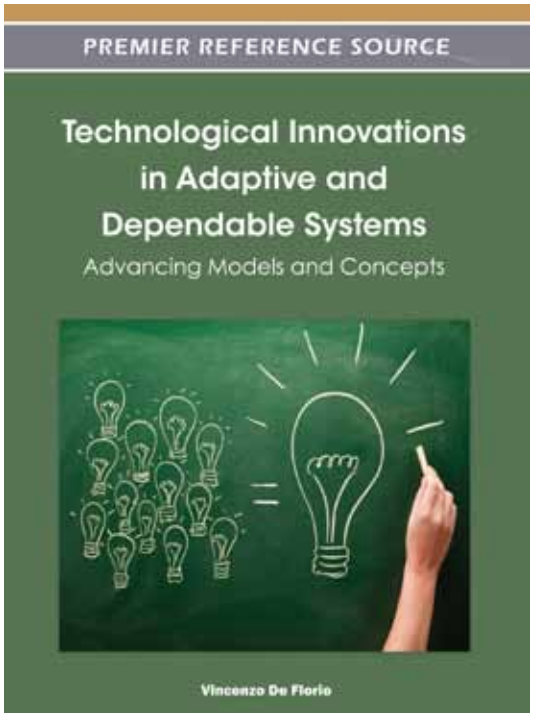
An Excellent Addition to Your Library!

Released: March 2012

Technological Innovations in Adaptive and Dependable Systems: Advancing Models and Concepts



Vincenzo De Florio
(University of Antwerp and IBBT, Belgium)

As systems become more prevalent and more complex, resilient adaptive systems are crucial when systems are needed in environments where change is the rule rather than the exception.

Technological Innovations in Adaptive and Dependable Systems: Advancing Models and Concepts provides high quality, effective approaches to design, develop, maintain, evaluate, and benchmark adaptive and dependable systems that are built to sustain quality of service and experience despite the occurrence of potentially significant and sudden changes or failures in their infrastructure and surrounding environments. Providing academicians, practitioners, and researchers with insight, this book contains useful software and hardware aspects, conceptual models, applied and theoretical approaches, paradigms, and other technological innovations.

Topics Covered:

- Adaptive and context-aware multimedia
- Adaptive System Functions
- Architecture-based adaptation
- Autonomic applications
- Autonomic business process execution
- Autonomous and adaptive systems in robotics
- Personalization
- Recovery-oriented computing
- Resilience engineering
- Scalable adaptability and dependability

ISBN: 9781466602557; © 2012; 425 pp.
Print: US $195.00 | Perpetual: US $295.00 | Print + Perpetual: US $390.00

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

Vincenzo De Florio obtained his "Laurea in Scienze dell'Informazione" (MSc, computer science) from the University of Bari (Italy, 1987) and his PhD in engineering from the University of Leuven (Belgium, 2000). He was researcher for eight years and part-time professor for three years with the University of Leuven. He is currently a researcher with the Performance Analysis of Telecommunication Systems (PATS) research group at the University of Antwerp, where he is responsible for PATS' branch on adaptive and dependable systems. Vincenzo De Florio is also a researcher of IBBT, the Flemish Interdisciplinary Institute for BroadBand Technology. He published about seventy reviewed research papers, fifteen of which in international research journals, and the book "Application-layer fault-tolerance protocols", edited by IGI Global. He is co-chair of workshop ADAMUS (the third Workshop on Adaptive and DependAble Mobile and Ubiquitous Systems, http://www.adamus.ua.ac.be), and editor-in-chief of the International Journal of Adaptive, Resilient and Autonomic Systems.

Section 1: Middleware Based Adaptive and Dependable Systems

Chapter 1
Resilient and Timely Event Dissemination in Publish/Subscribe Middleware
Esposito Christian (University of Napoli "Federico II", Italy)
Cotroneo Domenico (University of Napoli "Federico II", Italy)

Chapter 2
Towards Adaptive and Scalable Context Aware Middleware
Corradi Antonio (Università di Bologna, Italy)
Fanelli Mario (Università di Bologna, Italy)
Foschini Luca (Università di Bologna, Italy)

Chapter 3
Dynamic Reconfiguration of Middleware for Ubiquitous Computing
Corradi Antonio (University of Bologna, Italy)
Lodolo Enrico (University of Bologna, Italy)
Monti Stefano (University of Bologna, Italy)

Chapter 4
A Multi-User Ad-Hoc Resource Manager for Public Urban Areas
Huerta-Canepa Gonzalo (KAIST, South Korea)
Lee Dongman (KAIST, South Korea)

Section 2: Adaptation in Wireless Sensor Networks

Chapter 5
Adaptive Modeling of Routing Algorithms for Wireless Sensor Networks
Cinque Marcello (Università di Napoli Federico II, Italy)
Di Martino Catello (Università di Napoli Federico II, Italy)

