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Nota di contenuto	I. General theory of stochastic evolutionary biological network: 1. Introduction to systems evolutionary biology -- 2. Stochastic dynamics systems and stochastic nash game in evolutionary biological networks -- 3. Evolutionary gene regulatory networks and viochemical networks -- 4. Evolutionary ecological networks -- II. Applications of network evolution to systems synthetic biology: 5. Robust design for evolutionary synthetic gene networks under genetic mutations and environmental disturbances: genetic algorithm (GA) approach in genotype space -- 6. Robust design of genetic networks: evolutionary systems biology approach via an evolutionary algorithm (EA) in phenotype space -- 7. On the adaptive design rules of biochemical networks in evolution -- III. Stochastic evolutionary game strategies: 8. Stochastic evolutionary game strategies -- 9. Stochastic noncooperative and cooperative evolutionary game strategies of a population of biological networks under natural selection -- 10. Evolutionary game strategy of an evolutionary biological network of somatic cells in the organ carcinogenesis and aging process -- IV. Evolution measurements of biological networks: 11. On the system entropy of nonlinear stochastic biological networks and its relationship to network evolution -- 12. On the evolution measurement of somatic networks by the changes of their robustness and response ability in the aging process

	via microarray data -- 13. Evolution of network biomarkers measured by microarray data from early to late stage bladder cancer samples.
Sommario/riassunto	"[D]iscusses the evolutionary game theory and strategies of nonlinear stochastic biological networks under random genetic variations and environmental disturbances and their application to systematic synthetic biology design. The book provides more realistic stochastic biological system models to mimic the real biological systems in the evolutionary process and then introduces network evolvability, stochastic evolutionary game theory, and strategy based on nonlinear stochastic networks in evolution. These results are not only remarkable but also revolutionary in genetic evolutionary biology; they can also be applied to economics, engineering, and bioscience. Explains network fitness, network evolvability, and network robustness of biological networks from the systematic perspective. Discusses the evolutionary noncooperative and cooperative game strategies of biological networks. Offers detailed diagrams to help readers understand the biological networks, their systematic behaviors, and simulational results of the evolutionary biological network. Provides every chapter with at least one example with a computational simulation to illustrate the solution procedure of evolutionary theory and strategy and their results to confirm the proposed evolutionary theories and strategies"--