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Arnold Network for Gene Regulatory Network Inference. -- Optimal input design for model selection in systems with cell-to-cell variability. -- Decoding Gene Regulation in Alzheimer's disease with Transfer Learning and Explainable Machine Learning. -- Influence Graphs of Phytoplankton Species Interactions using Logical Learning. -- Evaluating PDE discovery methods for multiscale modeling of biological signals. -- Optimizing Feature Extraction Methods using Class Similarity Ratio for EMG-based Hand Gesture Classification. -- Population models and control. -- Eukaryotic ancestry in a finite world. -- Minimal metabolic exchanges for microbial communities in a chemostat at steady state. -- Seed inference in interacting microbial communities using combinatorial optimization. -- A model-free control strategy for selective disruption of parkinsonian brain oscillations.

Sommario/riassunto

This book constitutes the refereed proceedings of the 23rd International Conference on Computational Methods in Systems Biology, CMSB 2025, which took place in Lyon, France, during September 10–12, 2025. The 21 full papers presented in this volume were carefully reviewed and selected from 34 submissions sent to reviews. They are grouped into the following topics: Boolean Networks; Continuous and Hybrid models; Rule-based models; Model inference and machine learning; Population models and control. .