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Nota di contenuto	A Tool-Supported Proof System for Multithreaded Java -- Abstract Behavior Types: A Foundation Model for Components and Their Composition -- Understanding UML: A Formal Semantics of Concurrency and Communication in Real-Time UML -- Live and Let Die: LSC-Based Verification of UML-Models -- Reactive Animation -- Model-Checking Middleware-Based Event-Driven Real-Time Embedded Software -- Equivalent Semantic Models for a Distributed Dataspace Architecture -- Java Program Verification Challenges -- ToolBus: The Next Generation -- High-Level Specifications: Lessons from Industry -- How the Design of JML Accommodates Both Runtime Assertion Checking and Formal Verification -- Finding Implicit Contracts in .NET Components -- From Co-algebraic Specifications to Implementation:

The Mihda Toolkit -- A Calculus for Modeling Software Components -- Specification and Inheritance in CSP-OZ -- Model-Based Testing of Object-Oriented Systems -- Concurrent Object-Oriented Programs: From Specification to Code -- Design with Asynchronously Communicating Components -- Composition for Component-Based Modeling -- Games for UML Software Design -- Making Components Move: A Separation of Concerns Approach.

Sommario/riassunto

Large and complex software systems provide the necessary infrastructure in all industries today. In order to construct such large systems in a systematic manner, the focus in the development methodologies has switched in the last two decades from functional issues to structural issues: both data and functions are encapsulated into software units that are integrated into large systems by means of various techniques supporting reusability and modifiability. This encapsulation principle is essential to both the object-oriented and the more recent component-based software engineering paradigms. Formal methods have been applied successfully to the verification of medium-sized programs in protocol and hardware design. However, their application to large systems requires the further development of specification and verification techniques supporting the concepts of reusability and modifiability. In order to bring together researchers and practitioners in the areas of software engineering and formal methods, we organized the 1st International Symposium on Formal Methods for Components and Objects (FMCO) in Leiden, The Netherlands, November 5–8, 2002. The program consisted of invited tutorials and more technical presentations given by leading experts in the fields of Theoretical Computer Science and Software Engineering. The symposium was attended by more than 100 people. This volume contains the contributions of the invited speakers to FMCO 2002. We believe that the presented material provides a unique combination of ideas on software engineering and formal methods which we hope will be an inspiration for those aiming at further bridging the gap between the theory and practice of software engineering.
