Software exists in a wide array of products, ranging from toys, entertainment systems, medical systems, and home appliances to large-scale products such as aircraft and communication systems.

Knowledge Engineering for Software Development Life Cycles: Support Technologies and Applications bridges the best practices and design principles successfully employed over last two decades with modern Knowledge Engineering (KE), which has provided some of the most valuable techniques and tools to support encoding knowledge and experiences. Through its identification and exploration of software development practices, captured as software guidelines that can be represented to automated software development, decision making, and knowledge management, this book brings industry and academia together to address the need for the growing applications and supporting knowledge-based approaches to software development.

Topics Covered:

- Automated code generation techniques from requirements and design
- Automated support for reusability, extensibility, and refactoring
- Best practice software guidelines
- Intelligent software intensive applications
- KE for Web services and SOA
- KE support for requirements, architecture, components
- KE support for software process improvement
- KE support for software testing, quality and metrics
- Knowledge engineering support for software reuse
- Knowledge Management (KM) for software product line
- Requirements engineering and knowledge management

Print: US $180.00  |  Perpetual: US $255.00  |  Print + Perpetual: US $360.00

Muthu Ramachandran is currently a Principal Lecturer in Computing and Information Systems Group, The Faculty of Arts, Environment and Technology, Leeds Metropolitan University, Leeds, UK. Previously, he spent nearly eight years in industrial research (Philips Research Labs and Volantis Systems Ltd, Surrey, UK) where he worked on software architecture, reuse, and testing. Prior to that, he was teaching at Liverpool John Moores University and received his PhD from Lancaster University. His first career started as a research scientist from India Space Research Labs where he worked on real time systems development projects. Muthu is an author of a book called Software Components: Guidelines and Applications, (Nova Publishers, NY, USA, 2008). He is also an edited co-author of a book, Handbook of Research in Software Engineering, (IGI, 2010). He has also widely published articles on journals, chapters, and conferences on various advanced topics on software engineering and education. He did his Masters degrees from Indian Institute of Technology, Madras and from Madurai Kamaraj University, Madurai, India. Muthu is also a member of various professional organisations and computer societies: IEEE, ACM, BCS, Fellow of HEA.

An Excellent Addition to Your Library!
Released: April 2011

Knowledge Engineering for Software Development Life Cycles: Support Technologies and Applications

Muthu Ramachandran (Leeds Metropolitan University, UK)
Section 1: Requirements Engineering and Knowledge Engineering

Chapter 1
Modern Approaches to Software Engineering in the Compositional Era
Dogru Ali (Middle Eastern Technical University, Turkey)
Senkal Pinar (Middle Eastern Technical University, Turkey)
Kayra Ogur (Middle Eastern Technical University, Turkey)

Chapter 2
Natural Language Processing Techniques in Requirements Engineering
Yilmaz A. Egemen (Ankara University Faculty of Engineering, Turkey)
Yilmaz I. Berk (Ankara University Faculty of Engineering, Turkey)

Chapter 3
Requirement Management and Link with Architecture and Components
Boulanger Jean-Louis (CERTIFER, France)

Chapter 4
Managing Requirements Elucidation Knowledge using a Spatial Hypertext Wiki
Sollis Carlos (Lero, Ireland)
Ali Nosat (Lero, Ireland)

Chapter 5
Knowledge Management in E-Commerce
Mahmood Zaigham (University of Derby, UK)

Chapter 6
Malaysia System for Supporting the Knowledge Management in the Software Process
Norto Francisco Milton Mendes (Federal University of the Semi-Arid, Brazil)
Moraes Marial José de Oliveira (State University of the Ceará, Brazil)

Section 2: Design Patterns, Components, Services and Reuse

Chapter 7
Towards Understanding the Use of Patterns in Software Engineering
Kamthan Pankaj (Concordia University, Canada)

Chapter 8
Implications of Markup on the Description of Software Patterns
Kamthan Pankaj (Concordia University, Canada)

Chapter 9
Empowering Web Service Search with Business Know-How:
Mirbel Isabelle (Université de Nice Sophia-Antipolis, France)
Crescenzo Pierre (Université de Nice Sophia-Antipolis, France)
Cerezo Nadia (Université de Nice Sophia-Antipolis, France)

Chapter 10
Knowledge Engineering Support for Agent-Oriented Software Reuse
Girardi Rosario (Federal University of Maranhão, Brazil)
Leite Adriana (Federal University of Maranhão, Brazil)

Section 3: Testing, Metrics and Process Improvement

Chapter 11
Software Reusability Estimation Model Using Metrics Governing Design Architecture
Nair Gopalakrishnan T.R. (Research and Industry Incubation Centre, Dayananda Sagar Institutions, India)
Selvarani R (Research and Industry Incubation Centre, Dayananda Sagar Institutions, India)

Chapter 12
Knowledge Engineering Support for Intelligent Software Test Optimization
Mala D Jeya (Thiagarajar College of Engineering, India)

Chapter 13
A Framework for Internet Security Assessment and Improvement Process
Ramachandran Mathu (Leeds Metropolitan University, UK)
Mahmood Zaigham (University of Derby, UK)

Chapter 14
Software Metrics and Design Quality in Object-Oriented Paradigm
Nair Gopalakrishnan T.R. (Research and Industry Incubation Centre, Dayananda Sagar Institutions, India)
Selvarani R (Research and Industry Incubation Centre, Dayananda Sagar Institutions, India)

Chapter 15
Knowledge Management in Software Process Improvement:
Basti Shuh Bin (Lero, Dublin City University, Ireland & Universiti Teknologi PETRONAS, Malaysia)
O'Connor Rory V. (Lero, Dublin City University, Ireland)

Chapter 16
Software Process Model using Dynamic Bayesian Networks
Schulz Thomas (Robert Bosch GmbH, Germany)
Radlinski Lukasz (University of Szczecin, Poland)
Gorges Thomas (Robert Bosch GmbH, Germany)
Rosenstiel Wolfgang (University of Tübingen, Germany)

Order Your Copy Today!

Name: ____________________________________ _____________ _ _
Organization: _________________________________________ _ _
Address: ________________________________ ____________ __ _
City, State, Zip: _____________________________________ __ __
Country: ________________________________________________ __ _ ___
Tel: ________________________________________________ __
Fax: _____________________________________________ __ ___
E-mail: ____________________________________________ __ __

☐ Enclosed is check payable to IGI Global in US Dollars, drawn on a US-based bank

☐ Credit Card ☐ Mastercard ☐ Visa ☐ Am. Express

3 or 4 Digit Security Code: _____________________________________ __ __

Name on Card: ________________________________________________ __
Account #: ______________________________________________________
Expiration Date: _______________________________________________ _____