Mathematical Methods and Models Applied in Information Technology and Electrical Engineering

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Message from the Guest Editors

Logical networks include Boolean networks, multi-valued logical networks, and mix-valued logical networks. In a Boolean network, each gene can take two possible values, 1 and 0, and its value (1 or 0) indicates its measured abundance (expressed or unexpressed; high or low). From a graphical perspective, genes in a Boolean network are nodes in this network, and edges describe regulatory relationships between genes. Based on Boolean networks, several important logical models are established, such as networked evolutionary games, hybrid automata, hybrid Petri nets, finite-field networks, feedback shift registers, fuzzy control, and so on. When delay, impulse, switching, and uncertainty are considered in logical systems, various generalized systems are obtained. Recently, there have been many new developments on logical systems based on the classical theory of studying Boolean networks. This includes but is not limited to the analysis of logical systems, design of logical control, applications of logical systems, and other related issues, such as computational complexity and mathematical foundation.

Special Issue

Editor-in-Chief

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Message from the Editor-in-Chief

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