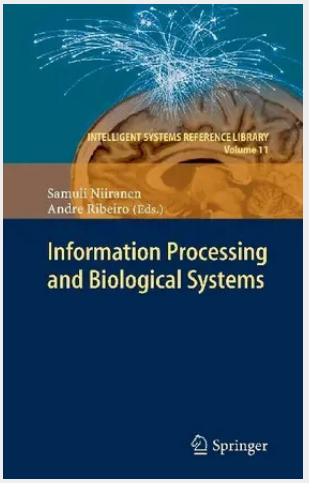
Niiranen / Ribeiro

Information Processing and Biological Systems



Living beings require constant information processing for survival. In cells, information is being processed and propagated at various levels, from the gene regulatory network to chemical pathways, to the interaction with the environment. How this is achieved and how information is coded is still poorly understood. For example, what a cell interprets as information in the temporal level of an mRNA and what is interpreted as noise remains an open question. Recently, information theoretical methods and other tools, developed in the context of engineering and natural sciences, have been applied to study diverse biological processes. This book covers the latest findings on how information is processed in various biological processes, ranging from information processing and propagation in gene regulatory networks to information processing in natural language. An overview is presented of the state-of-the-art in information processing in biological systems and the opinion of current leaders in this research field on future research directions.

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