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Embedded Computer Systems: Architectures, Modeling, and Simulation  
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Protocols and Applications for the Industrial Internet of Things  
Interconnecting Smart Objects with IP  
From Internet of Things to Smart Cities  
Computers, Networks, Systems, and Industrial Engineering 2011  
Advances in Mechanical and Electronic Engineering  
Dr. Dobb's Journal  
Practical Contiki-NG

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## **SOFIA BERG**

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### Compressive Sensing for Wireless Communication Springer

We are proud to present to you the proceedings of the European Grid Conference 2005, held at the Science Park Amsterdam during February 14 -16.

*Futuristic Trends in Network and Communication Technologies* Springer Science & Business Media  
From Internet of Things to Smart Cities: Enabling Technologies explores the information and communication technologies (ICT) needed to enable real-time responses to current environmental, technological, societal, and economic challenges. ICT technologies can be utilized to help with reducing carbon emissions, improving resource utilization efficiency, promoting active engagement of citizens, and more. This book aims to introduce the latest ICT technologies and to promote international collaborations across the scientific community, and eventually, the general public. It consists of three tightly coupled parts. The first part explores the involvement of enabling technologies from basic machine-to-machine communications to Internet of Things technologies. The second part of the book focuses on state of the art data analytics and security techniques, and the last part of the book discusses the design of human-machine interfaces, including smart home and cities. Features Provides an extended literature review of relevant technologies, in addition to detailed comparison diagrams, making new readers be easier to grasp fundamental and wide knowledge Contains the most recent research results in the field of communications, signal processing and computing sciences for facilitating smart homes, buildings, and cities Includes future research directions in Internet of Things, smart homes, smart buildings, smart grid, and smart cities Presents real examples of applying these enabling technologies to smart homes, transportation systems and cities With contributions from leading experts, the book follows an easy structure that not only presents timely research topics in-depth, but also integrates them into real world applications to help readers to better understand them.

### **Electrical Engineering and Control** John Wiley & Sons

ECWAC2012 is an integrated conference devoted to Electronic Commerce, Web Application and Communication. In the this proceedings you can find the carefully reviewed scientific outcome of the second International Conference on Electronic Commerce, Web Application and Communication (ECWAC 2012) held at March 17-18,2012 in Wuhan, China, bringing together researchers from all around the world in the field.

### **On the Way to Information Society** IOS Press

This volume includes papers presented at IHH-MSP 2017, the 13th International Conference on Intelligent Information Hiding and Multimedia Signal Processing, held from 12 to 15 August 2017 in Matsue, Shimane, Japan. The conference addresses topics ranging from information hiding and security, and multimedia signal processing and networking, to bio-inspired multimedia technologies and systems. This volume of Smart Innovation, Systems and Technologies focuses on subjects related to massive image/video compression and transmission for emerging networks, advances in

speech and language processing, information hiding and signal processing for audio and speech signals, intelligent distribution systems and applications, recent advances in security and privacy for multimodal network environments, multimedia signal processing, and machine learning. Updated with the latest research outcomes and findings, the papers presented appeal to researchers and students who are interested in the corresponding fields.

### Advances in Electronic Commerce, Web Application and Communication CRC Press

This unique reference focuses on methods of application, validation and testing based on real deployments of sensor networks in the clinical and home environments. Key topics include healthcare and wireless sensors, sensor network applications, designs of experiments using sensors, data collection and decision making, clinical deployment of wireless sensor networks, contextual awareness medication prompting field trials in homes, social health monitoring, and the future of wireless sensor networks in healthcare.

### *Embedded Computer Systems: Architectures, Modeling, and Simulation* Springer

Explore how to develop and implement wireless server networks (WSN) using Contiki-NG, branded as the operating system for the IoT. The book explains Contiki-NG's advantages in sensing, communication, and energy optimization and enables you to begin solving problems in automation with WSN. Practical Contiki-NG is a guide to getting started with Contiki-NG programming featuring projects that demonstrate a variety of applications. This book takes a practical and content-driven approach to the latest technologies, including Raspberry Pi, IoT and cloud servers. Readers will go through step-by-step guides and sample scenarios such as sensing, actuating, connectivity, building middleware, and utilizing IoT and cloud-based technologies. If you're looking to go from zero to hero in using Contiki-NG to build Wireless Sensor Network (WSN) applications then this is the book for you. What You'll Learn Prepare and set up Contiki-NG development Review the basics of the Contiki-NG platform to build Wireless Sensor Networks (WSN) Develop your own Contiki-NG program Perform sensing and actuating on the Contiki-NG platform Implement a middleware for Contiki-NG motes Build a simple IoT program using the Contiki-NG environment Who This Book Is For Developers, students, researchers and anyone who has an interest in Wireless Sensor Network (WSN).

