

# 2016 Ieee Vanets Project List Based On Ns2 Citl

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*Vehicular Ad Hoc Networks* - Claudia Campolo 2015

This book presents vehicular ad-hoc networks (VANETs) from the their onset, gradually going into technical details, providing a clear understanding of both theoretical foundations and more practical investigation. The editors gathered top-ranking authors to provide comprehensiveness and timely content; the invited authors were carefully selected from a list of who's who in the respective field of interest: there are as many from Academia as from Standardization and Industry sectors from around the world. The covered topics are organized around five Parts starting from an historical overview of vehicular communications and standardization/harmonization activities (Part I), then progressing to the theoretical foundations of VANETs and a description of the day-one standard-compliant solutions (Part II), hence going into details of vehicular networking and security (Part III) and to the tools to study VANETs, from mobility and channel models, to network simulators and field trial methodologies (Part IV), and finally looking into the future of VANETs by investigating alternative, complementary communication technologies, innovative networking paradigms and visionary applications (Part V). The way the content is organized, with a differentiated level of technical details, makes the book a valuable reference for a large pool of target readers ranging from undergraduate, graduate and PhD students, to wireless scientists and engineers, to service providers and stakeholders in the automotive, ITS, ICT sectors.

*Intelligent Vehicular Networks and Communications* - Anand Paul 2016-09-02

Intelligent Vehicular Network and Communications: Fundamentals, Architectures and Solutions begins with discussions on how the transportation system has transformed into today's Intelligent Transportation System (ITS). It explores the design goals, challenges, and frameworks for modeling an ITS network, discussing vehicular network model technologies, mobility management architectures, and routing mechanisms and protocols. It looks at the Internet of Vehicles, the vehicular cloud, and vehicular network security and privacy issues. The book investigates cooperative vehicular systems, a promising solution for addressing current and future traffic safety needs, also exploring cooperative cognitive intelligence, with special attention to spectral efficiency, spectral scarcity, and high mobility. In addition, users will find a thorough examination of experimental work in such areas as Controller Area Network protocol and working function of On Board Unit, as well as working principles of roadside unit and other infrastructural nodes. Finally, the book examines big data in vehicular networks, exploring various business models, application scenarios, and real-time analytics, concluding with a look at autonomous vehicles. Proposes cooperative, cognitive, intelligent vehicular networks Examines how intelligent transportation systems make more efficient transportation in urban environments Outlines next generation vehicular networks technology

**Introduction to Network Simulator NS2** - Teerawat Issariyakul 2011-12-02

Introduction to Network Simulator NS2 is a primer providing materials for NS2 beginners, whether students, professors, or researchers for understanding the architecture of Network Simulator 2 (NS2) and for incorporating simulation modules into NS2. The authors discuss the simulation architecture and the key components of NS2 including simulation-related objects, network objects, packet-related objects, and helper objects. The NS2 modules included within are nodes, links, SimpleLink objects, packets, agents, and applications. Further, the book covers three helper modules: timers, random number generators, and error models. Also included are chapters on summary of debugging, variable and packet tracing, result

compilation, and examples for extending NS2. Two appendices provide the details of scripting language Tcl, OTcl and AWK, as well object oriented programming used extensively in NS2.

*Security, Privacy, and Anonymity in Computation, Communication, and Storage* - Guojun Wang 2016-11-09

This book constitutes the refereed proceedings of the 9th International Conference on Security, Privacy and Anonymity in Computation, Communication and Storage, SpaCCS 2016, held in Zhangjiajie, China, in November 2016. The 40 papers presented in this volume were carefully reviewed and selected from 110 submissions. They are organized in topical sections including security algorithms and architectures, privacy-aware policies, regulations and techniques, anonymous computation and communication, encompassing fundamental theoretical approaches, practical experimental projects, and commercial application systems for computation, communication and storage.

