

# Book Reviews | Reseñas

## MATHEMATICAL MODELLING IN BIOSCIENCE. THEORY AND APPLICATIONS

Hemen Dutta (2024)  
Elsevier

ISBN: 9780443154454

The book *Mathematical Modeling in Bioscience: Theory and Applications* is recommended to readers dealing with quantitative techniques for bioscience research. It is concerned with newly developed models in challenging topics of bioscience. Among them you will obtain knowledge on modeling of the Topp-Leone, transmission of SARS-COV-2, HIV/AIDS, vector-borne disease. Models for irrigation scheduling, predator-prey pattern formulation, of the family of Weibull-G distributions are presented.

The readers will have a mathematical description of recent models and techniques, and discussions of their applications in bioscience phenomena modeling. The book is of interest for specialists having in their profiles connections with mathematical modeling, statistics, biology, biomedical engineering, computer science, applied sciences among other profiles.

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## THE ESSENTIAL CRITERIA OF GRAPH DATABASES

Ricky Sun (2024)  
Elsevier

ISBN: 9780443141621

This book is concerned with presenting a collection of newly developed applications of Graph Theory in Big Data problems appearing in studies in banking, as asset-liability and liquidity risk management. The contents fulfill gaps present in Artificial Intelligence (AI) modeling as those posed by Blackbox, lack of explainability, Silos, slews of siloed systems across the AI ecosystem, Low-performance, most of ML/DL based AI systems are SLOW. There is a need providing of effective AI solutions, when working with Graph Databases. The solving challenges posed by high-performance graph database and graph computing. They are treated in this book, permitting to simplify the tasks to be solved in applications. Graph theoreticians will broad their research fields.

P. Singh  
Advanced Computation School

## DEEP LEARNING

**Editors:** Arni Srinivasa Rao, Venu Govindaraju, C.R. Rao (2023)  
North Holland

ISBN: 9780443184307 eBook ISBN: 9780443184314

Deep Learning is the 48<sup>th</sup> volume of the series *Handbook of Statistics*. As usual in this series are discussed, A set of new advances in the field are discussed. The readers should have an advanced knowledge in areas related with

Statistics and Artificial Intelligence. Some years ago I assisted to a international conference where a tutorial on Deep Learning was delivered. It was attended by a bunch of pedagogical oriented persons and they were disappointed by the course, as expected. If you are not specialized, this is not your source book. The chapters cover themes as Generative Adversarial Networks for Biometric Synthesis, Data Science and Pattern Recognition, Facial Data Analysis, Deep Learning in Electronics, Pattern Recognition, Computer Vision and Image Processing, Mechanical Systems, Crop Technology and Weather, Manipulating Faces for Identity Theft via Morphing and Deepfake, Biomedical Engineering.

P. Gupta  
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## **NUMERICAL CONTROL: PART B**

Emmanuel Trélat, Enrique Zuazua (2023)  
North Holland

ISBN: 9780323850605 eBook ISBN: 9780323858267

Numerical Control: Part B, is the 24<sup>th</sup> volume of the series Handbook of Numerical Analysis. It is devoted to highlighting on new advances in Numerical Control. The editors have set together an international board of well-known authors. The volume chapters deal with: Control problems in the coefficients and the domain for linear elliptic equations, Computational approaches for extremal geometric eigenvalue problems, Non-overlapping domain decomposition in space and time for PDE-constrained optimal control problems on networks, Feedback Control of Time-dependent Nonlinear PDEs with Applications in Fluid Dynamics, Stabilization of the Navier-Stokes equations - Theoretical and numerical aspects, Reconstruction algorithms based on Carleman estimates, and more.

Other sections cover Discrete time formulations as time discretization strategies in data assimilation, Back and forth iterations/Time reversal methods, Unbalanced Optimal Transport: from Theory to Numeric, An ADMM Approach to the Exact and Approximate Controllability of Parabolic Equations, Nonlocal balance laws -- an overview over recent results, Numeric and control of conservation laws, Numerical approaches for simulation and control of superconducting quantum circuits, and much more.

If you are not a specialist, do not buy the book.

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