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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Component-Based Software Development: Case Studies; Contents; Preface; 1. A Survey of Proposals for Architecting Component Software; 1.1 Introduction; 1.2 COTS Software Components; 1.2.1 Component Models; 1.2.2 COTS Components and the Software Development Process; 1.2.3 The Maturity of COTS Products and COTS-based Systems; 1.2.4 COTS Components in Real-time and Embedded systems; 1.2.5 Risks and Benefits of COTS Components; 1.3 Components and Software Architecture; 1.3.1 Integration of Software Components; 1.3.2 Software Components and Product line Architecture 1.4 COTS Components and Software Architecture 1.4.1 COTS Components and Product line Architecture; 1.4.2 MOTS Frameworks and COTS Components; 1.4.3 Desirable Properties for Component Software Architecture; 1.4.4 Patterns for the Architecture of COTS-intensive Systems; 1.4.4.1 Middleware Layers; 1.4.5 COTS Component Integration; 1.4.6 Architectural Mismatch; 1.4.7 Maintainability of Component Software Architecture; 1.4.8 Architectural Views and COTS Components; 1.4.9 UML-RT and COTS Component Integration; 1.4.10 COTS Components in the Layers Associated with the Infrastructure Module

1.5 Discussion and ConclusionsReferences; 2. Describing Specifications and Architectural Requirements of COTS Components; 2.1 Introduction; 2.2 Definition of Commercial Components; 2.2.1 Component Interfaces; 2.2.2 Semantic and Protocol Levels; 2.2.3 Interface Notation; 2.2.4 COTS Documents; 2.3 A COTS-based Application Example; 2.4 Software Architecture; 2.5 UML Real-Time; 2.6 Composing the Software Architecture; 2.6.1 The GTS Software Architecture; 2.6.2 Mapping the UML-RT GTS Example to UML Standard; 2.6.3 Including Information into Capsules

2.7 Integrating the Architecture into other CBD Methodologies2.8 Concluding Remarks; References; 3. Definition of COTS Software Component Acquisition Process - The Case of a Telecommunication Company; 3.1 Introduction; 3.2 Overview of the Case; 3.3 Towards the CSCA Process - Analysis of Existing Models; 3.3.1 Overview of the Reference Models; 3.3.2 Acquisition Process Framework based on the Existing Models; 1. Planning; 2. Contracting; 3. Delivery and Use of the Component; 3.4 Requirements for the CSCA Process - the Purchaser's Perspective; 3.4.1 Main concerns Revealed by the Interviews Contracting and negotiationEvaluation of components and suppliers; Management of components and supplier relationships; 3.5 Illustration of the Defined CSCA Process Framework; 3.6 Evaluation of the Process Model - The Server Project; 3.6.1 Feedback from the Evaluation; 3.6.2 Conclusions - General Implications; References; 4. The Library Systems Product Line: A Case Study Demonstrating the KobrA Method; 4.1 Introduction; 4.2 KobrA Components; 4.2.1 Modeling Dimensions; 4.2.2 Containment; 4.2.2.1 Component Specification versus Realization; 4.2.2.2 Containment Trees; 4.2.3 Genericity 4.2.3.1 Generic Components

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Pubbl/distr/stampa	Weinheim, Germany, : Wiley-VCH, c2011
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Edizione	[4th ed.]
Descrizione fisica	1 online resource (452 p.)
Altri autori (Persone)	Vaz JuniorMiguel NetoE. A. de Souza (Eduardo) Munoz-RojasPablo A
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Soggetti	Materials - Mathematical models Finite element method
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Nota di contenuto	Advanced Computational Materials Modeling: From Classical to Multi-Scale Techniques; Contents; Preface; List of Contributors; 1 Materials Modeling - Challenges and Perspectives; 1.1 Introduction; 1.2 Modeling Challenges and Perspectives; 1.2.1 Mechanical Degradation and Failure of Ductile Materials; 1.2.1.1 Remarks; 1.2.2 Modeling of Cellular Structures; 1.2.2.1 Remarks; 1.2.3 Multiscale Constitutive Modeling; 1.3 Concluding Remarks; Acknowledgments; References; 2 Local and Nonlocal Modeling of Ductile Damage; 2.1 Introduction; 2.2 Continuum Damage Mechanics; 2.2.1 Basic Concepts of CDM 2.2.2 Ductile Plastic Damage2.3 Lemaitre's Ductile Damage Model; 2.3.1 Original Model; 2.3.1.1 The Elastic State Potential; 2.3.1.2 The Plastic State Potential; 2.3.1.3 The Dissipation Potential; 2.3.1.4 Evolution of Internal Variables; 2.3.2 Principle of Maximum Inelastic Dissipation; 2.3.3 Assumptions Behind Lemaitre's Model; 2.4 Modified Local Damage Models; 2.4.1 Lemaitre's Simplified Damage Model; 2.4.1.1 Constitutive Model; 2.4.1.2 Numerical Implementation; 2.4.2

Damage Model with Crack Closure Effect; 2.4.2.1 Constitutive Model; 2.4.2.2 Numerical Implementation  
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2.6.3.1 Damage Prediction Using the Lemaitre's Simplified Model2.6.3.2 Damage Prediction Using the Lemaitre's Model with Crack Closure Effect; 2.7 Concluding Remarks; Acknowledgments; References; 3 Recent Advances in the Prediction of the Thermal Properties of Metallic Hollow Sphere Structures; 3.1 Introduction; 3.2 Methodology; 3.2.1 Lattice Monte Carlo Method; 3.2.2 Finite Element Method; 3.2.2.1 Basics of Heat Transfer; 3.2.2.2 Weighted Residual Method; 3.2.2.3 Discretization and Principal Finite Element Equation; 3.2.3 Numerical Calculation Models  
3.3 Finite Element Analysis on Regular Structures3.4 Finite Element Analysis on Cubic-Symmetric Models; 3.5 LMC Analysis of Models of Cross Sections; 3.5.1 Modeling; 3.5.2 Results; 3.6 Computed Tomography Reconstructions; 3.6.1 Computed Tomography; 3.6.2 Numerical Analysis; 3.6.2.1 Microstructure; 3.6.2.2 Mesostructure; 3.6.3 Results; 3.7 Conclusions; References; 4 Computational Homogenization for Localization and Damage; 4.1 Introduction; 4.1.1 Mechanics Across the Scales; 4.1.2 Some Historical Notes on Homogenization; 4.1.3 Separation of Scales  
4.1.4 Computational Homogenization and Its Application to Damage and Fracture

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## Sommario/riassunto

With its discussion of strategies for modeling complex materials using new numerical techniques, mainly those based on the finite element method, this monograph covers a range of topics including computational plasticity, multi-scale formulations, optimization and parameter identification, damage mechanics and nonlinear finite elements.

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