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Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 2937
Disciplina	005.82
Soggetti	Software engineering Computer logic Computer science Programming languages (Electronic computers) Software Engineering Logics and Meanings of Programs Computer Science, general Programming Languages, Compilers, Interpreters
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Tutorial -- Security, Protocols, and Trust -- Security -- Security Types Preserving Compilation -- History-Dependent Scheduling for Cryptographic Processes -- Formal Methods I -- Construction of a Semantic Model for a Typed Assembly Language -- Rule-Based Runtime Verification -- On the Expressive Power of Canonical Abstraction -- Boolean Algebra of Shape Analysis Constraints -- Approximate Probabilistic Model Checking -- Completeness and Complexity of Bounded Model Checking -- Model Checking for Object Specifications in Hidden Algebra -- Formal Methods II -- Model Checking Polygonal Differential Inclusions Using Invariance Kernels -- Checking Interval Based Properties for Reactive Systems -- Widening

Operators for Powerset Domains -- Type Inference for Parameterized Race-Free Java -- Certifying Temporal Properties for Compiled C Programs -- Verifying Atomicity Specifications for Concurrent Object-Oriented Software Using Model-Checking -- Static Analysis versus Software Model Checking for Bug Finding -- Automatic Inference of Class Invariants -- Liveness with Invisible Ranking -- A Complete Method for the Synthesis of Linear Ranking Functions -- Symbolic Implementation of the Best Transformer -- Formal Methods III -- Constructing Quantified Invariants via Predicate Abstraction -- Analysis of Recursive Game Graphs Using Data Flow Equations -- Applying Jlint to Space Exploration Software -- Why AI + ILP Is Good for WCET, but MC Is Not, Nor ILP Alone -- A Grand Challenge for Computing: Towards Full Reactive Modeling of a Multi-cellular Animal.

Sommario/riassunto

This volume contains the proceedings of the 5th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI 2004), held in Venice, January 11–13, 2004, in conjunction with POPL 2004, the 31st Annual Symposium on Principles of Programming Languages, January 14–16, 2004. The purpose of VMCAI is to provide a forum for researchers from three communities—verification, model checking, and abstract interpretation—which will facilitate interaction, cross-fertilization, and the advance of hybrid methods that combine the three areas. With the growing need for formal tools to reason about complex, infinite-state, and embedded systems, such hybrid methods are bound to be of great importance. Topics covered by VMCAI include program verification, static analysis techniques, model checking, program certification, type systems, abstract domains, debugging techniques, compiler optimization, embedded systems, and formal analysis of security protocols. This year's meeting follows the four previous events in Port Jefferson (1997), Pisa (1998), Venice (2002), LNCS 2294 and New York (2003), LNCS 2575. In particular, we thank VMCAI 2003's sponsor, the Courant Institute at New York University, for allowing us to apply a monetary surplus from the 2003 meeting to this one. The program committee selected 22 papers out of 68 on the basis of three - views. The principal criteria were relevance and quality. The program of VMCAI 2004 included, in addition to the research papers, – a keynote speech by David Harel (Weizmann Institute, Israel) on A Grand Challenge for Computing: Full Reactive Modeling of a Multicellular Animal, – an invited talk by Dawson Engler (Stanford University, USA) on Static Analysis Versus Software Model Checking for Bug Finding, – an invited talk by Mooly Sagiv (Tel Aviv University, Israel) called On the Expressive Power of Canonical Abstraction, and – a tutorial by Joshua D. Guttman (MIT, USA) on Security, Protocols, and Trust. We would like to thank the Program Committee members and the reviewers, without whose dedicated effort the conference would not have been possible.
