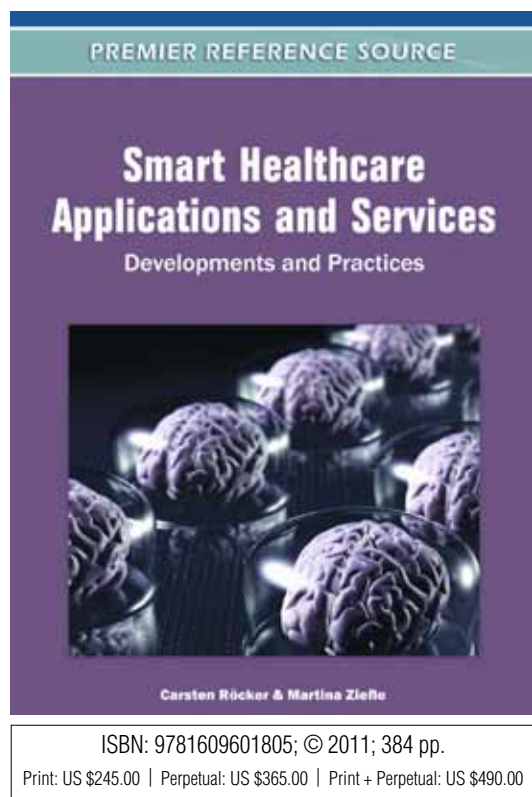


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Released: December 2010

Smart Healthcare Applications and Services: Developments and Practices



Carsten Röcker (RWTH Aachen University, Germany)
and Martina Ziefle (RWTH Aachen University, Germany)

Within the last years a variety of new healthcare concepts for supporting and assisting users in technology-enhanced home environments emerged. These so-called "smart healthcare technologies" are characterized by a combined use of information and communication technologies and health monitoring devices in the home domain.

Smart Healthcare Applications and Services: Developments and Practices provides an in-depth introduction into medical, social, psychological, and technical aspects of smart healthcare applications as well as their consequences for the design, use and acceptance of future systems. The knowledge and insights provided in this book will help students as well as systems designers understand the fundamental social and technical requirements smart healthcare technologies have to meet.

Topics Covered:

- Adaptive and tangible user interfaces for e-health systems
- Ambient assisted living environments
- Handheld devices and mobile computing in e-health systems
- Human aspects of future and emerging healthcare technologies
- Model-based design of e-health systems
- Privacy, security, and trust in e-health applications
- Social and societal implications of e-health applications
- Software infrastructures and architectures for implementing e-health applications
- Technologies and devices for smart healthcare systems
- Usability of healthcare information systems

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 for classroom use.

Carsten Röcker is a senior researcher at the Human Technology Centre (HumTec) at RWTH Aachen University, working in the research program "eHealth - Enhancing Mobility with Aging." As part of an interdisciplinary team of researchers he is designing healthcare applications for supporting elderly people in ubiquitous computing environments. Previously, Carsten was a visiting PostDoc at the Media Computing Group, focusing on the evaluation of user requirements for smart work environments. Before joining RWTH Aachen University in 2008, he was a PostDoc at the Distributed Cognition and HCI Laboratory at the University of California in San Diego. From 2000 to 2006 he worked as a research associate at the Fraunhofer Integrated Publication and Information Systems Institute (IPSI) in Darmstadt. During this time he was involved in several projects designing novel information and communication technologies for intelligent home and office environments. He has an interdisciplinary background with academic degrees in the areas computer science (PhD), psychology (PhD), electrical engineering (Master) and management (Master).

Section 1: System Design

Chapter 1

Wireless Networking Credibility, Device Interoperability & Other Important Issues to Take Into Consideration for the Deployment of a Homecare Service Provision Model
Perakis Konstantinos (National Technical University of Athens, Greece)
Koutsouris Dimitris (National Technical University of Athens, Greece)

Chapter 2

Sensor Networks in Pervasive Healthcare Computing
Tafa Zhibbert (Belgrade University, Serbia)

Chapter 3

Next Generation Body Area Networks and Smart Environments for Healthcare
Fergus Paul (Liverpool John Moores University, UK)
Taylor Mark (Liverpool John Moores University, UK)
Haggerty John (University of Salford, UK)
Bracegirdle Lorna (Newcastle University, UK and NHS North Liverpool Primary Care Trust, UK)
Merabti Madjid (Liverpool John Moores University, UK)

Chapter 4

From Idea to Use:
Enquist Henrik (Sweden)

Chapter 5

Smart Lifelogging Technology for Episodic Memory Support
Lee Matthew L. (Carnegie Mellon, USA)
Dey Anind K. (Carnegie Mellon, USA)

Section 2: Frameworks and Applications

Chapter 6

Resolving and Mediating Ambiguous Contexts in Pervasive Environments
Roy Nirmalya (Institute for Infocomm Research, Singapore)
Das Sajal K. (University of Texas at Arlington, USA)
Julien Christine (University of Texas at Austin, USA)

Chapter 7

Supporting the Ubiquitous Doctor
Ferraz Carlos (Universidade Federal de Pernambuco, Brazil)
Diniz Juliana (Universidade Federal Rural de Pernambuco, Brazil)

Chapter 8

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Ozturk Yusuf (San Diego State University, USA)
Sharma Jayesh (San Diego State University, USA)

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A Highly-Interactive and User-Friendly PHR Application for the Provision of Homecare Services
Koufi Vasso (University of Piraeus, Greece)
Malamateniou Flora (University of Piraeus, Greece)
Vassilacopoulos George (University of Piraeus, Greece)

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Duncan John F. (Indiana University, USA)
Camp L. Jean (Indiana University, USA)
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Interactivating Rehabilitation through Active Multimodal Feedback and Guidance
Bongers Bert (University of Technology, Australia)
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Mapping Input Technology to Ability
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Benini Maria Júlia S. (Eindhoven University of Technology, The Netherlands)
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Talbot Walter A. (Eindhoven University of Technology, The Netherlands)
Visser Albertine (Eindhoven University of Technology, The Netherlands)
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Chapter 14

A Home-Based System to support Delivery of Health and Social Care
Turner Kenneth J. (University of Stirling, UK)

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