**Big Data** - Min Chen 2014-05-05

This Springer Brief provides a comprehensive overview of the background and recent developments of big data. The value chain of big data is divided into four phases: data generation, data acquisition, data storage and data analysis. For each phase, the book introduces the general background, discusses technical challenges and reviews the latest advances. Technologies under discussion include cloud computing, Internet of Things, data centers, Hadoop and more. The authors also explore several representative applications of big data such as enterprise management, online social networks, healthcare and medical applications, collective intelligence and smart grids. This book concludes with a thoughtful discussion of possible research directions and development trends in the field.  **Big Data: Related Technologies, Challenges and Future Prospects** is a concise yet thorough examination of this exciting area. It is designed for researchers and professionals interested in big data or related research. Advanced-level students in computer science and electrical engineering will also find this book useful.

**Multihop Wireless Networks** - Kai Zeng 2011-08-01

This book provides an introduction to opportunistic routing an emerging technology designed to improve the packet forwarding reliability, network capacity and energy efficiency of multihop wireless networks This book presents a comprehensive background to the technological challenges lying behind opportunistic routing. The authors cover many fundamental research issues for this new concept, including the basic principles, performance limit and performance improvement of opportunistic routing compared to traditional routing, energy efficiency and distributed opportunistic routing protocol design, geographic opportunistic routing, opportunistic broadcasting, and security issues associated with opportunistic routing, etc. Furthermore, the authors discuss technologies such as multi-rate, multi-channel, multi-radio wireless communications, energy detection, channel measurement, etc. The book brings together all the new results on this topic in a systematic, coherent and unified presentation and provides a much needed comprehensive introduction to this topic.  **Key Features:** Addresses opportunistic routing, an emerging technology designed to improve the packet forwarding reliability, network capacity and energy efficiency of multihop wireless networks Discusses the technological challenges lying behind this new technology, and covers a wide range of practical implementation issues Explores many fundamental research issues for this new concept, including the basic principles of opportunistic routing, performance limits and performance improvement, and compares them to traditional routing (e.g. energy efficiency and distributed opportunistic routing

protocol design, broadcasting, and security issues) Covers technologies such as multi-rate, multi-channel, multi-radio wireless communications, energy detection, channel measurement, etc. This book provides an invaluable reference for researchers working in the field of wireless networks and wireless communications, and Wireless professionals. Graduate students will also find this book of interest.

*Intrusion Detection Networks* - Carol Fung 2013-11-19

The rapidly increasing sophistication of cyber intrusions makes them nearly impossible to detect without the use of a collaborative intrusion detection network (IDN). Using overlay networks that allow an intrusion detection system (IDS) to exchange information, IDNs can dramatically improve your overall intrusion detection accuracy. *Intrusion Detection Networks: A Key to Collaborative Security* focuses on the design of IDNs and explains how to leverage effective and efficient collaboration between participant IDSs. Providing a complete introduction to IDSs and IDNs, it explains the benefits of building IDNs, identifies the challenges underlying their design, and outlines possible solutions to these problems. It also reviews the full-range of proposed IDN solutions—analyzing their scope, topology, strengths, weaknesses, and limitations. Includes a case study that examines the applicability of collaborative intrusion detection to real-world malware detection scenarios Illustrates distributed IDN architecture design Considers trust management, intrusion detection decision making, resource management, and collaborator management The book provides a complete overview of network intrusions, including their potential damage and corresponding detection methods. Covering the range of existing IDN designs, it elaborates on privacy, malicious insiders, scalability, free-riders, collaboration incentives, and intrusion detection efficiency. It also provides a collection of problem solutions to key IDN design challenges and shows how you can use various theoretical tools in this context. The text outlines comprehensive validation methodologies and metrics to help you improve efficiency of detection, robustness against malicious insiders, incentive-compatibility for all participants, and scalability in network size. It concludes by highlighting open issues and future challenges.

