

Contents

1 Simulation of the Benchmark Datasets	1
Andrea Pinna, Nicola Soranzo, Alberto de la Fuente and Ina Hoeschele	
2 A Panel of Learning Methods for the Reconstruction of Gene Regulatory Networks in a Systems Genetics Context	9
David Allouche, Christine Cierco-Ayrolles, Simon de Givry, Gérald Guillermin, Brigitte Mangin, Thomas Schiex, Jimmy Vandel and Matthieu Vignes	
3 Benchmarking a Simple Yet Effective Approach for Inferring Gene Regulatory Networks from Systems Genetics Data	33
Sandra Heise, Robert J. Flassig and Steffen Klamt	
4 Differential Equation Based Reverse-Engineering Algorithms: Pros and Cons	49
Gennaro Gambardella, Roberto Pagliarini, Francesco Gregoretti, Gennaro Oliva and Diego di Bernardo	
5 Gene Regulatory Network Inference from Systems Genetics Data Using Tree-Based Methods	63
Vân Anh Huynh-Thu, Louis Wehenkel and Pierre Geurts	
6 Extending Partially Known Networks	87
Pegah Tavakkolkhah and Robert Küffner	
7 Integration of Genetic Variation as External Perturbation to Reverse Engineer Regulatory Networks from Gene Expression Data	107
Francesco Sambo, Tiziana Sanavia and Barbara Di Camillo	
8 Using Simulated Data to Evaluate Bayesian Network Approach for Integrating Diverse Data	119
Luan Lin and Jun Zhu	