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Nota di contenuto	-- Theory, mathematical and physical models. -- Theory of Cellular Automata: from the Past and Present to Some Path towards the Future. -- Are some family members harmful? – a study on Diploid Cellular Automata. -- Regional Controllability of Cellular Automata through Preimages. -- Pattern Formation by Collective Behavior of Competing Cellular Automata- based Agents. -- Eects of a Vanishing Noise on Elementary Cellular Automata Phase-Space Structure. -- A New Class of the Smallest 4-state Semi-symmetric FSSP Partial Solutions for 1D Arrays. -- Synchronization of chains of logistic maps. -- Fusing

Dierent Cellular Automata Models for Surface Flows in SCURRI: Viscosity Extension Step. -- Chaos in a two-dimensional magneto-hydrodynamic system. -- Computational aspects and applications. -- Exploring Diverse Congurations of Cellular Automata Based S-Boxes Using Reinforcement Learning. -- Ecient simulation of non-uniform cellular automata with a convolutional neural network. -- A Scheme for Symmetric Cryptosystem using Large Cycle Reversible Cellular Automata. -- Reversible Decimal First Degree Cellular Automata For Data Classication. -- Sentiment Analysis for Code-Mixed Data using Cellular Automata with Deep Learning Models. -- Asynchronous Method of Generating Stream Ciphers in a Group of Robots Based on Cellular Automata with Active Cells. -- Controlling Desertication Using Cellular Automata and Genetic Algorithms. -- Desertication Control Strategies: A Hybrid Approach using Cellular Automata and Reinforcement Learning. -- Social and biological models. -- Global Analysis of a Lane Merging Strategy for Collaborative Autonomous and Connected vehicles. -- Binary Hiking Optimization Algorithm. -- A Spatial Daisyworld Model. -- A Reaction-Diusion Cellular Automata Model for Mycelium-based Engineered Living Materials Evolution. -- Mycelium-based ELM Digital Twin Implemented in FPGA.

Sommario/riassunto

This book constitutes the refereed proceedings of the 16th International Conference on Cellular Automata for Research and Industry, Cellular Automata, ACRI 2024, held in Florence, Italy, in September 9–11, 2024. The 20 full papers presented were carefully reviewed and selected from 33 submissions. They were organized in the following topical sections: theory, mathematical and physical models; computational aspects and applications; social and biological models.