

A Lity Framework For Omnet User Manual

Modeling and Tools for Network Simulation *Recent Advances in Network Simulation* **MATLAB The Art of Wireless Sensor Networks** *LTE-Advanced Simulation Framework Based On OMNeT++* **Simulation in Computer Network Design and Modeling: Use and Analysis** **Networking and Telecommunications: Concepts, Methodologies, Tools, and Applications** **Handbook of Research on Discrete Event Simulation Environments: Technologies and Applications** **Information Security Handbook of Research on Advances in Data Analytics and Complex Communication Networks** **Artificial Intelligence and Security** *From Internet of Things to Smart Cities* **Concepts, Applications, Experimentation and Analysis of Wireless Sensor Networks** *Future Data and Security Engineering* **Discrete Event Simulations** **Optical Switching** **Fundamentals of Sensor Network Programming** *Methodologies and Protocols for Wireless Communication in Large-Scale, Dense Mesh Networks* **A Framework for Quality of Service in Vehicle-to-Pedestrian Safety Communication** *End-to-End Quality of Service Over Heterogeneous Networks* **Mobile Networks and Management** **Information Science and Applications** **Wireless Sensor Networks Performance Evaluation: Metrics, Models and Benchmarks** **Multihomed Communication with SCTP (Stream Control Transmission Protocol)** **Security for Multihop Wireless Networks** **Embedded Systems and Artificial Intelligence** **Proceedings of the Ninth International Conference on Soft Computing and Pattern Recognition (SoCPaR 2017)** **Systems Modeling: Methodologies and Tools** **Simulation and Modeling Methodologies, Technologies and Applications** *Design Frameworks for Wireless Networks* **Computational Intelligence and Efficiency in Engineering Systems** **Advances in Security of Information and Communication Networks** **The Today and Future of WSN, AI, and IoT** *Robot Operating System (ROS) A Beginner's Guide to Data Agglomeration and Intelligent Sensing* **Towards Digital Optical Networks** **Model-driven Development for Embedded Software** **Cognitive Radio and Networking for Heterogeneous Wireless Networks** **Information Technology - New Generations**

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Model-driven Development for Embedded Software Aug 24 2019 **Model-driven Development for Embedded Software: Application to Communications for Drone Swarm** describes the principles of model-oriented design used in the aeronautical field, specifically for the UAV (Unmanned Aerial Vehicle). The book focuses on designing an embedded system for drones to carry out ad hoc communication within a drone fleet. In this context, an original methodology for rapid prototyping of embedded systems is presented. This approach saves time for the verification and formal validation phases, contributing to certification of the Unmanned Aerial System (UAS). The book also addresses the more traditional verification phases that must be performed to verify accuracy of the system. This evaluation is carried out in simulation and by real experimentation. The various tools necessary for the implementation of this methodology are described to allow the reader to be able to implement independently. Finally, to illustrate the contribution of this original methodology, an example of embedded system development is presented in which the different phases of the methodology are explained to conceive, validate and test a new secure routing protocol developed for communications within a fleet of drones. Describes the principles of model-oriented design used in the aeronautical field Presents an original methodology of rapid prototyping of embedded systems Presents a mode of development for embedded systems in the different phases

Advances in Security of Information and Communication Networks Jan 28 2020 This book constitutes the refereed proceedings of the International Conference on Advances in Security of Information and Communication Networks, Sec Net 2013, held in Cairo, Egypt, in September 2013. The 21 revised full papers presented were carefully reviewed and selected from 62 submissions. The papers are organized in topical sections on networking security; data and information security; authentication and privacy; security applications.

LTE-Advanced Simulation Framework Based On OMNeT++ Jun 26 2022 Applying new techniques in real world without testing is very expensive and may cause big losses due to gaps in implementation or algorithms. Long Term Evolution-Advanced (LTE-Advanced) mobile networks is a new approach in 4G mobile networks, it might be very expensive to apply this technique in real world without pretesting. In this book we introduce a simulation framework based on OMNeT++ IDE. The introduced framework is free to use and open for development. This book contains all the details that are related to LTE-Advanced simulation framework, starting from protocols definitions and ending with simulation details.

