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Nota di contenuto	Intro -- Preface -- Organization -- Contents -- Cellular Automata Tutoring -- Cellular Automata Application on Chemical Computing Logic Circuits -- 1 Introduction -- 2 Methods for Simulation of Chemical Gates -- 3 Results -- 4 Conclusions -- References -- Theory -- Exploring Lightweight S-boxes Using Cellular Automata and Reinforcement Learning -- 1 Introduction -- 2 Cellular Automata -- 3 Substitution Boxes (S-boxes) -- 3.1 Nonlinearity -- 3.2 Differential Uniformity -- 4 Semi-bent Boolean Functions -- 5 Reinforcement Learning -- 6 Our Design -- 6.1 Boolean Functions -- 6.2 Substitution Box -- 6.3 Reinforcement Learning -- 7 Results -- 8 Conclusion and Future Work -- A Appendix -- References -- Identification of Periodic

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Sommario/riassunto

This book constitutes the refereed proceedings of the 15th International Conference on Cellular Automata for Research and Industry, ACRI 2022, which took place in Geneva, Switzerland, in September 2022. The 31 full papers presented in this volume were carefully reviewed and selected from 36 submissions. They were organized in topical sections named: Theory; Modelling and simulation physical systems and phenomena; Cellular automata and spreading dynamics; Crowds, pedestrian and traffic dynamics; Other studies on cellular automata.