### *The Emerging Domain of Cooperating Objects* Nitya Publications

This book constitutes the thoroughly refereed post-conference proceedings of the First International Conference, SENSAPPEAL 2009, held in Athens, Greece, in September 2009. The 12 revised full papers were carefully reviewed and selected from 24 submissions. The papers cover various topics such as WSN for fire hazard detection and monitoring, WSN for precision horticulture, a nephelometric turbidity system for monitoring residential drinking water quality, deployment of a wireless ultrasonic sensor array for psychological monitoring, WISEBED: an open large-scale wireless sensor network testbed, SmartEN: a Marie Curie research framework for WSN in smart management of the human environment, embedded web server for the AVR butterfly enabling immediate access to wireless sensor node readings, as well as TinySPOTComm: facilitating communication over IEEE

802.15.4 between Sun SPOTs and TinyOS-based motes.

*Cook Over IP* Springer Science & Business Media

PES College of Engineering is organizing an International Conference on Emerging Research in Electronics, Computer Science and Technology (ICERECT-12) in Mandya and merging the event with Golden Jubilee of the Institute. The Proceedings of the Conference presents high quality, peer reviewed articles from the field of Electronics, Computer Science and Technology. The book is a compilation of research papers from the cutting-edge technologies and it is targeted towards the scientific community actively involved in research activities.

*Emerging Research in Electronics, Computer Science and Technology* Springer Science & Business Media

The Second International Conference on Networks and Communications (NeCoM 2010), the Second International Conference on Wireless and Mobile Networks (WiMoN 2010), and the Second International Conference on Web and Semantic Technology (WeST 2010) were held in Chennai, India, during July 23–25, 2010. They attracted many local and international delegates, presenting a balanced mixture of intellects from the East and from the West. The goal of these conferences is to bring together researchers and practitioners from academia and industry to focus on understanding computer networks, wireless networks, mobile networks and the Web, semantic technologies and to establish new collaborations in these areas. Authors are invited to contribute to the conference by submitting articles that illustrate research results, projects, survey work and industrial experiences describing significant advances in the areas of all computer networks and Semantic Web technologies. The NeCoM 2010, WiMoN 2010 and WeST 2010 committees rigorously invited submissions for many months from researchers, scientists, engineers, students and practitioners related to the relevant themes and tracks of the workshop. This effort guaranteed submissions from an unparalleled number of internationally recognized top-level researchers. All the submissions underwent a strenuous peer-review process which comprised expert reviewers. These reviewers were selected from a talented pool of Technical Committee members and external reviewers on the basis of their expertise. The papers were then reviewed based on their contributions, technical content, originality and clarity.

*Introduction to Internet of Things (Basic Concept, Challenges, Security Issues, Applications & Architecture)* Artech House

Compressed Sensing (CS) is a promising method that recovers the sparse and compressible signals from severely under-sampled measurements. CS can be applied to wireless communication to enhance its capabilities. As this technology is proliferating, it is possible to explore its need and benefits for emerging applications. *Compressive Sensing for Wireless Communication* provides:

- A clear insight into the basics of compressed sensing
- A thorough exploration of applying CS to audio, image and computer vision
- Different dimensions of applying CS in Cognitive radio networks
- CS in wireless sensor network for spatial compression and projection
- Real world problems/projects that can be implemented and tested
- Efficient methods to sample and reconstruct the images in resource constrained WMSN environment

This book provides the details of CS and its associated applications in a thorough manner. It lays a direction for students and new engineers and prepares them for developing new tasks within the field of CS. It is an indispensable companion for practicing

engineers who wish to learn about the emerging areas of interest.

