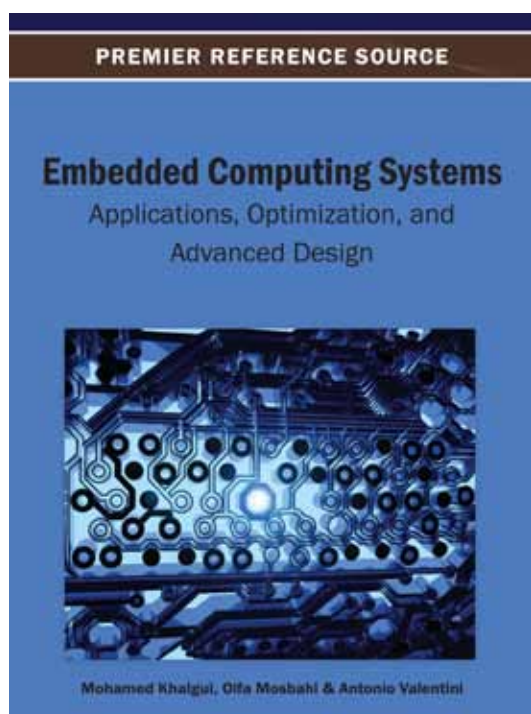


An Excellent Addition to Your Library!

Released: April 2013

Embedded Computing Systems: Applications, Optimization, and Advanced Design



Mohamed Khalgui (Xidian University, China),
Olfa Mosbahi (University of Carthage, Tunisia) and
Giorgio Valentini (Università di Milano, Italy)

Embedded computing systems play an important and complex role in the functionality of electronic devices. With our daily routines becoming more reliant on electronics for personal and professional use, the understanding of these computing systems is crucial.

Embedded Computing Systems: Applications, Optimization, and Advanced Design brings together theoretical and technical concepts of intelligent embedded control systems and their use in hardware and software architectures. By highlighting formal modeling, execution models, and optimal implementations, this reference source is essential for experts, researchers, and technical supporters in the industry and academia.

Topics Covered:

- Embedded Computing Systems
- Execution Models
- Hardware Architectures
- Industrial Networks
- Modeling & Verification
- Software Engineering

ISBN: 9781466639225; © 2013; 356 pp.

Print: US \$195.00 | Perpetual: US \$295.00 | Print + Perpetual: US \$390.00

Pre-pub Discount:*

Print: US \$185.00 | Perpetual: US \$280.00

* Pre-pub price is good through one month after publication date.

Market: This premier publication is essential for all academic and research library reference collections. It is a crucial tool for academicians, researchers, and practitioners. Ideal for classroom use.

Mohamed Khalgui is a researcher at Xidian University in China. He was a full-time researcher in computer science at Martin Luther University in Germany, a part-time researcher at ITIA-CNR Institute in Italy, a collaborator with SEG Research Group in Greece, and a temporary lecturer at Henri Poincaré University in France. Dr. Khalgui obtained the Bachelor degree in Computer Science at Tunis University in 2001. The master degree was obtained in telecommunication and services at Henri Poincaré University in 2003. He made research activities in computer science at INRIA Institute to obtain the PhD at the French Polytechnical Institute of Lorraine in 2007. Dr. Khalgui activates in several European Projects and also in other interesting international collaborations. He's currently the Head of ICTICA.



