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| Nota di contenuto       | <p>Intro -- Preface -- Organization -- Table of Contents -- Invited Papers -- FPSolve: A Generic Solver for Fixpoint Equations over Semirings -- 1 Introduction -- 2 Scenario: A Recommendation System -- 3 Algorithms and Data Structures -- 3.1 Solving Linear Equations -- 3.2 Decomposition into Strongly-Connected Components -- 4 Implementation -- 4.1 Invocation of the Standalone Solver -- 4.2 Custom Semirings and Extensions -- 5 Conclusions and Related Tools -- References -- Restarting Automata for Picture Languages: A Survey on Recent Developments -- 1 Introduction -- 2 Pictures and Picture Languages -- 3 Sgraffito Automata -- 4 Deterministic Sgraffito Automata -- 5 Restarting Tiling Automata -- 6 Ordered Restarting Automata -- 7 Deterministic Three-Way ORWW-Automata -- 8 Deterministic Two-Way ORWW-Automata -- 9 Conclusion -- References -- Investigations on Automata and Languages over a Unary Alphabet -- 1 Introduction -- 2 Unary Finite Automata: Optimal Simulations -- 3 Unary Two-Way Automata -- 4 Beyond Finite Automata -- 5 Beyond Regular Languages -- 6 Final Remarks -- References -- Cellular Automata for Crowd Dynamics -- 1 Introduction -- 2 CA Models for Crowd Dynamics -- 3 Conclusions -- References -- Regular Papers -- Counting Equivalent Linear Finite Transducers Using a Canonical Form -- 1 Introduction -- 2 Basic Concepts -- 3 Testing the Equivalence of LFTs -- 4 Canonical LFTs -- 5 On the Size of Equivalence Classes of LFTs -- 6 Conclusion -- References -- On the Power of One-Way Automata with Quantum and Classical States -- 1 Introduction -- 2 Preliminaries -- 2.1 Linear Algebra -- 2.2 Languages and Formal Power Series -- 2.3 Finite Automata -- 3 Characterizing the Power of qcfas -- 4 Size-Cost of Language Operations on qcfas -- References -- On Comparing Deterministic Finite Automata and the Shuffle of Words -- 1 Introduction. 2 Preliminaries -- 3 Fixed-Length Skeleton Polynomial Algorithm -- 4 General coNP-Completeness -- References -- Minimal Partial Languages and Automata -- 1 Introduction -- 2 Approximating Minimal -DFAs -- 3 Computing Minimal -DFAs -- 3.1 Our Minlang Algorithm -- 3.2 Our Redundancy Check Algorithm -- 3.3 Our Partial Language Check Algorithm -- 4 Adapting Minlang for Infinite Languages -- 5 Conclusion and Open Problems -- References -- Large Aperiodic Semigroups -- 1 Introduction -- 2 Terminology and Notation -- 3 Unitary and Semiconstant DFAs -- 4 Unitary Semigroups -- 5 Semiconstant Semigroups -- References -- On the Square of Regular Languages -- 1 Introduction -- 2 Square for Automata with k Final States -- 2.1 An Application -- 3 Square of Languages over Unary Alphabet -- 3.1 Finite Unary Languages -- 3.2 General Unary Languages -- 4 Conclusions -- References -- Unary Languages Recognized by Two-Way One-Counter Automata -- 1 Introduction -- 2 Background -- 3 Main Results -- 3.1 Simulation of Multi-counter Automata on Unary Alphabet -- 3.2 Simulation of Turing Machines on Binary and General Alphabets -- 3.3 A Quantum Simplification -- 3.4 Unary 2D1CAs versus Two-Counter Machines -- References -- A Type System for Weighted Automata and Rational Expressions -- 1 Introduction -- 2 Typing Automata and Rational Expressions -- 2.1 Weighted Automata -- 2.2 Rational Expressions -- 3 The Type System</p> |

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Sommario/riassunto

This book constitutes the refereed proceedings of the 19th International Conference on Implementation and Application of Automata, CIAA 2014, held in Giessen, Germany, in July/August 2014. The 21 revised full papers presented together with 4 invited papers were carefully selected from 36 submissions. The papers cover all aspects of implementation, application, and theory of automata and related structures such as algorithms on automata, automata and logic, bioinformatics, complexity of automata operations, compilers, computer-aided verification, concurrency, data structure design for automata, data and image compression, design and architecture of automata software, digital libraries, DNA/molecular/membrane computing, document engineering, editors, environments, experimental studies and practical experience, implementation of verification methods and model checking, industrial applications, natural language and speech processing, networking, new algorithms for manipulating automata, object-oriented modeling, pattern-matching, pushdown automata and context-free grammars, quantum computing, structured and semi-structured documents, symbolic manipulation environments for automata, transducers and multi-tape automata, techniques for graphical display of automata, VLSI, viruses and related phenomena, and world-wide Web.

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