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Collana	Programming and Software Engineering ; ; 8442
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Nota di contenuto	Validity Checking of Put back Transformations in Bidirectional Programming -- Proof Engineering Considered Essential -- Engineering UToPiA: Formal Semantics for CML -- 40 Years of Formal Methods: Some Obstacles and Some Possibilities? -- A Refinement Based Strategy for Local Deadlock Analysis of Networks of CSP Processes -- Algebraic Principles for Rely-Guarantee Style Concurrency Verification Tools -- Definition, Semantics and Analysis of Multi rate Synchronous AADL -- Trust Found: Towards a Formal Foundation for Model Checking Trusted Computing Platforms -- The VerCors Tool for Verification of Concurrent Programs -- Knowledge-Based Automated Repair of Authentication Protocols -- A Simplified Z Semantics for Presentation

Interaction Models -- Log Analysis for Data Protection Accountability -- Automatic Compositional Synthesis of Distributed Systems -- Automated Real Proving in PVS via MetiTarski -- Quiescent Consistency: Defining and Verifying Relaxed Linearizability -- Temporal Precedence Checking for Switched Models and Its Application to a Parallel Landing Protocol -- Contracts in Practice -- When Equivalence and Bisimulation Join Forces in Probabilistic Automata -- Precise Predictive Analysis for Discovering Communication Deadlocks in MPI Programs -- Proof Patterns for Formal Methods -- Efficient Runtime Monitoring with Metric Temporal Logic: A Case Study in the Android Operating System -- IscasMc: A Web-Based Probabilistic Model Checker -- Invariants, Well-Founded Statements and Real-Time Program Algebra -- Checking Liveness Properties of Presburger Counter Systems Using Reachability Analysis -- A Symbolic Algorithm for the Analysis of Robust Timed Automata -- Revisiting Compatibility of Input-Output Modal Transition Systems -- Co-induction Simply: Automatic Co-inductive Proofs in a Program Verifier -- Management of Time Requirements in Component-Based Systems -- Compositional Synthesis of Concurrent Systems through Causal Model Checking and Learning -- Formal Verification of Operational Transformation -- Verification of a Transactional Memory Manager under Hardware Failures and Restarts -- SCJ: Memory-Safety Checking without Annotations -- Refactoring, Refinement and Reasoning: A Logical Characterization for Hybrid Systems -- Object Propositions -- Flexible Invariants through Semantic Collaboration -- Efficient Tight Field Bounds Computation Based on Shape Predicates -- A Graph-Based Transformation Reduction to Reach UPPAAL States Faster -- Computing Quadratic Invariants with Min- and Max-Policy Iterations: A Practical Comparison -- Efficient Self-composition for Weakest Precondition Calculi -- Towards a Formal Analysis of Information Leakage for Signature Attacks in Preferential Elections -- Analyzing Clinical Practice Guidelines Using a Decidable Metric Interval-Based Temporal Logic -- A Modular Theory of Object Orientation in Higher-Order UTP -- Formalizing and Verifying a Modern Build Language -- The Wireless Fire Alarm System: Ensuring Conformance to Industrial Standards through Formal Verification -- Formally Verifying Graphics FPU: An Intel® Experience -- MDP-Based Reliability Analysis of an Ambient Assisted Living System -- Diagnosing Industrial Business Processes: Early Experiences -- Formal Verification of Lunar Rover Control Software Using UPPAAL -- Formal Verification of a Descent Guidance Control Program of a Lunar Lander.

Sommario/riassunto

This book constitutes the refereed proceedings of the 19th International Symposium on Formal Methods, FM 2014, held in Singapore, May 2014. The 45 papers presented together with 3 invited talks were carefully reviewed and selected from 150 submissions. The focus of the papers is on the following topics: Interdisciplinary Formal Methods, Practical Applications of Formal Methods in Industrial and Research Settings, Experimental Validation of Tools and Methods as well as Construction and Evolution of Formal Methods Tools.