*Connected Environments for the Internet of Things* - Zaigham Mahmood 2018-01-05

This comprehensive text/reference presents a broad-ranging overview of device connectivity in distributed computing environments, supporting the vision of an Internet of Things (IoT). Expert perspectives are provided by an international selection of researchers from both industry and academia, covering issues of communication, security, privacy, interoperability, networking, access control, and authentication. In addition to discussing state-of-the-art research and practice, the book includes corporate analyses offering a balanced view of benefits and limitations, and numerous case studies illustrating the challenges and practical solutions. Topics and features: discusses issues of security and privacy in connected environments, with a specific focus on the impact of the IoT paradigm on enterprise information systems; examines the challenges of managing big data in IoT environments, and proposes cloud computing-based solutions to the limitations inherent in the IoT paradigm; suggests approaches to overcome service-level interoperability problems in the IoT environment; introduces a mobile IoT simulator designed to evaluate the behavior of IoT systems, in addition to a novel approach to manage hyper-connectivity in the IoT; describes the use of the Essence framework to model software development methods, and highlights the benefits of integrating data from smart buildings and IoT devices; presents an asymmetric schema matching mechanism for IoT interoperability, and explores the topic of automatic provenance capture at the middleware level; reviews emerging network topologies and communication technologies, and advises on the adoption of a data distribution service as a middleware platform for IoT systems. This practically-oriented volume serves as a complete reference for students, researchers and practitioners of distributed computing, providing insights into the latest approaches, technologies, and frameworks relevant to the IoT environment.

*Intelligent Environments 2016* - P. Novais 2016-10-12

The term Intelligent Environments (IEs) refers to physical spaces in which IT and other pervasive computing technologies are combined and used to achieve specific goals for the user, the environment, or both. The ultimate objective of IEs is to enrich user experience, improve management of the environment in question and increase user awareness. This book presents the proceedings of the following workshops, which formed part of the 12th International Conference on Intelligent Environments (IE16), held in London,

UK, in September 2016: the 5th International Workshop on Smart Offices and Other Workplaces (SOOW'16); the 5th International Workshop on the Reliability of Intelligent Environments (WoRIE'16); the 1st International Workshop on Legal Issues in Intelligent Environments (LIIE'2016); the 2nd International Symposium on Future Intelligent Educational Environments and Learning (SOFIEE'16); the 2nd International Workshop on Future Internet and Smart Networks (FI&SN'2016); the International Workshop on Intelligent Environments Supporting Healthcare and Well-being (WISHWell'2016); the International Workshop on Computation Sustainability, Technologies and Applications (CoSTA'2016); the Creative Science 2016 (CS'16) and Cloud-of-Things 2016 (CoT'16); the Workshop on Wireless Body Area Networks for Personal Monitoring in Intelligent Environments (WBAN-PMIE); and the Physical Computing Workshop. The workshops focused on the development of advanced intelligent environments, as well as newly emerging and rapidly evolving topics, emphasizing the multi-disciplinary and transversal aspects of IEs, as well as cutting-edge topics. The book will be of interest to all those whose work involves them in the use of intelligent environments.

**Advances in Communication Systems and Networks** - J. Jayakumari 2020-06-13

This book presents the selected peer-reviewed papers from the International Conference on Communication Systems and Networks (ComNet) 2019. Highlighting the latest findings, ideas, developments and applications in all areas of advanced communication systems and networking, it covers a variety of topics, including next-generation wireless technologies such as 5G, new hardware platforms, antenna design, applications of artificial intelligence (AI), signal processing and optimization techniques. Given its scope, this book can be useful for beginners, researchers and professionals working in wireless communication and networks, and other allied fields.

*Trust and Trustworthy Computing* - Mauro Conti 2015-08-13

This book constitutes the refereed proceedings of the 8th International Conference on Trust and Trustworthy Computing, TRUST 2015, held in Heraklion, Crete, Greece, in August 2015. The 15 full papers and 3 short papers presented in this volume were carefully reviewed and selected from 42 submissions. They were organized in topical sections named: hardware-enhanced trusted execution; trust and users; trusted systems and services; trust and privacy; and building blocks for trust. There are 7 two-page abstracts of poster papers included in the back matter of the volume.