*6LoWPAN* Springer

The volume includes a set of selected papers extended and revised from the I2009 Pacific-Asia Conference on Knowledge Engineering and Software Engineering (KESE 2009) was held on December 19~ 20, 2009, Shenzhen, China. Volume 1 is to provide a forum for researchers, educators, engineers, and government officials involved in the general areas of Computer and Software Engineering to disseminate their latest research results and exchange views on the future research directions of these fields. 140 high-quality papers are included in the volume. Each paper has been peer-reviewed by at least 2 program committee members and selected by the volume editor Prof. Yanwen Wu. On behalf of this volume, we would like to express our sincere appreciation to all of authors and referees for their efforts reviewing the papers. Hoping you can find lots of profound research ideas and results on the related fields of Computer and Software Engineering.

*Advances in Grid Computing - EGC 2005* CRC Press

This book focuses on enabling internet connectivity to cordless kitchen appliances. It introduces the Ki Cordless Kitchen standard, describes the possible architectures to enable internet connectivity and dives deep into addressing the networking challenges. Today many kitchen appliances are being connected to the internet to facilitate smart cooking. The Wireless Power Consortium is working on the Ki Cordless Kitchen standard to make wirelessly powered cordless appliances a reality. In Ki, the cordless appliances are powered by inductive power sources integrated into the kitchen countertops. The cordless appliance and the power transmitter exchange data using a time-slotted NFC channel. The book describes architectures and solutions using lightweight TCP/IP stacks to optimise and seamlessly adapt TCP to the time-slotted, low data rate NFC channel, and thereby enable a truly IoT-based cooking experience for cordless kitchens.

*ICTACS 2006* CRC Press

The text provides a comprehensive overview of the design aspects of the internet of things devices and covers the fundamentals of big data and data science. It explores various scenarios such as what are the middleware and frameworks available and how to build a stable, standards-based, and Secure internet of things device. It discusses important concepts including embedded programming techniques, machine-to-machine architecture, and the internet of things for smart city applications. It will serve as an ideal design book for professionals, senior undergraduate, and graduate students in the fields including electrical engineering, electronics and communication engineering, and computer engineering. The book- Covers applications and architecture needed to deliver solutions to end customers and readers. Discusses practical aspects of implementing the internet of things in diverse areas including manufacturing, and software development. Highlights big data concepts and embedded programming techniques. Presents technologies including machine to machine, integrated sensors, and radio-frequency identification. Introduces global system for mobile communication and precise details of standards based on internet of things architecture models. The book focuses on practical design aspects such as how to finalize a processor integrated circuit, which operating system to use, etc. in a single volume. It will serve as an ideal text for professionals, senior undergraduate, and graduate students in diverse engineering domains including electrical, electronics and communication, computer.

#### Design of Internet of Things John Wiley & Sons

There are a number of different system concepts that have gained much relevance in the area of embedded systems over the past couple of years. First, there is the classic concept of embedded systems where the focus is on control systems for physical processes. Secondly, the notion of pervasive computing has evolved, where the vision foresees everyday objects having some form of computation capacity and, in most cases, sensing and communication facilities. Thirdly, the notion of wireless sensor networks has arisen, where small computing devices are able to sense their environment and cooperate in order to achieve a well-defined goal. These three types of quite diverse systems share a lot of commonalities on the one hand and, on the other hand, have some complementary aspects in common that make a combination of these systems into a coherent system vision promising. In particular, the important notions of control, heterogeneity, wireless communication, dynamic and ad-hoc nature and cost are prevalent to various degrees in each of these systems. A future system concept needs to combine the strong points of all three system concepts in at least these functional aspects. It has to provide support for the control of physical processes like today's embedded systems do, have as good support for device heterogeneity and spontaneity of usage as required by pervasive and ubiquitous computing approaches, and has to be as cost efficient and wirelessly agile as wireless sensor networks are. These new systems consist, therefore, of individual entities or objects that jointly strive to reach a common goal, which will typically be a goal in sensing or control, and are dynamically and loosely federating themselves for cooperation, taking care not to overtax their available resources. This book presents a roadmap to these concepts which are summarized as cooperating objects.

