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Nota di contenuto	Toward Practical Application of Formal Methods in Software Lifecycle Processes -- Formal Methods in the Aerospace Industry: Follow the Money -- Applying Term Rewriting to Speech Recognition of Numbers -- Variable Permissions for Concurrency Verification -- A Concurrent Temporal Programming Model with Atomic Blocks -- A Composable Mixed Mode Concurrency Control Semantics for Transactional Programs -- Towards a Formal Verification Methodology for Collective Robotic

Systems -- Modeling Resource-Aware Virtualized Applications for the Cloud in Real-Time ABS -- Specification and Model Checking of the Chandy and Lamport Distributed Snapshot Algorithm in Rewriting Logic -- Quantitative Program Dependence Graphs -- Quantitative Analysis of Information Flow Using Theorem Proving -- Modeling and Verification of Probabilistic Actor Systems Using pRebeca -- Modular Verification of OO Programs with Interfaces -- Separation Predicates: A Taste of Separation Logic in First-Order Logic -- The Confinement Problem in the Presence of Faults -- Verification of ATL Transformations Using Transformation Models and Model Finders -- Automatic Generation of Provably Correct Embedded Systems -- Complementary Methodologies for Developing Hybrid Systems with Event-B -- A Temporal Logic with Mean-Payoff Constraints -- Time Constraints with Temporal Logic Programming -- Stepwise Satisfiability Checking Procedure for Reactive System Specifications by Tableau Method and Proof System -- Equational Abstraction Refinement for Certified Tree Regular Model Checking -- SMT-Based False Positive Elimination in Static Program Analysis -- Predicate Analysis with Block-Abstraction Memoization -- Heuristic-Guided Abstraction Refinement for Concurrent Systems -- More Anti-chain Based Refinement Checking -- An Analytical and Experimental Comparison of CSP Extensions and Tools -- Symbolic Model-Checking of Stateful Timed CSP Using BDD and Digitization -- Annotations for Alloy: Automated Incremental Analysis Using Domain Specific Solvers -- State Space c-Reductions of Concurrent Systems in Rewriting Logic -- A Practical Loop Invariant Generation Approach Based on Random Testing, Constraint Solving and Verification -- ConSMutate: SQL Mutants for Guiding Concolic Testing of Database Applications -- Demonic Testing of Concurrent Programs -- Towards Certified Runtime Verification.

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#### Sommario/riassunto

This book constitutes the refereed proceedings of the 14th International Conference on Formal Engineering Methods, ICFEM 2012, held in Kyoto, Japan, November 2012. The 31 revised full papers together with 3 invited talks presented were carefully reviewed and selected from 85 submissions. The papers address all current issues in formal methods and their applications in software engineering. They are organized in topical sections on concurrency, applications of formal methods to new areas, quantity and probability, formal verification, modeling and development methodology, temporal logics, abstraction and refinement, tools, as well as testing and runtime verification.

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