*Deep Learning Applications for Cyber Security* - Mamoun Alazab 2019-08-14

Cybercrime remains a growing challenge in terms of security and privacy practices. Working together, deep learning and cyber security experts have recently made significant advances in the fields of intrusion detection, malicious code analysis and forensic identification. This book addresses questions of how deep learning methods can be used to advance cyber security objectives, including detection, modeling, monitoring and analysis of as well as defense against various threats to sensitive data and security systems. Filling an important gap between deep learning and cyber security communities, it discusses topics covering a wide range of modern and practical deep learning techniques, frameworks and development tools to enable readers to engage with the cutting-edge research across various aspects of cyber security. The book focuses on mature and proven techniques, and provides ample examples to help readers grasp the key points.

*Software Defined Internet of Everything* - Gagangeet Singh Aujla 2022-01-14

This book provides comprehensive discussion on key topics related to the usage and deployment of software defined networks (SDN) in Internet of Everything applications like, healthcare systems, data centers, edge/fog computing, vehicular networks, intelligent transportation systems, smart grids, smart cities and more. The authors provide diverse solutions to overcome challenges of conventional network binding in various Internet of Everything applications where there is need of an adaptive, agile, and flexible network backbone. The book showcases different deployment models, algorithms and implementations related to the usage of SDN in Internet of Everything applications along with the pros and cons of the same. Even more, this book provides deep insights into the architecture of software defined networking specifically about the layered architecture and different network planes, logical interfaces, and programmable operations. The need of network virtualization and the deployment models for network function virtualization is also included with an aim towards the design of interoperable network

architectures by researchers in future. Uniquely, the authors find hands on practical implementation, deployment scenarios and use cases for various software defined networking architectures in Internet of Everything applications like healthcare networks, Internet of Things, intelligent transportation systems, smart grid, underwater acoustic networks and many more. In the end, design and research challenges, open issues, and future research directions are provided in this book for a wide range of readers

**Multimedia Networking** - Jenq-Neng Hwang 2009-04-16

This authoritative guide to multimedia networking balances just the right amount of theory with practical design and integration knowledge.

Security of Self-Organizing Networks - Al-Sakib Khan Pathan 2016-04-19

Reflecting recent advancements, Security of Self-Organizing Networks: MANET, WSN, WMN, VANET explores wireless network security from all angles. It begins with a review of fundamental security topics and often-used terms to set the foundation for the following chapters. Examining critical security issues in a range of wireless networks, the book proposes specific solutions to security threats. Ideal for those with a basic understanding of network security, the text provides a clear examination of the key aspects of security in self-organizing networks and other networks that use wireless technology for communications. The book is organized into four sections for ease of reference: General Topics—Security of Wireless and Self-Organizing Networks Mobile Ad-Hoc Network and Vehicular Ad-Hoc Network Security Wireless Sensor Network Security Wireless Mesh Network Security Highlighting potential threats to network security, most chapters are written in a tutorial manner. However, some of the chapters include mathematical equations and detailed analysis for advanced readers. Guiding you through the latest trends, issues, and advances in network security, the text includes questions and sample answers in each chapter to reinforce understanding.

Intelligent Transportation Systems - Muhammad Alam 2016-01-20

This book presents cutting-edge work on the most challenging research issues concerning intelligent transportation systems (ITS), introducing selected, highly relevant advanced research on scheduling and real-time communication for vehicular networks, as well as fault tolerance, test beds and simulations for ITS. The authors define new architectures that support cooperative sensing in ITS and offer guidance for the development of a reference end-to-end implementation. The presented results allow advanced traffic and travel management strategies to be formulated on the basis of reliable and real-time input data. The effectiveness of these new strategies, together with the proposed systems, is assessed in field trials and via simulations. The chapters in this book detail new research findings, algorithms, protocols, and the development of an implementation platform for ITS that merges and integrates heterogeneous data sources into a common system. In addition, they provide a set of advanced tools for the control, monitoring, simulation, and prediction of traffic that result in safer, more sustainable, and less congested roads. Work undertaken within the framework of the FP7 project ICSI (Intelligent Cooperative Sensing for Improved traffic efficiency) is also included in the research activities addressed.