Proceedings of the Ninth International Conference on Soft Computing and Pattern Recognition (SoCPaR 2017) Jul 04 2020 This book presents 18 carefully selected papers from the ninth edition of the International Conference on Soft Computing and Pattern Recognition (SoCPaR 2017), which was held in Marrakesh, Morocco from December 11 to 13, 2017. A premier conference in the Soft Computing field, SoCPaR brings together the world's leading researchers and practitioners interested in advancing the state of the art in Soft Computing and Pattern Recognition, allowing them to exchange notes on a broad range of disciplines. The book offers a valuable reference guide for all researchers, students and practitioners in the fields of Computer Science and Engineering.

The Today and Future of WSN, AI, and IoT Dec 29 2019 Doors are never locked for smart software and smart devices that are trained by smart people **KEY FEATURES** - A book for everyone interested to know more about WSN, AI, and IoT - Discover various Open source tools & techniques for research and development in these fields - An easy-to-understand guide that will help you get familiar with the upcoming developments in WSN, AI, and IoT **DESCRIPTION** Almost every industry is looking for solutions for the best performance in the work that they produce. Researchers and developers are developing promising solutions that address the industrial problems to increase the effectiveness and efficiency of either the product or the service. This paradigm has changed the way many solutions and services are designed. Wireless Sensor Networks (WSN) are the backbone implementation for the Internet of Things (IoT) to be realized. For the IoT to produce efficient results, Artificial Intelligence (AI) becomes the key assistance; however, it needs careful modeling. The content for the book is planned and prepared in such a way that you will be able to understand the concept and can interpret it for their use. The concepts, technologies, processes that are discussed in the book are contemporary and futuristic. Every chapter is well planned to be a subsequent chapter for the previous. In the Summary section of each chapter, there are a few review questions and a case for research. **WHAT WILL YOU LEARN** - Learn about the most popular AI & IoT research topics - Discover a few WSN, IoT and AI Simulators - Get to know more about the fusion of Blockchain and IoT technologies - Know more about the AI and IoT predictions in the global scenario - Become aware of the various multi-disciplinary research based on WSN, AI, and IoT **WHO THIS BOOK IS FOR** By nature, every human is anxious to learn and would be benefited when they find the right direction. This book is truly intended for all students, teachers, product designers, opensource developers. However, it does not limit them alone. Those who have stepped into research, afresh, will find this book a more exciting one. **TABLE OF CONTENTS** 1. Introduction 2. WSN, AI, and IoT: Future Shock 3. Active Research Areas of WSN, AI, and IoT 4. Simulators of WSN, AI, and IoT 5. Blockchain for WSN, AI, and IoT 6. What is Next? 7. State of AI and IoT by 2050

Mobile Networks and Management Feb 08 2021 This book constitutes the refereed post-conference proceedings of the 8th International Conference on Mobile Networks and Management, MONAMI 2016, held in Abu Dhabi, United Arab Emirates, in October 2016. The 14 revised full papers were carefully reviewed and selected from 18 submissions. The papers are organized thematically in four parts, starting with cloud computing and software defined networking followed by Internet-of-the-things, vehicular networks and novel techniques and algorithms.

