Foreword

Recent developments in biology and bioinformatics have produced a huge amount of data on the static structure of the living matter and the research community is now facing the challenge of providing their appropriate interpretation, integration, and system-level understanding. Deep interdisciplinary skills are required to attain the goal, spanning from biology to computer science and touching upon mathematics, engineering, and physics.

The thorough expertise of the editors of the book, Paola Lecca, Dan Tulpan, and Kanagasabai Rajaraman, clearly shows in the thoughtful selection of contributions in this book.

Paola Lecca, with whom I had the pleasure of collaborating on many occasions over the latest few years, has a rich research record on stochastic biochemical kinetics, biological networks inference, optimal experimental design in biochemistry, and computational cell biology.

Dan Tulpan is an expert on computational biology, microarray probe design, comparative genomics, and data analysis.

Kanagasabai Rajaraman is a prolific and skilled researcher in data mining, semantic technologies, and bio-ontologies.

The three of them carefully choose an outstanding excerpt of topics and of contributions which make this book a unique reference on the most challenging areas at the convergence of biology and computational sciences.

*Paola Quaglia*

*University of Trento, Italy, 23 April 2011*

*Paola Quaglia, PhD in Computer Science, is Associate Professor at the Faculty of Science, University of Trento, Italy. Her research interests are mainly in the area of the application of formal methods to model and analyze the dynamics of biological behaviours, and to study and validate service-oriented distributed systems. In particular, she has been active in the following areas: application of mobile process calculi to systems biology; specification of biochemical interactions; analysis of service-oriented coordination and interaction protocols; application of typing disciplines to specification languages for distributed systems; semantics for mobile processes; probabilistic and stochastic process calculi. Her major contributions are relative to: investigation and definition of primitives and formal languages for modelling biological systems; specification, analysis, and simulation of complex systems exhibiting stochastic or probabilistic behaviour; comparative analysis of the expressiveness of distinct interaction paradigms.*