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	Nota di contenuto	Tool Demos -- EVA: a Tool for the Compositional Verification of AUTOSAR Models -- WASIM: A Word-level Abstract Symbolic Simulation Framework for Hardware Formal Verification -- Multiparty Session Typing in Java, Deductively -- PyLTA: A Verification Tool for Parameterized Distributed Algorithms -- FuzzBtor2: A Random Generator of Word-Level Model Checking Problems in Btor2 Format -- Eclipse ESCET™: The Eclipse Supervisory Control Engineering Toolkit -- Combinatorial Optimization/Theorem Proving -- New Core-Guided and Hitting Set Algorithms for Multi-Objective Combinatorial Optimization -- Verified reductions for optimization -- Specifying and Verifying Higher-order Rust Iterators -- Extending a High-Performance Prover to Higher-Order Logic -- Tools (Regular Papers) -- The WhyRel Prototype for Relational Verification of Pointer Programs -- Bridging Hardware and Software Analysis with Btor2C: A Word-Level-Circuit-to-C Converter -- CoPTIC: Constraint Programming Translated Into C -- Acacia-Bonsai: A Modern Implementation of Downset-Based LTL Realizability -- Synthesis -- Computing Adequately Permissive Assumptions for Synthesis -- Verification-guided Programmatic Controller Synthesis -- Taming Large Bounds in Synthesis from Bounded-Liveness Specifications -- Lockstep Composition for

Unbalanced Loops -- Synthesis of Distributed Agreement-Based Systems with Effciently Decidable Verification -- LTL Reactive Synthesis with a Few Hints -- Timed Automata Verification and Synthesis via Finite Automata Learning -- Graphs/Probabilistic Systems -- A Truly Symbolic Linear-Time Algorithm for SCC Decomposition -- Transforming quantified Boolean formulas using biclique covers -- Certificates for Probabilistic Pushdown Automata via Optimistic Value Iteration -- Probabilistic Program Verification via Inductive Synthesis of Inductive Invariants -- Runtime Monitoring/Program Analysis -- Industrial-Strength Controlled Concurrency Testing for C# Programs with Coyote -- Context-Sensitive Meta-Constraint Systems for Explainable Program Analysis -- Explainable Online Monitoring of Metric Temporal Logic -- 12th Competition on Software Verification — SV-COMP 2023 -- Competition on Software Verification and Witness Validation: SV-COMP 2023 -- Symbiotic-Witch 2: More Efficient Algorithm and Witness Refutation (Competition Contribution) -- 2LS: Arrays and Loop Unwinding (Competition Contribution) -- Bubaak: Runtime Monitoring of Program Verifiers (Competition Contribution) -- EBF 4.2: Black-Box Cooperative Verification for Concurrent Programs (Competition Contribution) -- Goblint: Autotuning Thread-Modular Abstract Interpretation (Competition Contribution) -- Java Ranger: Supporting String and Array Operations (Competition Contribution) -- Korn–Software Verification with Horn Clauses (Competition Contribution) -- Mopsa-C: Modular Domains and Relational Abstract Interpretation for C Programs (Competition Contribution) -- PIChecker: A POR and Interpolation based Verifier for Concurrent Programs (Competition Contribution) -- Ultimate Automizer and the CommuHash Normal Form (Competition Contribution) -- Ultimate Taipan and Race Detection in Ultimate (Competition Contribution) -- VeriAbsL: Scalable Verification by Abstraction and Strategy Prediction (Competition Contribution) -- VeriFuzz 1.4: Checking for (Non-)termination (Competition Contribution). .

Sommario/riassunto	This open access book constitutes the proceedings of the 29th International Conference on Tools and Algorithms for the Construction and Analysis of Systems, TACAS 2023, which was held as part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2023, during April 22-27, 2023, in Paris, France. The 56 full papers and 6 short tool demonstration papers presented in this volume were carefully reviewed and selected from 169 submissions. The proceedings also contain 1 invited talk in full paper length, 13 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.