for Recommendation Systems: SDA-RecSys -- E. Costa, I. Papatsouma, and A. Markos: A Deterministic Information Bottleneck Method for Clustering Mixed-Type Data -- M. Farnia and N. Tahiri: A New Metric to Classify B Cell Lineage Tree -- T. Górecki, M. Krzyko, and W. Wolyski: Applying Classification Methods for Multivariate Functional Data -- K. Moussa Sow and N. Ghazzali: Machine Learning-Based Classification and Prediction to Assess Corrosion Degradation in Mining Pipelines -- G. Nason, D. Salnikov, and M. Cortina-Borja: Modelling Clusters in Network Time Series with an Application to Presidential Elections in the USA -- M. A. Nunez and M. A. Schneider: On the Vapnik-Chervonenkis Dimension and Learnability of the Hurwicz Decision Criterion -- W. Pan and L. Billard: Distributional-based Partitioning with Copulas -- G. Panagiotidou and T. Chadjipadelis: Mapping Electoral Behavior and Political Competition: A Comparative Analytical Framework for Voter Typologies and Political Discourses -- O. Rodríguez Rojas: Riemannian Statistics for Any Type of Data -- A. Roy and F. Montes: Hypothesis Testing of Mean Interval for  $p$ -dimensional Interval-valued Data -- M. Solís and A. Hernández: UMAP Projections and the Survival of Empty Space: A Geometric Approach to High-Dimensional Data -- Q. Stier and M. C. Thrun: An Efficient Multicore CPU Implementation of the DatabionicSwarm.

---

#### Sommario/riassunto

This book gathers selected and peer-reviewed contributions presented at the 18th Conference of the International Federation of Classification Societies (IFCS 2024), held in San José, Costa Rica, July 15–19, 2024. Covering a wide range of topics, it describes modern methods and real-world applications in data science, classification, and artificial intelligence related to modeling decision making. Numerous novel techniques and innovative applications are investigated, such as anomaly detection in public procurement processes, multivariate functional data clustering, air pollution prediction, benchmark generation for probabilistic planning, recommendation systems based on symbolic data analysis, and methods for clustering mixed-type data. Advanced statistical concepts are explored, including Vapnik-Chervonenkis dimensionality, Riemannian statistics, hypothesis testing for interval-valued data, and mixed models. Furthermore, machine learning techniques are applied to predict soil bacterial and fungal communities, classify electoral behavior and political competition, and assess corrosion degradation in mining pipelines. The diversity of topics discussed in this collection reflects the ongoing advancement and interdisciplinary nature of statistical and data science research, as well as its application across various fields and sectors. These studies contribute to the development of robust methodologies and efficient computational tools to address complex challenges in the era of big data. The book is intended for researchers and practitioners seeking the latest developments and applications in the field of data science and classification.

---