**Smart Computing and Informatics** - Suresh Chandra Satapathy 2017-12-20

This volume contains 74 papers presented at SCI 2016: First International Conference on Smart Computing and Informatics. The conference was held during 3-4 March 2017, Visakhapatnam, India and organized communally by ANITS, Visakhapatnam and supported technically by CSI Division V - Education and Research and PRF, Vizag. This volume contains papers mainly focused on applications of advanced intelligent techniques to video processing, medical imaging, machine learning, sensor technologies, and network security.

**Information Security and Privacy** - Joseph K. Liu 2016-06-29

The two-volume set LNCS 9722 and LNCS 9723 constitutes the refereed proceedings of the 21st Australasian Conference on Information Security and Privacy, ACISP 2016, held in Melbourne, VIC, Australia, in July 2016. The 52 revised full and 8 short papers presented together with 6 invited papers in this double volume were carefully revised and selected from 176 submissions. The papers of Part I (LNCS 9722) are organized in topical sections on National Security Infrastructure; Social Network Security; Bitcoin Security; Statistical Privacy; Network Security; Smart City Security; Digital Forensics; Lightweight Security; Secure Batch Processing; Pseudo Random/One-Way Function; Cloud Storage Security;

Password/QR Code Security; and Functional Encryption and Attribute-Based Cryptosystem. Part II (LNCS 9723) comprises topics such as Signature and Key Management; Public Key and Identity-Based Encryption; Searchable Encryption; Broadcast Encryption; Mathematical Primitives; Symmetric Cipher; Public Key and Identity-Based Encryption; Biometric Security; Digital Forensics; National Security Infrastructure; Mobile Security; Network Security; and Pseudo Random/One-Way Function.

Computing Systems for Autonomous Driving - Weisong Shi 2021-11-15

This book on computing systems for autonomous driving takes a comprehensive look at the state-of-the-art computing technologies, including computing frameworks, algorithm deployment optimizations, systems runtime optimizations, dataset and benchmarking, simulators, hardware platforms, and smart infrastructures. The objectives of level 4 and level 5 autonomous driving require colossal improvement in the computing for this cyber-physical system. Beginning with a definition of computing systems for autonomous driving, this book introduces promising research topics and serves as a useful starting point for those interested in starting in the field. In addition to the current landscape, the authors examine the remaining open challenges to achieve L4/L5 autonomous driving. Computing Systems for Autonomous Driving provides a good introduction for researchers and prospective practitioners in the field. The book can also serve as a useful reference for university courses on autonomous vehicle technologies. This book on computing systems for autonomous driving takes a comprehensive look at the state-of-the-art computing technologies, including computing frameworks, algorithm deployment optimizations, systems runtime optimizations, dataset and benchmarking, simulators, hardware platforms, and smart infrastructures. The objectives of level 4 and level 5 autonomous driving require colossal improvement in the computing for this cyber-physical system. Beginning with a definition of computing systems for autonomous driving, this book introduces promising research topics and serves as a useful starting point for those interested in starting in the field. In addition to the current landscape, the authors examine the remaining open challenges to achieve L4/L5 autonomous driving. Computing Systems for Autonomous Driving provides a good introduction for researchers and prospective practitioners in the field. The book can also serve as a useful reference for university courses on autonomous vehicle technologies.

**Vehicular Ad-hoc Networks for Smart Cities** - Anis Laouiti 2020-04-07

This book presents selected papers from the Third International Workshop on Vehicular Ad-hoc Networks for Smart Cities, Paris, 2019. Future smart cities are well placed to profit from extraordinary mobile infrastructures. IWVSC'2019 brings together experts from both academia and industry to discuss recent developments in vehicular networking technologies and their interaction with future smart cities in order to promote further research activities and challenges.

