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Altri autori (Persone)	DongJin Song <1967-> ZhuHuibiao
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Invited Talks -- Fostering Proof Scores in CafeOBJ -- Exploiting Partial Success in Applying Automated Formal Methods -- Multicore Embedded Systems: The Timing Problem and Possible Solutions -- Theorem Proving and Decision Procedures -- Applying PVS Background Theories and Proof Strategies in Invariant Based Programming -- Proof Obligation Generation and Discharging for Recursive Definitions in VDM -- Correct-by-Construction Model Transformations from Partially Ordered Specifications in Coq -- Decision Procedures for the Temporal Verification of Concurrent Lists -- An Improved Decision Procedure for Propositional Projection Temporal Logic -- Web Services and Workflow -- A Semantic Model for Service Composition with Coordination Time Delays -- Compensable WorkFlow Nets -- Automatically Testing Web Services Choreography with Assertions -- Applying Ordinary Differential Equations to the Performance Analysis of Service Composition -- Verification I -- Verifying Heap-Manipulating Programs with Unknown Procedure Calls -- API Conformance Verification for Java

Programs -- Assume-Guarantee Reasoning with Local Specifications -- Automating Coinduction with Case Analysis -- Applications of Formal Methods -- Enhanced Semantic Access to Formal Software Models -- Making Pattern- and Model-Based Software Development More Rigorous -- Practical Parameterised Session Types -- A Formal Verification Study on the Rotterdam Storm Surge Barrier -- Verification II -- Formalization and Correctness of the PALS Architectural Pattern for Distributed Real-Time Systems -- Automated Multiparameterised Verification by Cut-Offs -- Automating Cut-off for Multi-parameterized Systems -- Method for Formal Verification of Soft-Error Tolerance Mechanisms in Pipelined Microprocessors -- Formal Verification of Tokeneer Behaviours Modelled in fUML Using CSP -- Probability and Concurrency -- Model Checking Hierarchical Probabilistic Systems -- Trace-Driven Verification of Multithreaded Programs -- Closed Form Approximations for Steady State Probabilities of a Controlled Fork-Join Network -- Reasoning about Safety and Progress Using Contracts -- Program Analysis -- Abstract Program Slicing: From Theory towards an Implementation -- Loop Invariant Synthesis in a Combined Domain -- Software Metrics in Static Program Analysis -- A Combination of Forward and Backward Reachability Analysis Methods -- Model Checking -- Model Checking a Model Checker: A Code Contract Combined Approach -- On Symmetries and Spotlights -- Verifying Parameterised Systems -- A Methodology for Automatic Diagnosability Analysis -- Making the Right Cut in Model Checking Data-Intensive Timed Systems -- Comparison of Model Checking Tools for Information Systems -- Object Orientation and Model Driven Engineering -- A Modular Scheme for Deadlock Prevention in an Object-Oriented Programming Model -- Model-Driven Protocol Design Based on Component Oriented Modeling -- Laws of Pattern Composition -- Dynamic Resource Reallocation between Deployment Components -- Specification and Verification -- A Pattern System to Support Refining Informal Ideas into Formal Expressions -- Specification Translation of State Machines from Equational Theories into Rewrite Theories -- Alternating Interval Based Temporal Logics.

Sommario/riassunto

This book constitutes the refereed proceedings of the 12th International Conference on Formal Engineering Methods, ICFEM 2010, held in Shanghai, China, November 2010. The 42 revised full papers together with 3 invited talks presented were carefully reviewed and selected from 114 submissions. The papers address all current issues in formal methods and their applications in software engineering. They are organized in topical sections on theorem proving and decision procedures, web services and workflow, verification, applications of formal methods, probability and concurrency, program analysis, model checking, object orientation and model driven engineering, as well as specification and verification.