Chapter 6
iCAAS:
Di Martino Catello (Università di Napoli Federico II, Italy)
D'Avino Gabriele (STRAGO Spa, Italy)
Testa Alessandro (Università di Napoli Federico II, Italy)

Chapter 7
Self-Adapting Event Configuration in Ubiquitous Wireless Sensor Networks
Ortmann Steffen (IHP microelectronics, Germany)
Maaser Michael (IHP microelectronics, Germany)
Langendoerfer Peter (IHP microelectronics, Germany)

Section 3: Resilient Computing: Reflections and Challenges

Chapter 8
Technological and Educational Challenges of Resilient Computing
Simoncini Luca (University of Pisa, Italy)

Chapter 9
Adaptation and Dependability and Their Key Role in Modern Software Engineering
De Florio Vincenzo (University of Antwerp, Belgium)
Blondia Chris (University of Antwerp, Belgium)

Section 4: Algorithms

Chapter 10
Optimizing User Quality of Experience through Overlay Routing, Bandwidth Management and Dynamic Trans-Coding
Wijnants Maarten (EDM - Hasselt University - tUL – IBBT, Belgium)
Lamotte Wim (EDM - Hasselt University - tUL – IBBT, Belgium)
De Vleeschauwer Bart (IBCN – INTEC - Ghent University – IBBT, Belgium)
De Turck Filip (IBCN – INTEC - Ghent University – IBBT, Belgium)
Dhoedt Bart (IBCN – INTEC - Ghent University – IBBT, Belgium)
Demeester Piet (IBCN – INTEC - Ghent University – IBBT, Belgium)
Lambert Peter (MMLab - ELIS - Ghent University – IBBT, Belgium)
Van de Walle Dieter (MMLab - ELIS - Ghent University – IBBT, Belgium)
De Cock Jan (MMLab - ELIS - Ghent University – IBBT, Belgium)
Notebaert Stijn (MMLab - ELIS - Ghent University – IBBT, Belgium)
Van de Walle Rik (MMLab - ELIS - Ghent University – IBBT, Belgium)

Chapter 11
Web Distributed Computing Systems:
Boldrin Fabio (University of Ferrara, Italy)
Taddia Chiara (Lepida S.p.A., Italy)
Mazzini Gianluca (University of Ferrara, Italy)

Chapter 12
Efficient Adaptation Decision Making Algorithms for Context-Aware Applications
Vanrompay Yves (Katholieke Universiteit Leuven, Belgium)
Smits Tim (Consultant at AE, Belgium)
Berbers Yolande (Katholieke Universiteit Leuven, Belgium)

Section 5: Adaptation in the System and Network Layers

Chapter 13
Reliability-Aware Proactive Energy Management in Hard Real-Time Systems:
Munaga Satyakiran (IMEC/SSET and K.U. Leuven/ESAT, Belgium)
Catthoor Francky (IMEC/SSET and K.U. Leuven/ESAT, Belgium)

Chapter 14
A Machine Learning Based Meta-Scheduler for Multi-Core Processors
Rai Jitendra Kumar (University of Hyderabad and ANURAG, India)
Negi Atul (University of Hyderabad, India)
Wankar Rajeev (University of Hyderabad, India)
Nayak K. D. (ANURAG, India)

Chapter 15
Autonomic QoS Optimization of Real-Time Internet Audio Using Loss Prediction and Stochastic Control
Roychoudhuri Lopamudra (Carroll University, USA)
Al-Shaer Ehab S. (University of North Carolina, USA)

Chapter 16
Impact of Cross-Layer Adaptations of Mobile IP on IEEE 802.11 Networks on Video Streaming
De Cleyn P. (Universiteit Antwerpen, Belgium)
Blondia C. (Universiteit Antwerpen, Belgium)

Chapter 17
Beernet:
Mejías B. (Université catholique de Louvain, Belgium)
Van Roy P. (Université catholique de Louvain, Belgium)

Section 6: Models and Approaches for Adaptive and Dependable Services

Chapter 18
A Multi-User Ad-Hoc Resource Manager for Public Urban Areas
Huerta-Canepa Gonzalo (KAIST, South Korea)
Lee Dongman (KAIST, South Korea)

Chapter 19
Mixing Workflows and Components to Support Evolving Services
Baude Françoise (Université de Nice Sophia-Antipolis, France)
Legrand Virginie (Université de Nice Sophia-Antipolis, France)
Henrio Ludovic (Université de Nice Sophia-Antipolis, France)
Naoumenko Paul (Université de Nice Sophia-Antipolis, France)
Pfeffer Heiko (Technische Universität Berlin, Germany)
Bassbouss Louay (Technische Universität Berlin, Germany)
Linner David (Technische Universität Berlin, Germany)

Chapter 20
Optimization of WS-BPEL Workflows through Business Process Re-Engineering Patterns
Buys Jonas (University of Antwerp, Belgium)
De Florio Vincenzo (University of Antwerp, Belgium)
Blondia Chris (University of Antwerp, Belgium)

An Excellent Addition to Your Library!

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: _____