#### Building Wireless Sensor Networks John Wiley & Sons

A guide to getting the most out of a Roomba vacuum cleaner covers such topics as setting up a Bluetooth interface, building a serial interface tether, connecting the Roomba to the Internet, and replacing Roomba's brain.

#### Sensor Applications, Experimentation, and Logistics Springer Nature

Interconnecting Smart Objects with IP: The Next Internet explains why the Internet Protocol (IP) has become the protocol of choice for smart object networks. IP has successfully demonstrated the ability to interconnect billions of digital systems on the global Internet and in private IP networks. Once smart objects can be easily interconnected, a whole new class of smart object systems can begin to evolve. The book discusses how IP-based smart object networks are being designed and deployed. The book is organized into three parts. Part 1 demonstrates why the IP architecture is well suited to smart object networks, in contrast to non-IP based sensor network or other proprietary systems that interconnect to IP networks (e.g. the public Internet of private IP networks) via hard-to-manage and expensive multi-protocol translation gateways that scale poorly. Part 2 examines protocols and algorithms, including smart objects and the low power link layers technologies used in these networks. Part 3 describes the following smart object network applications: smart grid, industrial automation, smart cities and urban networks, home automation, building automation, structural health monitoring, and container tracking. Shows in detail how connecting smart objects impacts our lives with practical implementation examples and case studies Provides an in depth

understanding of the technological and architectural aspects underlying smart objects technology Offers an in-depth examination of relevant IP protocols to build large scale smart object networks in support of a myriad of new services

#### **Practical Guide to LTE-A, VoLTE and IoT** Lulu.com

This volume includes extended and revised versions of a set of selected papers from the International Conference on Electric and Electronics (EEIC 2011) , held on June 20-22 , 2011, which is jointly organized by Nanchang University, Springer, and IEEE IAS Nanchang Chapter. The objective of EEIC 2011 Volume 2 is to provide a major interdisciplinary forum for the presentation of new approaches from Electrical engineering and controls, to foster integration of the latest developments in scientific research. 133 related topic papers were selected into this volume. All the papers were reviewed by 2 program committee members and selected by the volume editor Prof. Min Zhu. We hope every participant can have a good opportunity to exchange their research ideas and results and to discuss the state of the art in the areas of the Electrical engineering and controls.

#### **Wired/Wireless Internet Communications** Springer

The Internet of Things (IoT) is the next big challenge for the research community. The IPv6 over low power wireless personal area network (6LoWPAN) protocol stack is considered a key part of the IoT. In 6LoWPAN networks, heavy network traffic causes congestion which significantly degrades network performance and impacts on quality of service aspects. This book presents a concrete, solid and logically ordered work on congestion control for 6LoWPAN networks as a step toward successful implementation of the IoT and supporting the IoT application requirements. The book addresses the congestion control issue in 6LoWPAN networks and presents a comprehensive literature review on congestion control for WSNs and 6LoWPAN networks. An extensive congestion analysis and assessment for 6LoWPAN networks is explored through analytical modelling, simulations and real experiments. A number of congestion control mechanisms and algorithms are proposed to mitigate and solve the congestion problem in 6LoWPAN networks by using and utilizing the non-cooperative game theory, multi-attribute decision making and network utility maximization framework. The proposed algorithms are aware of node priorities and application priorities to support the IoT application requirements and improve network performance in terms of throughput, end-to-end delay, energy consumption, number of lost packets and weighted fairness index.

#### **Implementation and Application of Functional Languages** IGI Global

Authored by two of the leading authorities in the field, this guide offers readers the knowledge and skills needed to achieve proficiency with embedded software.

#### **Programming Embedded Systems** CRC Press

This book constitutes the thoroughly refereed post-proceedings of the 21st International Workshop on Implementation and Applications of Functional Languages, IFL 2000, held in South Orange, NJ, USA, in September 2009. The 13 revised full papers presented were carefully reviewed and were selected from numerous submissions. The IFL symposia bring together researchers and practitioners that are actively engaged in the implementation and the use of functional and function based programming languages. Every year IFL provides a venue for the presentation and discussion of new ideas and concepts, of work in progress, and of publication-ripe results.