Optical Switching Jul 16 2021 **OPTICAL SWITCHING** Comprehensive coverage of optical switching technologies and their applications in optical networks **Optical Switching: Device Technology and Applications in Networks** delivers an accessible exploration of the evolution of optical networks with clear explanations of the current state-of-the-art in the field and modern challenges in the development of Internet-of-Things devices. A variety of optical switches—including MEMS-based, magneto, photonic, and SOA-based—are discussed, as is the application of optical switches in networks. The book is written in a tutorial style, easily understood by both undergraduate and graduate students. It describes the fundamentals and recent developments in optical switch networks and examines the architectural and design challenges faced by those who design and construct emerging optical switch networks, as well as how to overcome those challenges. The book offers ways to assess and analyze systems and applications, comparing a variety of approaches available to the reader. It also provides: A thorough introduction to switch characterization, including optical, electro optical, thermo optical, magneto optical, and acoustic-optic switches Comprehensive explorations of MEMS-based, SOA-based, liquid crystal, photonic crystal, and optical electrical optical (OEO) switches Practical discussions of quantum optical switches, as well as nonlinear optical switches In-depth examinations of the application of optical switches in networks, including switch fabric control and optical switching for high-performance computing Perfect for researchers and professionals in the fields of telecommunications, Internet of Things, and optoelectronics, **Optical Switching: Device Technology and Applications in Networks** will also earn a place in the libraries of advanced undergraduate and graduate students studying optical networks, optical communications, and sensor applications.

Artificial Intelligence and Security Dec 21 2021 The 3-volume set CCIS 1252 until CCIS 1254 constitutes the refereed proceedings of the 6th International Conference on Artificial Intelligence and Security, ICAIS 2020, which was held in Hohhot, China, in July 2020. The conference was formerly called "International Conference on Cloud Computing and

Security” with the acronym ICCCS. The total of 178 full papers and 8 short papers presented in this 3-volume proceedings was carefully reviewed and selected from 1064 submissions. The papers were organized in topical sections as follows: Part I: artificial intelligence; Part II: artificial intelligence; Internet of things; information security; Part III: information security; big data and cloud computing; information processing.

From Internet of Things to Smart Cities Nov 19 2021 *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.

Methodologies and Protocols for Wireless Communication in Large-Scale, Dense Mesh Networks May 14 2021 This dissertation examines concepts for wireless communication in large-scale, dense mesh networks, which can be used in future for plant control or building automation. It is shown that recent communication approaches for resource-constrained, IEEE 802.15.4 hardware do not scale well. This motivates the development of methodologies and protocols for reliable wireless communication in large-scale networks. This work covers the following topics: a “toolbox” for the development, programming, testing, and simulation of communication protocols for embedded systems; the decomposition of large networks into smaller subnets; concepts for scalable broadcasting and routing; the realization of selected network services such as emergency shutdowns and software updates.

Multihomed Communication with SCTP (Stream Control Transmission Protocol) Oct 07 2020 Although multihomed communication is a rapidly emerging trend for next generation networks, no known book explores multihomed communication with the Stream Control Transmission Protocol (SCTP). Filling this void, *Multihomed Communication with SCTP (Stream Control Transmission Protocol)* explains this innovative feature that allows an endpoint to simultaneously maintain and use multiple points of connectivity to the network—making it possible for fixed and mobile users to connect to the Internet via multiple service providers or last hop technologies. Among the topics addressed, the book covers: Support of node mobility between networks Concurrent multipath transfer using SCTP multihoming Low delay communication and multimedia applications High performance computing using commodity hardware and software SCTP support in the INET framework and its analysis in the Wireshark packet analyzer SCTP application interface Ideal for researchers and programmers, this forward-looking reference describes SCTP multihoming concepts and implementation, applications of multihoming across different domains, and proposed extensions such as multipath transfer and mobility. Although the book is aimed at those with an advanced background, it also covers the fundamental concepts and mechanisms of SCTP multihoming to help anyone get up to speed on SCTP.

Wireless Sensor Networks Dec 09 2020 This book focuses on the principles of wireless sensor networks (WSNs), their applications, and their analysis tools, with meticulous attention paid to definitions and terminology. This book presents the adopted technologies and their manufacturers in detail, making WSNs tangible for the reader. In introductory computer networking books, chapter sequencing follows the bottom-up or top-down architecture of the 7-layer protocol. This book addresses subsequent steps in this process, both horizontally and vertically, thus fostering a clearer and deeper understanding through chapters that elaborate on WSN concepts and issues. With such depth, this book is intended for a wide audience; it is meant to be a helper and motivator for senior undergraduates, postgraduates, researchers, and practitioners. It lays out important concepts and WSN-related applications; uses appropriate literature to back research and practical issues; and focuses on new trends. Senior undergraduate students can use it to familiarize themselves with conceptual foundations and practical project implementations. For graduate students and researchers, test beds and simulators provide vital insights into analysis methods and tools for WSNs. Lastly, in addition to applications and deployment, practitioners will be able to learn more about WSN manufacturers and components within several platforms and test beds.

