E-Healthcare Systems and Wireless Communications: Current and Future Challenges

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There has been a dramatic increase in the utilization of wireless technologies in healthcare systems as a consequence of the wireless ubiquitous and pervasive communications revolution. Emerging information and wireless communication technologies in health and healthcare have led to the creation of e-health systems, also known as e-healthcare, which have been drawing increasing attention in the public and have gained strong support from government agencies and various organizations.

E-Healthcare Systems and Wireless Communications: Current and Future Challenges explores the developments and challenges associated with the successful deployment of e-healthcare systems. The book combines research efforts in different disciplines including pervasive wireless communications, wearable computing, context-awareness, sensor data fusion, artificial intelligence, neural networks, expert systems, databases, and security. This work serves as a comprehensive reference for graduate students in bioengineering and also provides solutions for medical researchers who are faced with the challenge of designing and implementing a cost-effective pervasive and ubiquitous wireless communication system.

Topics Covered:
- Autonomic Sensor Networks for Healthcare
- Cyber Physical Systems for Patient Monitoring
- E-Surgery Using Large Bandwidth Connections
- Home Monitoring and Ambient Assisted Applications
- Middleware for E-Health
- RFID Applications in E Healthcare
- Wearable and Implantable Sensors for Healthcare
- Wireless Body Area Networks
- Wireless Communications in Healthcare
- Wireless Sensor Networks for Healthcare

Dr. Mohamed K. Watfa is currently an Associate Professor in the Faculty of Computer Science and Engineering at the University of Wollongong, Dubai. Before that he was an Assistant Professor at the American University of Beirut for two years (2006-2008). He received his PhD from the School of Electrical and Computer Engineering at the University of Oklahoma in Norman, OK, in early 2006. He obtained his BS in Computer Science from American University of Beirut in 2002 and his Masters degree in Engineering Science from the University of Toledo, OH, in 2003. He was one of the youngest PhD holders to graduate from his university at the age of 24. He was also on the dean's honors list and was given a number of prestigious awards. His research interests include sensor networks, intelligent systems, wireless networking, software engineering, resource management, energy issues, tracking, routing, and performance measures. He is the author of a number of published books, the guest editor of a number of international journals, and the organizer of a number of international conferences. He also held a position as a lead network engineer at different networking companies. He is also a member of the ACM and IEEE. He has more than forty journal and conference publications.
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Challenges of Mobile Health Applications in Developing Countries
Yadav Nikhil (University of Notre Dame, USA)
Poellabauer Christian (University of Notre Dame, USA)

Chapter 2
Legal Issues in E-Healthcare Systems
Sarabdeen Jawahitha (University of Wollongong in Dubai, UAE)

Chapter 3
Healthcare Applications for Clinicians
Watfa Mohamed K. (University of Wollongong in Dubai, UAE)
Majeed Hina (University of Wollongong in Dubai, UAE)
Salahuddin Tooba (University of Wollongong in Dubai, UAE)

Chapter 4
RFID Applications in E-Healthcare
Watfa Mohamed K. (University of Wollongong in Dubai, UAE)
Kaur Manprabhjot (University of Wollongong Dubai, UAE)
Daruwala Rashida Firoz (University of Wollongong Dubai, UAE)

Section 2: Security and Privacy Issues in E-Healthcare Systems

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Security and Privacy in Body Sensor Networks
Itani Wassim (American University of Beirut, Lebanon)
Kayssi Ayman (American University of Beirut, Lebanon)
Chehab Ali (American University of Beirut, Lebanon)

Chapter 6
Is Your Automated Healthcare Information Secure?
Zineeddine Mahamed (AlHosn University, UAE)

Chapter 7
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Venkatasubramanian Krishna K. (University of Pennsylvania, USA)
Nabar Sidharth (University of Washington, USA)
Gupta Sandeep K. S. (Arizona State University, USA)
Pooovendran Radha (University of Washington, USA)

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Zalzala Laura (Bucharest Academy of Economic Studies, Romania)
Sahar Subrat (Pandit Deendayal Petroleum University, India)
Vaghasiya Suresh (Pandit Deendayal Petroleum University, India)
Karimi Ali (Trans Technology Group, USA)

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Azeta A.A. (Covenant University, Ota, Nigeria)

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Abboud Sarah (American University of Beirut, Lebanon)
Huier Huda Abu-Saad (American University of Beirut, Lebanon)

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Pompli Dario (Rutgers University, USA)

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Mihaylova Lyudmila (Lancaster University, UK)

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Delaney Brendan (King's College London, UK)
Speech Staurt (King's College London, UK)

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Halagumale Malina N. (The University of Melbourne, Australia)
Nirmalathas Thas (The University of Melbourne, Australia)
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Alou El-Near Mohamad (Arab Academy for Science, Technology & Maritime Transport (AASTM), Egypt)
Bielitz R. Michael (Virginia Polytechnic Institute and State University, USA)
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