**Wireless Sensor Networks** - Hossam Mahmoud Ahmad Fahmy 2020-01-25

This second book by the author on WSNs focuses on the concepts of energy, and energy harvesting and management techniques. Definitions and terminologies are made clear without leaning on the relaxing assumption that they are already known or easily reachable, the reader is not to be diverted from the main course. Neatly drawn figures assist in viewing and imagining the offered topics. To make energy related topics felt and seen, the adopted technologies as well as their manufacturers are presented in details. With such a depth, this book is intended for a wide audience, it is meant to be helper and motivator, for the senior undergraduates, postgraduates, researchers, and practitioners; concepts and energy 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 with conceptual foundations and practical projects implementations. Also, it is intended for graduate students working on their thesis and in need of specific knowledge on WSNs and the related energy harvesting and management techniques. Moreover, it is targeting researchers and practitioners interested in features and applications of WSNs, and on the available energy harvesting and management projects and testbeds. Exercises at the end of each chapter are not just questions and answers; they are not limited to recapitulate ideas. Their design objective is not bound to be a methodical review of the provided concepts, but rather as a motivator for lot more of searching, finding, and comparing beyond what has been presented in the book.

**Futuristic Trends in Network and Communication Technologies** - Pradeep Kumar Singh 2018-12-24  
This book constitutes the refereed proceedings of the First International Conference on Futuristic Trends in

Network and Communication Technologies, FTNCT 2018, held in Solan, India, in February 2018. The 37 revised full papers presented were carefully reviewed and selected from 239 submissions. The prime aim of the conference is to invite researchers from different domains of network and communication technologies to a single platform to showcase their research ideas. The selected papers are organized in topical sections on communication technologies, Internet of Things (IoT), network technologies, and wireless networks.

**Building Wireless Sensor Networks** - Smain Femmam 2017-09-26

Building Wireless Sensor Networks: Application to Routing and Data Diffusion discusses challenges involved in securing routing in wireless sensor networks with new hybrid topologies. An analysis of the security of real time data diffusion—a protocol for routing in wireless sensor networks—is provided, along with various possible attacks and possible countermeasures. Different applications are introduced, and new topologies are developed. Topics include audio video bridging (AVB) switched Ethernet, which uses the representation of a network of wireless sensors by a grayscale image to construct routing protocols, thereby minimizing energy consumption and data sharing in vehicular ad-hoc networks. Existing wireless networks aim to provide communication services between vehicles by enabling the vehicular networks to support wide range applications. New topologies are proposed first, based on the graphiton models, then the wireless sensor networks (WSN) based on the IEEE 802.15.4 standard (ZigBee sensors, and finally the Pancake graphs as an alternative to the Hypercube for interconnecting processors in parallel computer networks. Presents an analysis and protocol for routing in wireless sensor networks Presents ways to prevent attacks against this protocol Introduces different applications Develops new topologies

**Recent Advances in Electrical and Information Technologies for Sustainable Development** -

Soumia El Hani 2019-02-08

The book includes the best extended papers which were selected from the 3rd International Conference of Electrical and Information Technologies (ICEIT 2017, Morocco). The book spans two inter-related research domains which shaped modern societies, solved many of their development problems, and contributed to their unprecedented economic growth and social welfare. Selected papers are based on original and high quality research. They were peer reviewed by experts in the field. They are grouped into five parts. Part I deals with Power System and Electronics topics that include Power Electronics & Energy Conversion, Actuators & Micro/Nanotechnology, etc. Part II relates to Control Systems and their applications. Part III concerns the topic of Information Technology that basically includes Smart Grid, Information Security, Cloud Computing Distributed, Big Data, etc. Part IV discusses Telecommunications and Vehicular Technologies topics that include, Green Networking and Communications, Wireless Ad-hoc and Sensor Networks, etc. Part V covers Green Applications and Interdisciplinary topics, that include intelligent and Green Technologies for Transportation Systems, Smart Cities, etc. This book offers a good opportunity for young researchers, novice scholars and whole academic sphere to explore new trends in Electrical and information Technologies.