A Beginner's Guide to Data Agglomeration and Intelligent Sensing Oct 26 2019 *A Beginner's Guide to Data Agglomeration and Intelligent Sensing* provides an overview of the Sensor Cloud Platform, Converge-casting, and Data Aggregation in support of intelligent sensing and relaying of information. The book begins with a brief introduction on sensors and transducers, giving readers insight into the various types of sensors and how one can work with them. In addition, it gives several real-life examples to help readers properly understand concepts. An overview of concepts such as wireless sensor networks, cloud platforms, and device-to-cloud and sensor cloud architecture are explained briefly, as is data gathering in wireless sensor networks and aggregation procedures. Final sections explore how to process gathered data and relay the data in an intelligent way, including concepts such as

supervised and unsupervised learning, software defined networks, sensor data mining and smart systems. Presents the latest advances in data agglomeration for intelligent sensing
Discusses the basic concepts of sensors, real-life applications of sensors and systems, the protocols and applications of wireless sensor networks, the methodology of sensor data accumulation, and real-life applications of Intelligent Sensor Networks Provides readers with an easy-to-learn and understand introduction to the concepts of the cloud platform, Sensor Cloud and Machine Learning

Systems Modeling: Methodologies and Tools Jun 02 2020 This book covers ideas, methods, algorithms, and tools for the in-depth study of the performance and reliability of dependable fault-tolerant systems. The chapters identify the current challenges that designers and practitioners must confront to ensure the reliability, availability, and performance of systems, with special focus on their dynamic behaviors and dependencies. Topics include network calculus, workload and scheduling; simulation, sensitivity analysis and applications; queuing networks analysis; clouds, federations and big data; and tools. This collection of recent research exposes system researchers, performance analysts, and practitioners to a spectrum of issues so that they can address these challenges in their work.

Future Data and Security Engineering Sep 17 2021 This book constitutes the refereed proceedings of the Third International Conference on Future Data and Security Engineering, FDSE 2016, held in Can Tho City, Vietnam, in November 2016. The 27 revised full papers and 2 short papers presented were carefully reviewed and selected from 115 submissions. They have been organized in the following topical sections: Big Data Analytics and Cloud Data Management; Internet of Things and Applications; Security and Privacy Engineering; Data Protection and Data Hiding; Advances in Authentication and Data Access Control; Access Control in NoSQL and Big Data; Context-based Data Analysis and Applications; Emerging Data Management Systems and Applications.

The Art of Wireless Sensor Networks Jul 28 2022 During the last one and a half decades, wireless sensor networks have witnessed significant growth and tremendous development in both academia and industry. “The Art of Wireless Sensor Networks: Volume 1: Fundamentals” focuses on the fundamentals concepts in the design, analysis, and implementation of wireless sensor networks. It covers the various layers of the lifecycle of this type of network from the physical layer up to the application layer. Its rationale is that the first volume covers contemporary design issues, tools, and protocols for radio-based two-dimensional terrestrial sensor networks. All the book chapters in this volume include up-to-date research work spanning various classic facets of the physical properties and functional behavior of wireless sensor networks, including physical layer, medium access control, data routing, topology management, mobility management, localization, task management, data management, data gathering, security, middleware, sensor technology, standards, and operating systems. This book will be an excellent source of information for both senior undergraduate and graduate students majoring in computer science, computer engineering, electrical engineering, or any related discipline. In addition, computer scientists, researchers, and practitioners in both academia and industry will find this book useful and interesting.

