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Note generali	Description based upon print version of record.
Nota di contenuto	Probabilistic Systems -- A Probabilistic Logic for Verifying Continuous-time Markov Chains -- Under-Approximating Expected Total Rewards in POMDPs -- Correct Probabilistic Model Checking with Floating-Point Arithmetic -- Correlated Equilibria and Fairness in Concurrent

Stochastic Games -- Omega Automata -- A Direct Symbolic Algorithm for Solving Stochastic Rabin Games -- Practical Applications of the Alternating Cycle Decomposition -- Sky Is Not the Limit: Tighter Rank Bounds for Elevator Automata in Büchi Automata Complementation -- On-The-Fly Solving for Symbolic Parity Games -- Equivalence Checking -- Distributed Coalgebraic Partition Refinement -- From Bounded Checking to Verification of Equivalence via Symbolic Up-to Techniques -- Equivalence Checking for Orthocomplemented Bisemilattices in Log-Linear Time -- Monitoring and Analysis -- A Theoretical Analysis of Random Regression Test Prioritization -- Verified First-Order Monitoring with Recursive Rules -- Maximizing Branch Coverage with Constrained Horn Clauses -- Efficient Analysis of Cyclic Redundancy Architectures via Boolean Fault Propagation -- Tools / Optimizations, Repair and Explainability -- Adiar: Binary Decision Diagrams in External Memory -- Forest GUMP: A Tool for Explanation -- Alpinist: an Annotation-Aware GPU Program Optimizer -- Automatic Repair for Network Programs -- 11th Competition on Software Verification / SV-COMP 2022 -- Progress on Software Verification: SV-COMP 2022 -- AProVE: Non-Termination Witnesses for C Programs (Competition Contribution) -- BRICK: Path Enumeration Based Bounded Reachability Checking of C Program (Competition Contribution) -- A Prototype for Data Race Detection in CSeq 3 (Competition Contribution) -- Dartagnan: SMT-based Violation Witness Validation (Competition Contribution) -- Deagle: An SMT-based Verifier for Multi-threaded Programs (Competition Contribution) -- The Static Analyzer Frama-C in SV-COMP (Competition Contribution) -- GDart: An Ensemble of Tools for Dynamic Symbolic Execution on the Java Virtual Machine (Competition Contribution) -- Graves-CPA: A Graph-Attention Verifier Selector (Competition Contribution) -- GWIT: A Witness Validator for Java based on GraalVM (Competition Contribution) -- The Static Analyzer Infer in SV-COMP (Competition Contribution) -- LART: Compiled Abstract Execution (Competition Contribution) -- Symbiotic 9: String Analysis and Backward Symbolic Execution with Loop Folding (Competition Contribution) -- Symbiotic-Witch: A Klee-Based Violation Witness Checker (Competition Contribution) -- Theta: portfolio of CEGAR-based analyses with dynamic algorithm selection -- Ultimate GemCutter and the Axes of Generalization (Competition Contribution) -- Wit4Java: A Violation-Witness Validator for Java Verifiers (Competition Contribution).

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#### Sommario/riassunto

This open access book constitutes the proceedings of the 28th International Conference on Tools and Algorithms for the Construction and Analysis of Systems, TACAS 2022, which was held during April 2-7, 2022, in Munich, Germany, as part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2022. The 46 full papers and 4 short papers presented in this volume were carefully reviewed and selected from 159 submissions. The proceedings also contain 16 tool papers of the affiliated competition SV-Comp and 1 paper consisting of the competition report. TACAS is a forum for researchers, developers, and users interested in rigorously based tools and algorithms for the construction and analysis of systems. The conference aims to bridge the gaps between different communities with this common interest and to support them in their quest to improve the utility, reliability, flexibility, and efficiency of tools and algorithms for building computer-controlled systems.

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