www.igi-global.com

Publishing Academic Excellence
at the Pace of Technology Since 1988

- Chapter 1
Modeling and Scheduling of Crude Oil Operations in Refinery:
Wu NaiQi (Guangdong University of Technology, China)
Zhou MengChu (New Jersey Institute of Technology, USA)
Chu Feng (Université d'Evry Val d'Essonne, France)
Mammar Said (Université d'Evry Val d'Essonne, France)
- Chapter 2
Formal Reliability Analysis of Embedded Computing Systems
Hasan Osman (National University of Sciences and Technology, Pakistan)
Tahar Sofène (Concordia University, Canada)
- Chapter 3
Liveness, Deadlock-Freeness, and Siphons
Barkaoui Kamel (CEDRIC-CNAM – Paris, France)
- Chapter 4
Model-Based Functional Safety Analysis and Architecture Optimisation
Parker David (University of Hull, UK)
Walker Martin (University of Hull, UK)
Papadopoulos Yiannis (University of Hull, UK)
- Chapter 5
Expressing and Validating OCL Constraints using Graphs
Zoubeir Najet (Institut Supérieur d'Informatique, Tunisia)
Khalfallah Adel (Institut Supérieur d'Informatique, Tunisia)
Benahmed Samir (Faculté des Sciences de Tunis, Tunisia)
- Chapter 6
A UML-Compliant Approach for Intelligent Reconfiguration of Embedded Control Systems
Ali Amen Ben Hadj (Tunis El Manar University, Tunisia)
Khalgui Mohamed (Xidian University, China)
Ben Ahmed Samir (Tunis El Manar University, Tunisia)
Valentini Antonio (O3neida Europe, Belgium)
- Chapter 7
Development of Automated Systems using Proved B Patterns
Mosbahi Olfa (Tunis El Manar University, Tunisia)
Khalgui Mohamed (Tunis El Manar University, Tunisia)
Li Zhiwu (Xidian University, China)
- Chapter 8
Emerging Real-Time Methodologies
Buttazzo Giorgio C. (Scuola Superiore Sant'Anna, Italy)
- Chapter 9
Merging and Splitting Petri Net Models within Distributed Embedded Controller Design
Gomes Luis (Universidade Nova de Lisboa, Portugal)
Costa Anikó (Universidade Nova de Lisboa, Portugal)
Barros João Paulo (Instituto Politécnico de Beja, Portugal)
Moutinho Filipe (Universidade Nova de Lisboa, Portugal)
Pereira Fernando (Instituto Politécnico de Lisboa, Portugal)
- Chapter 10
Safety Reconfiguration of Embedded Control Systems
Gharbi Atef (University of Carthago, Tunisia)
Gharsellaoui Hamza (University of Carthago, Tunisia)
Khalgui Mohamed (University of Carthago, Tunisia & CNR Research Council, Italy & Xidian University, China)
Valentini Antonio (O3neida Europe, Belgium)
- Chapter 11
Task Scheduling under Uncertain Timing Constraints in Real-Time Embedded Systems
Muhuri Pranab K. (South Asian University, India)
Shukla K. K. (Banaras Hindu University, India)
- Chapter 12
New Optimal Solutions for Real-Time Reconfigurable Periodic Asynchronous OS Tasks with Minimizations of Response Times
Gharsellaoui Hamza (University of Carthago, Tunisia)
Gharbi Atef (University of Carthago, Tunisia)
Mosbahi Olfa (University of Carthago, Tunisia & CNR Research Council, Italy & Xidian University, China)
Khalgui Mohamed (University of Carthago, Tunisia & CNR Research Council, Italy & Xidian University, China)
Valentini Antonio (O3neida Europe, Belgium)
- Chapter 13
Task Migration in Embedded Systems:
Jemai Abderrazak (University of Tunis El Manar, Tunisia & University of Carthage, Tunisia)
Smiri Kamel (University of Tunis El Manar, Tunisia & University of Kairouan, Tunisia)
Smei Habib (ISET de Rades, Tunisia)
- Chapter 14
Wireless IEEE 802.11-Based Networking Approaches for Industrial Networked Systems
Morales Ricardo (Universidade Federal de Santa Catarina, Brazil)
Vasques Francisco (Universidade do Porto, Portugal)
- Chapter 15
Hardware/Software Implementation for Wireless Sensor Network Applications
Jmal Mohamed Wassim (University of Sfax, Tunisia)
Ghorbel Oussema (University of Sfax, Tunisia)
Gaddour Olfa (University of Sfax, Tunisia)
Abid Mohamed (University of Sfax, Tunisia)
- Chapter 16
Hybrid FlexRay/CAN Automotive Networks
Lange Rodrigo (Federal University of Santa Catarina, Brazil)
Silva de Oliveira Rômulo (Federal University of Santa Catarina, Brazil)
- Chapter 17
Emerging Technologies for Industrial Wireless Sensor Networks
Silva Ivanovitch (Federal University of Rio Grande do Norte, Brazil)
Guedes Luiz Affonso (Federal University of Rio Grande do Norte, Brazil)
Portugal Paulo (University of Porto, Portugal)
- Chapter 18
Numerical Simulation of Distributed Dynamic Systems using Hybrid Tools of Intelligent Computing
Bellamine Fethi H. (University of Waterloo, Canada & National Institute of Applied Sciences and Technologies, Tunisia)
Gdouda Aymen (National Institute of Applied Sciences and Technologies, Tunisia)
- Chapter 19
Multi-Core Embedded Systems
Bose Ricardo Chessini (University of Mons, Belgium)
Fourtounis Georgios (University of Mons, Belgium)
Harb Naim (University of Mons, Belgium)
Jolczyk Laurent (University of Mons, Belgium)
Possa Paulo Da Cunha (University of Mons, Belgium)
Valderrama Carlos (University of Mons, Belgium)
- Chapter 20
Securing Embedded Computing Systems through Elliptic Curve Cryptography
Konstantinou Elisavet (University of the Aegean, Greece)
Nastou Panayotis E. (University of the Aegean, Greece)
Stamatiou Yannis C. (University of Patras, Greece)
Zaroliagis Christos (University of Patras, Greece)

Chapter 21

Security and Cryptographic Engineering in Embedded Systems

Fournaris Apostolos P. (University of Patras, Greece & Technological Educational Institute of Patras, Greece)

Kitsos Paris (Technological Educational Institute of Patras, Greece & Hellenic Open University, Greece)

Sklavos Nicolas (Technological Educational Institute of Patras, Greece)

Chapter 22

Flash-Based Storage in Embedded Systems

Olivier Pierre (Université de Bretagne Occidentale, France)

Boukhobza Jalil (Université de Bretagne Occidentale, France)

Senn Eric (Université de Bretagne Sud, France)

Chapter 23

EAST-ADL

Blom Hans (Volvo Technology, Sweden)

Lönn Henrik (Volvo Technology, Sweden)

Hagl Frank (Continental Automotive GmbH, Germany)

Papadopoulos Yiannis (University of Hull, UK)

Reiser Mark-Oliver (Technische Universität Berlin, Germany)

Sjöstedt Carl-Johan (KTH Royal Institute of Technology, Sweden)

Chen De-Jiu (KTH Royal Institute of Technology, Sweden)

Tagliabò Fulvio (Centro Ricerche Fiat, Italy)

Torchiaro Sandra (Centro Ricerche Fiat, Italy)

Tucci Sara (CEA LIST DILS, France)

Kolagari Ramin Tavakoli (Ohm Hochschule, 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: _____