Information Technology - New Generations Jun 22 2019 This volume presents a collection of peer-reviewed, scientific articles from the 14th International Conference on Information Technology – New Generations, held at the University of Nevada at Las Vegas on April 10–12, at Tuscany Suites Hotel in Las Vegas. The Book of Chapters addresses critical areas of information technology including web technology, communications, computing architectures, software engineering, security, and data mining.

Cognitive Radio and Networking for Heterogeneous Wireless Networks Jul 24 2019 This book, written by leading experts from academia and industry, offers a condensed overview on hot topics among the Cognitive Radios and Networks scientific and industrial communities (including those considered within the framework of the European COST Action IC0902) and presents exciting visions for the future. Examples of the subjects considered include the design of new filter bank-based air interfaces for spectrum sharing, medium access control design protocols, the design of cloud-based radio access networks, an evolutionary vision for the development and deployment of cognitive TCP/IP, and regulations relevant to the development of a spectrum sharing market. The concluding chapter comprises a practical, hands-on tutorial for those interested in developing their own research test beds. By focusing on the most recent advances and future avenues, this book will assist researchers in understanding the current issues and solutions in Cognitive Radios and Networks designs.

Towards Digital Optical Networks Sep 25 2019 COST – the acronym for European COoperation in Science and Technology – is the oldest and widest European intergovernmental network for cooperation in - search. Established by the Ministerial Conference in November 1971, COST is presently used by the scientific communities of 35 European countries to coop- ate in common research projects supported by national funds. The funds provided by COST – less than 1% of the total value of the projects – support the COST cooperation networks (COST Actions) through which, with € 30 million per year, more than 30,000 European scientists are involved in - search having a total value which exceeds € 2 billion per year. This is the financial worth of the European added value which COST achieves. A “bottom up approach” (the initiative of launching a COST Action comes from the European scientists themselves), “à la carte participation” (only countries interested in the Action participate), “equality of access” (participation is open also to the scientific communities of countries not belonging to the European - ion) and “flexible structure” (easy implementation and light management of the research initiatives) are the main characteristics of COST.

Security for Multihop Wireless Networks Sep 05 2020 Security for Multihop Wireless Networks provides broad coverage of the security issues facing multihop wireless networks. Presenting the work of a different group of expert contributors in each chapter, it explores security in mobile ad hoc networks, wireless sensor networks, wireless mesh networks, and personal area networks. Detailing technologies and processes that can help you secure your wireless networks, the book covers cryptographic coprocessors, encryption, authentication,

key management, attacks and countermeasures, secure routing, secure medium access control, intrusion detection, epidemics, security performance analysis, and security issues in applications. It identifies vulnerabilities in the physical, MAC, network, transport, and application layers and details proven methods for strengthening security mechanisms in each layer. The text explains how to deal with black hole attacks in mobile ad hoc networks and describes how to detect misbehaving nodes in vehicular ad hoc networks. It identifies a pragmatic and energy efficient security layer for wireless sensor networks and covers the taxonomy of security protocols for wireless sensor communications. Exploring recent trends in the research and development of multihop network security, the book outlines possible defenses against packet-dropping attacks in wireless multihop ad hoc networks. Complete with expectations for the future in related areas, this is an ideal reference for researchers, industry professionals, and academics. Its comprehensive coverage also makes it suitable for use as a textbook in graduate-level electrical engineering programs.

MATLAB Aug 29 2022 This excellent book represents the second part of three-volumes regarding MATLAB- based applications in almost every branch of science. The present textbook contains a collection of 13 exceptional articles. In particular, the book consists of three sections, the first one is devoted to electronic engineering and computer science, the second is devoted to MATLAB/SIMULINK as a tool for engineering applications, the third one is about Telecommunication and communication systems and the last one discusses MATLAB toolboxes.

