1. Record Nr. UNINA9910741181603321

Autore	Larriba Yolanda
Titolo	Statistical Methods at the Forefront of Biomedical Advances / / edited by Yolanda Larriba
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
ISBN	9783031327292 3031327292
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (280 pages)
Disciplina	610.21
Soggetti	Biometry Biomedical engineering Bioinformatics Biological models Biostatistics Biomedical Engineering and Bioengineering Computational and Systems Biology Biological Models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Forecasting of SARS-COV-2 dynamic: beyond the classical SIR model -- Derivation of OED methods for applications in cytogenetic biodosimetry -- Minimum Phi-divergence tests for ophthalmological data grouped in clusters -- Multimodality test for determining which genes distinguish oncological patients -- Exploring the relationship between different cancer sites using disease mapping models -- Advances in flow cytometry gating based on distances and divergences in probability spaces -- Application of quantile regression models for biomedical data -- Hippocampus shape analysis via skeletal models and kernel smoothing -- Methods for analysis of microbiome count data with applications -- The FMM model as a classifier of cardiovascular pathologies -- A novel statistical insight of the circadian markers that govern cardiac rhythms -- Sleep and circadian synchronization assessment from multivariate recordings. .

Sommario/riassunto	This book presents novel statistics methods and reproducible software that helps to solve challenging problems in biomedicine. Specifically, it consists of a collection of 11 chapters contributed by some of the leading experts in the mathematical and statistical field which address new challenges in very disparate biomedical areas, such as genomics, cancer, circadian biology, microbiome, mental disorders, and more. The mathematical rigor is written in a user-friendly way to serve a general biomedical audience ranging from trainees or students to doctors, as well as scientific researchers, university departments, and PhD students.

2. Record Nr. UNINA9910337645403321

Autore	Schoonenberg Wester C. H
Titolo	A Hetero-functional Graph Theory for Modeling Interdependent Smart City Infrastructure / / by Wester C. H. Schoonenberg, Inas S. Khayal, Amro M. Farid
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-319-99301-1
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (216 pages)
Disciplina	307.1216
Soggetti	Engineering design Power electronics Renewable energy resources Computer science - Mathematics Engineering Design Power Electronics, Electrical Machines and Networks Renewable and Green Energy Computational Science and Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Smart Cities: A 21st Century Grand Challenge -- The Need for Hetero-functional Graph Theory -- Hetero-functional Graph Theory

Preliminaries -- Hetero-functional Graph Theory -- Modeling Interdependent Smart City Infrastructure with HFGT -- Appendices.

Sommario/riassunto

Cities have always played a prominent role in the prosperity of civilization. Indeed, every great civilization we can think of is associated with the prominence of one or more thriving cities. And so understanding cities -- their inhabitants, their institutions, their infrastructure -- what they are and how they work independently and together -- is of fundamental importance to our collective growth as a human civilization. Furthermore, the 21st century “smart” city, as a result global climate change and large-scale urbanization, will emerge as a societal grand challenge. This book focuses on the role of interdependent infrastructure systems in such smart cities especially as it relates to timely and poignant questions about resilience and sustainability. In particular, the goal of this book is to present, in one volume, a consistent Hetero-Functional Graph Theoretic (HFGT) treatment of interdependent smart city infrastructures as an overarching application domain of engineering systems. This work may be contrasted to the growing literature on multi-layer networks, which despite significant theoretical advances in recent years, has modeling limitations that prevent their real-world application to interdependent smart city infrastructures of arbitrary topology. In contrast, this book demonstrates that HFGT can be applied extensibly to an arbitrary number of arbitrarily connected topologies of interdependent smart city infrastructures. It also integrates, for the first time, all six matrices of HFGT in a single system adjacency matrix. The book makes every effort to be accessible to a broad audience of infrastructure system practitioners and researchers (e.g. electric power system planners, transportation engineers, and hydrologists, etc.). Consequently, the book has extensively visualized the graph theoretic concepts for greater intuition and clarity. Nevertheless, the book does require a common methodological base of its readers and directs itself to the Model-Based Systems Engineering (MBSE) community and the Network Science Community (NSC). To the MBSE community, we hope that HFGT will be accepted as a quantification of many of the structural concepts found in model-based systems engineering languages like SysML. To the NSC, we hope to present a new view as how to construct graphs with fundamentally different meaning and insight. Finally, it is our hope that HFGT serves to overcome many of the theoretical and modeling limitations that have hindered our ability to systematically understand the structure and function of smart cities. .