Record Nr. UNINA9910777496303321 Mathematical frameworks for component software [[electronic resource] Titolo ]: models for analysis and synthesis // [edited by] Zhiming Liu, He **Jifeng** Hackensack, NJ,: World Scientific, c2006 Pubbl/distr/stampa **ISBN** 1-281-37322-2 9786611373221 981-277-283-9 Descrizione fisica 1 online resource (368 p.) Collana Series on component-based software development;; v. 2 Altri autori (Persone) HeJifeng <1943-> LiuZhiming <1961-> Disciplina 005.3 Soggetti Component software - Mathematical models Computer software Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto ; 1. Temporal Specification of Contents : Preface Component Based Systems with Polymorphic Dynamic Reconfiguration ; 1.1. Introduction ; 1.2. A Model of Reconfigurable Component Based Systems ; 1.3. A Temporal Specification Language ; 1.4. : Bibliography Conclusions 2. Coordinated Composition of Software Components ; 2.2. Components and Their 2.1. Introduction ; 2.3. System Composition Composition Example ; 2.4. Constraint Automata ; 2.5. ABT as Relations on Timed Data Streams ; 2.7. Time/Temperature Display Coordinator : 2.6. Reo Bibliography 2.8. Conclusions : 3. On the Semantics of Componentware: A Coalgebraic Persecutive : 3.1. Introduction ; 3.2. Why Coalgebra Matters ; 3.3. Components as Coalgebras and their Calculi 3.4. Application to the Semantics of UML 3.5. Application to the Design of Component Repositories 3.6. Conclusions and Further Work

Bibliography ; 4. A Theory for Requirements Specification and Architecture Design of Multi-Functional Software Systems ; 4.1. Motivation ; 4.2. Components Interfaces and Services 4.3. Specifying Structuring Relating and Combining Services 4.4. Architectures: Composing Components and Services ; 4.5. Summary and Outlook ; Bibliography ; 5. Component: From Mobile to Channels 5.1. Introduction ; 5.2. UML ; 5.3. The component model

## Sommario/riassunto

The range of components technology is both wide and diverse, but some common understanding is emerging through the ideas of model-based development. These include the notions of interfaces, contracts, services, connectors and architectures. Key issues in the application of the technology are becoming clearer, including the consistent integration of different views of a component, component composition, component coordination and transformation for platforms. However, we still know little about theories that support analysis and synthesis of component-based systems. The distinct feature of thi

5.4. Inter-component coordination via mobile channels