Computational Intelligence and Efficiency in Engineering Systems Feb 29 2020 This carefully edited and reviewed volume addresses the increasingly popular demand for seeking more clarity in the data that we are immersed in. It offers excellent examples of the intelligent ubiquitous computation, as well as recent advances in systems engineering and informatics. The content represents state-of-the-art foundations for researchers in the domain of modern computation, computer science, system engineering and networking, with many examples that are set in industrial application context. The book includes the carefully selected best contributions to APCASE 2014, the 2nd Asia-Pacific Conference on Computer Aided System Engineering, held February 10-12, 2014 in South Kuta, Bali, Indonesia. The book consists of four main parts that cover data-oriented engineering science research in a wide range of applications: computational models and knowledge discovery; communications networks and cloud computing; computer-based systems; and data-oriented and software-intensive systems.

Performance Evaluation: Metrics, Models and Benchmarks Nov 07 2020 This book constitutes the thoroughly refereed proceedings of the SPEC International Performance Evaluation Workshop, SIPEW 2008, held in Darmstadt, Germany, in June 2008 . The 17 revised full papers presented were carefully selected out of 39 submissions for inclusion in the book. The papers are organized in topical sections on models for software performance engineering; benchmarks and workload characterization; Web services and service-oriented architectures; power and performance; and profiling, monitoring and optimization.

Discrete Event Simulations Aug 17 2021 Considered by many authors as a technique for modelling stochastic, dynamic and discretely evolving systems, this technique has gained widespread acceptance among the practitioners who want to represent and improve complex systems. Since DES is a technique applied in incredibly different areas, this book reflects many different points of view about DES, thus, all authors describe how it is understood and applied within their context of work, providing an extensive understanding of what DES is. It can be said that the name of the book itself reflects the plurality that these points of view represent. The book embraces a number of topics covering theory, methods and applications to a wide range of sectors and problem areas that have been categorised into five groups. As well as the previously explained variety of points of view concerning DES, there is one additional thing to remark about this book: its richness when talking about actual data or actual data based analysis. When most academic areas are lacking application cases, roughly the half part of the chapters included in this book deal with actual problems or at least are based on actual data. Thus, the editor firmly believes that this book will be interesting for both beginners and practitioners in the area of DES.

Information Science and Applications Jan 10 2021 This proceedings volume provides a snapshot of the latest issues encountered in technical convergence and convergences of security technology. It explores how information science is core to most current research, industrial and commercial activities and consists of contributions covering topics including Ubiquitous Computing, Networks and Information Systems, Multimedia and Visualization, Middleware and Operating Systems, Security and Privacy, Data Mining and Artificial Intelligence, Software Engineering, and Web Technology. The proceedings introduce the most recent information technology and ideas, applications and problems related to technology convergence, illustrated through case studies, and reviews converging existing security techniques. Through this volume, readers will gain an understanding of the current state-of-the-art in information strategies and technologies of convergence security. The intended readership are researchers in academia, industry, and other research institutes focusing on information science and technology.

Handbook of Research on Discrete Event Simulation Environments: Technologies and Applications Mar 24 2022 "This book provides a comprehensive overview of theory and practice in simulation systems focusing on major breakthroughs within the technological arena, with particular concentration on the accelerating principles, concepts and applications"--Provided by publisher.

Design Frameworks for Wireless Networks Mar 31 2020 This book provides an overview of the current state of the art in wireless networks around the globe, focusing on utilizing the

latest artificial intelligence and soft computing techniques to provide design frameworks for wireless networks. These techniques play a vital role in developing a more robust algorithm suitable for the dynamic and heterogeneous environment, making the network self-managed, self-operational, and self-configurational, and efficiently reducing uncertainties and imprecise information.

