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Collana	Theoretical Computer Science and General Issues, , 2512-2029 ; ; 7998
Disciplina	004.015113
Soggetti	Machine theory Artificial intelligence Computer science Software engineering Data protection Algorithms Formal Languages and Automata Theory Artificial Intelligence Computer Science Logic and Foundations of Programming Software Engineering Data and Information Security
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Invited Talks -- Applying Formal Methods in the Large -- Automating Theorem Proving with SMT -- Certifying Voting Protocols -- Invited Tutorials.-Counterexample Generation Meets Interactive Theorem Proving: Current Results and Future Opportunities -- Canonical Structures for the Working Coq User -- Regular Papers -- MaSh: Machine Learning for Sledgehammer -- Scalable LCF-Style Proof Translation -- Lightweight Proof by Reflection Using a Posteriori Simulation of Effectful Computation -- Automatic Data Refinement -- Data Refinement in Isabelle/HOL -- Light-Weight Containers for Isabelle: Efficient, Extensible, Nestable -- Ordinals in HOL: Transfinite Arithmetic up to (and Beyond) 1 -- Mechanising Turing Machines and

Computability Theory in Isabelle/HOL.-A Machine-Checked Proof of the Odd Order Theorem -- Kleene Algebra with Tests and Coq Tools for while Programs.-Program Analysis and Verification Based on Kleene Algebra in Isabelle/HOL -- Pragmatic Quotient Types in Coq -- Mechanical Verification of SAT Refutations with Extended Resolution -- Formalizing Bounded Increase -- Formal Program Optimization in Nuprl Using Computational Equivalence and Partial Types -- Type Classes and Filters for Mathematical Analysis in Isabelle/HOL -- Formal Reasoning about Classified Markov Chains in HOL -- Practical Probability: Applying pGCL to Lattice Scheduling -- Adjustable References -- Handcrafted Inversions Made Operational on Operational Semantics -- Circular Coinduction in Coq Using Bisimulation-Up-To Techniques -- Program Extraction from Nested Definitions -- Subformula Linking as an Interaction Method -- Automatically Generated Infrastructure for De Bruijn Syntaxes -- Shared-Memory Multiprocessing for Interactive Theorem Proving -- A Parallelized Theorem Prover for a Logic with Parallel Execution -- Rough Diamonds -- Communicating Formal Proofs: The Case of Flyspeck -- Square Root and Division Elimination in PVS -- The Picard Algorithm for Ordinary Differential Equations in Coq -- Stateless Higher-OrderLogic with Quantified Types -- Implementing Hash-Consed Structures in Coq -- Towards Certifying Network Calculus -- Steps towards Verified Implementations of HOL Light.

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#### Sommario/riassunto

This book constitutes the refereed proceedings of the 4th International Conference on Interactive Theorem Proving, ITP 2013, held in Rennes, France, in July 2013. The 26 regular full papers presented together with 7 rough diamond papers, 3 invited talks, and 2 invited tutorials were carefully reviewed and selected from 66 submissions. The papers are organized in topical sections such as program verification, security, formalization of mathematics and theorem prover development.

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