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Soggetti	Computers Computers, Special purpose Computer system failures Software engineering Computer logic Computer simulation Theory of Computation Special Purpose and Application-Based Systems System Performance and Evaluation Software Engineering Logics and Meanings of Programs Simulation and Modeling
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Regular Papers -- Lazy Rectangular Hybrid Automata -- Affine Hybrid Systems -- Abstraction by Projection and Application to Multi-affine Systems -- Observability of Switched Linear Systems -- Inference Methods for Autonomous Stochastic Linear Hybrid Systems -- Synthesis for Idle Speed Control of an Automotive Engine -- Network Congestion Alleviation Using Adjoint Hybrid Control: Application to

Highways -- Understanding the Bacterial Stringent Response Using Reachability Analysis of Hybrid Systems -- A SAT-Based Hybrid Solver for Optimal Control of Hybrid Systems -- Incremental Search Methods for Reachability Analysis of Continuous and Hybrid Systems -- Discrete and Hybrid Nonholonomy -- Approximations of the Rate of Growth of Switched Linear Systems -- The Hybrid Guaranteed Capture Basin Algorithm in Economics -- Staying Alive as Cheaply as Possible -- On O-Minimal Hybrid Systems -- Extended Stochastic Hybrid Systems and Their Reachability Problem -- On the Controllability of Bimodal Piecewise Linear Systems -- Observability of Piecewise-Affine Hybrid Systems -- Non-deterministic Temporal Logics for General Flow Systems -- Almost ASAP Semantics: From Timed Models to Timed Implementations -- Discrete State Estimators for a Class of Hybrid Systems on a Lattice -- Benchmarks for Hybrid Systems Verification -- On the Optimal Control of Switch-Mode DC-DC Converters -- Event-Driven Programming with Logical Execution Times -- A Stochastic Hybrid Model for Air Traffic Control Simulation -- Stochastic Hybrid Systems: Application to Communication Networks -- Rigorous Modeling of Hybrid Systems Using Interval Arithmetic Constraints -- Modeling Subtilin Production in *Bacillus subtilis* Using Stochastic Hybrid Systems -- Sound Code Generation from Communicating Hybrid Models -- Multi-Parametric Toolbox (MPT) -- Dynamic Partitioning of Large Discrete Event Biological Systems for Hybrid Simulation and Analysis -- Safety Verification of Hybrid Systems Using Barrier Certificates -- Piecewise-Linear Output-Error Methods for Parameter Estimation in Direction-Dependent Processes -- A Spatial Logic for the Hybrid λ -Calculus -- Full Paper Sheet Control Using Hybrid Automata -- Constructing Invariants for Hybrid Systems -- Bisimulation of Dynamical Systems -- Control Design for a Hybrid Dynamic System: A NASA Life Support System -- Non-concurrent Error Detection and Correction in Switched Linear Controllers -- Nonlinear Systems: Approximating Reach Sets -- On Practical Stability and Stabilization of Hybrid and Switched Systems -- A Numerical Technique for Stability Analysis of Linear Switched Systems -- Asymptotic Stability and Boundedness of Delay Switching Diffusions -- Invited Contribution -- Symbolic Systems Biology: Hybrid Modeling and Analysis of Biological Networks.

Sommario/riassunto

This volume contains the proceedings of the 7th Workshop on Hybrid Systems: Computation and Control (HSCC 2004) held in Philadelphia, USA, from March 25 to 27, 2004. The annual workshop on hybrid systems attracts researchers from academia and industry interested in modeling, analysis, and implementation of dynamic and reactive systems involving both discrete and continuous behaviors. The previous workshops in the HSCC series were held in Berkeley, USA (1998), Nijmegen, The Netherlands (1999), Pittsburgh, USA (2000), Rome, Italy (2001), Palo Alto, USA (2002), and Prague, Czech Republic (2003). This year's HSCC was organized in cooperation with ACM SIGBED (Special Interest Group on Embedded Systems) and was technically co-sponsored by the IEEE Control Systems Society. The program consisted of 4 invited talks and 43 regular papers selected from 117 regular submissions. The program covered topics such as tools for analysis and verification, control and optimization, modeling, and engineering applications, as in past years, and emerging directions in programming language support and implementation. The program also contained one special session focusing on the interplay between biomolecular networks, systems biology, formal methods, and the control of hybrid systems.