Concepts, Applications, Experimentation and Analysis of Wireless Sensor Networks Oct 19 2021 The new edition of this popular book has been transformed into a hands-on textbook, focusing on the principles of wireless sensor networks (WSNs), their applications, their protocols and standards, and their analysis and test tools; a meticulous care has been accorded to the definitions and terminology. To make WSNs felt and seen, the adopted technologies as well as their manufacturers are presented in detail. In introductory computer networking books, chapters sequencing follows the bottom up or top down architecture of the seven layers protocol. This book starts some steps later, with chapters ordered based on a topic's significance to the elaboration of wireless sensor networks (WSNs) concepts and issues. With such a depth, this book is intended for a wide audience, it is meant to be a helper and motivator, for both the senior undergraduates, postgraduates, researchers, and practitioners; concepts and WSNs related applications are laid out, research and practical issues are backed by appropriate literature, and new trends are put under focus. For senior undergraduate students, it familiarizes readers with conceptual foundations, applications, and practical project implementations. For graduate students and researchers, transport layer protocols and cross-layering protocols are presented and testbeds and simulators provide a must follow emphasis on the analysis methods and tools for WSNs. For practitioners, besides applications and deployment, the manufacturers and components of WSNs at several platforms and testbeds are fully explored.

Handbook of Research on Advances in Data Analytics and Complex Communication Networks Jan 22 2022 "This edited book discusses data analytics and complex communication networks and recommends new methodologies, system architectures, and other solutions to prevail over the current limitations faced by the field"--

Simulation and Modeling Methodologies, Technologies and Applications May 02 2020 The present book includes a set of selected extended papers from the 4th International Conference on Simulation and Modeling Methodologies, Technologies and Applications (SIMULTECH 2014), held in Vienna, Austria, from 28 to 30 August 2014. The conference brought together researchers, engineers and practitioners interested in methodologies and applications of modeling and simulation. New and innovative solutions are reported in this book. SIMULTECH 2014 received 167 submissions, from 45 countries, in all continents. After a double blind paper review performed by the Program Committee, 23% were accepted as full papers and thus selected for oral presentation. Additional papers were accepted as short papers and posters. A further selection was made after the Conference, based also on the assessment of presentation quality and audience interest, so that this book includes the extended and revised versions of the very best papers of SIMULTECH 2014. Commitment to high quality standards is a major concern of SIMULTECH that will be maintained in the next editions, considering not only the stringent paper acceptance ratios but also the quality of the program committee, keynote lectures, participation level and logistics.

Robot Operating System (ROS) Nov 27 2019 This book is the sixth volume of the successful book series on Robot Operating System: The Complete Reference. The objective of the book is to provide the reader with comprehensive coverage of the Robot Operating Systems (ROS) and the latest trends and contributed systems. ROS is currently considered as the primary development framework for robotics applications. There are seven chapters organized into three parts. Part I presents two chapters on the emerging ROS 2.0 framework; in particular, ROS 2.0 is become increasingly mature to be integrated into the industry. The first chapter from Amazon AWS deals with the challenges that ROS 2 developers will face as they transition their system to be commercial-grade. The second chapter deals with reactive programming for both ROS1 and ROS. In Part II, two chapters deal with advanced robotics, namely on the usage of robots in farms, and the second deals with platooning systems. Part III provides three chapters on ROS navigation. The first chapter deals with the use of deep learning for ROS navigation. The second chapter presents a detailed tuning guide on ROS navigation and the last chapter discusses SLAM for ROS applications. I believe that this book is a valuable companion for ROS users and developers to learn more ROS capabilities and features.

Information Security Feb 20 2022 This book constitutes the refereed proceedings of the 9th International Conference on Information Security, ISC 2006, held on Samos Island, Greece in August/September 2006. The 38 revised full papers presented were carefully reviewed and selected from 188 submissions. The papers are organized in topical sections.

Simulation in Computer Network Design and Modeling: Use and Analysis May 26 2022 "This book reviews methodologies in computer network simulation and modeling, illustrates the benefits of simulation in computer networks design, modeling, and analysis, and identifies the main issues that face efficient and effective computer network simulation"--Provided by publisher.

Embedded Systems and Artificial Intelligence Aug 05 2020 This book gathers selected research papers presented at the First International Conference on Embedded Systems and Artificial Intelligence (ESAI 2019), held at Sidi Mohamed Ben Abdellah University, Fez, Morocco, on 2–3 May 2019. Highlighting the latest innovations in Computer Science, Artificial Intelligence, Information Technologies, and Embedded Systems, the respective papers will encourage and inspire researchers, industry professionals, and policymakers to put these methods into practice.

A Framework for Quality of Service in Vehicle-to-Pedestrian Safety Communication Apr 12 2021 Pedestrians and bicyclists, also known as Vulnerable Road Users (VRUs), are

one of the weakest components of Intelligent Transportation Systems from a safety perspective. However, with the advent of new communication technologies, VRU protection may no longer be dependent solely on the vehicle's safety systems. VRUs may share their location information with the surrounding vehicles to increase awareness of their presence. Such communication among vehicles and VRUs is referred to as Vehicle-to-Pedestrian (V2P) communication. Although the V2P system may be built upon the existing Vehicle-to-Vehicle communication system, it has its own set of challenges, such as different VRU mobility characteristics, energy-constrained devices, and VRU density. Therefore, there needs to be a V2P system model which is adapted to the VRU characteristics. This dissertation tackles this challenge by proposing a framework that enables scalability, reliability, and energy efficiency for VRU communication.

Fundamentals of Sensor Network Programming Jun 14 2021 This book provides the basics needed to develop sensor network software and supplements it with many case studies covering network applications. It also examines how to develop onboard applications on individual sensors, how to interconnect these sensors, and how to form networks of sensors, although the major aim of this book is to provide foundational principles of developing sensor networking software and critically examine sensor network applications.

Networking and Telecommunications: Concepts, Methodologies, Tools, and Applications Apr 24 2022 "This multiple-volume publications exhibits the most up-to-date collection of research results and recent discoveries in the transfer of knowledge access across the globe"--Provided by publisher.

Recent Advances in Network Simulation Sep 29 2022 This book provides a comprehensive introduction to the OMNeT++ simulation environment and an overview of its ecosystem of ever-growing frameworks, which provide simulation models for diverse communication systems, protocols, and standards. The book covers the most recent advances of the three key points in the OMNeT++ environment: (1) The latest features that are being added to OMNeT++ itself, including improvements in the visualization options, in data processing, etc. (2) A comprehensive description of the current state of development and the work in progress of the main simulation frameworks, covering several aspects of communication such as vehicular, cellular, and sensor networks. (3) The latest advances and novel developments coming from a large research community. The presentation is guided through use cases and examples, always keeping in mind the practical and research purposes of the simulation process. Includes an introduction to the OMNeT++ simulation framework and its main features; Gives a comprehensive overview of ongoing research topics that exploits OMNeT++ as the simulation environment; Provides examples and uses cases focusing on the practical aspects of simulation.

Modeling and Tools for Network Simulation Oct 31 2022 A crucial step during the design and engineering of communication systems is the estimation of their performance and behavior; especially for mathematically complex or highly dynamic systems network simulation is particularly useful. This book focuses on tools, modeling principles and state-of-the-art models for discrete-event based network simulations, the standard method applied today in academia and industry for performance evaluation of new network designs and architectures. The focus of the tools part is on two distinct simulation engines: OmNet++ and ns-3, while it also deals with issues like parallelization, software integration and hardware simulations. The parts dealing with modeling and models for network simulations are split into a wireless section and a section dealing with higher layers. The wireless section covers all essential modeling principles for dealing with physical layer, link layer and wireless channel behavior. In addition, detailed models for prominent wireless systems like IEEE 802.11 and IEEE 802.16 are presented. In the part on higher layers, classical modeling approaches for the network layer, the transport layer and the application layer are presented in addition to modeling approaches for peer-to-peer networks and topologies of networks. The modeling parts are accompanied with catalogues of model implementations for a large set of different simulation engines. The book is aimed at master students and PhD students of computer science and electrical engineering as well as at researchers and practitioners from academia and industry that are dealing with network simulation at any layer of the protocol stack.

End-to-End Quality of Service Over Heterogeneous Networks Mar 12 2021 This book, one of the first of its kind, presents mechanisms, protocols, and system architectures needed to attain end-to-end Quality of Service over heterogeneous wired and wireless networks in the Internet.