**Connected Health in Smart Cities** - Abdulmotaleb El Saddik 2019-12-03

This book reports on the theoretical foundations, fundamental applications and latest advances in various aspects of connected services for health information systems. The twelve chapters highlight state-of-the-art approaches, methodologies and systems for the design, development, deployment and innovative use of multisensory systems and tools for health management in smart city ecosystems. They exploit technologies like deep learning, artificial intelligence, augmented and virtual reality, cyber physical systems and sensor networks. Presenting the latest developments, identifying remaining challenges, and outlining future research directions for sensing, computing, communications and security aspects of connected health systems, the book will mainly appeal to academic and industrial researchers in the areas of health information systems, smart cities, and augmented reality.

**Security, Privacy, Trust, and Resource Management in Mobile and Wireless Communications** -

Rawat, Danda B. 2013-10-31

"This book examines the current scope of theoretical and practical applications on the security of mobile and wireless communications, covering fundamental concepts of current issues, challenges, and solutions in wireless and mobile networks"--Provided by publisher.

*From Visual Surveillance to Internet of Things* - Lavanya Sharma 2019-10-16

*From Visual Surveillance to Internet of Things: Technology and Applications* is an invaluable resource for students, academicians and researchers to explore the utilization of Internet of Things with visual surveillance and its underlying technologies in different application areas. Using a series of present and future applications - business insights, indoor-outdoor securities, smart grids, human detection and tracking, intelligent traffic monitoring, e-health department and many more - this book will support readers to obtain a deeper knowledge in implementing IoT with visual surveillance. The book offers comprehensive coverage of the most essential topics, including: The rise of machines and communications to IoT (3G, 5G) Tools and technologies of IoT with visual surveillance IoT with visual surveillance for real-time applications IoT architectures Challenging issues and novel solutions for realistic applications Mining and tracking of motion-based object data Image processing and analysis into the unified framework to understand both IOT and computer vision applications This book will be an ideal resource for IT professionals, researchers, under- or post-graduate students, practitioners, and technology developers who are interested in gaining a deeper knowledge in implementing IoT with visual surveillance, critical applications domains, technologies, and solutions to handle relevant challenges. Dr. Lavanya Sharma is an Assistant Professor in the Amity Institute of Information Technology at Amity University UP, Noida, India. She is a recipient of several prestigious awards during her academic career. She is an active nationally-recognized researcher who has published numerous papers in her field. She has contributed as an Organizing Committee member and session chair at Springer and IEEE conferences. Prof. Pradeep K. Garg worked as a Vice Chancellor, Uttarakhand Technical University, Dehradun. Presently he is working in the department of Civil Engineering, IIT Roorkee as a professor. Prof. Garg has published more than 300 technical papers in national and international conferences and journals. He has completed 26 research projects funded by various government agencies, guided 27 PhD candidates, and provided technical services to 84 consultancy projects on various aspects of Civil Engineering.

**VANET** - Hannes Hartenstein 2009-11-04

This book provides an invaluable introduction to inter-vehicular communications, demonstrating the networking and communication technologies for reducing fatalities, improving transportation efficiency, and minimising environmental impact. This book addresses the applications and technical aspects of radio-based vehicle-to-vehicle and vehicle-to-infrastructure communication that can be established by short- and medium range communication based on wireless local area network technology (primarily IEEE 802.11). It contains a coherent treatment of the important topics and technologies contributed by leading experts in the field, covering the potential applications for and their requirements on the communications system. The authors cover physical and medium access control layer issues with focus on IEEE 802.11-based systems, and show how many of the applications benefit when information is efficiently disseminated, and the techniques that provide attractive data aggregation (also includes design of the corresponding middleware). The book also considers issues such as IT-security (means and fundamental trade-off between security and privacy), current standardization activities such as IEEE 802.11p, and the IEEE 1609 standard series. Key Features: Covers the state-of-the-art in the field of vehicular inter-networks such as safety and efficiency applications, physical and medium access control layer issues, middleware, and security Shows how vehicular networks differ from other mobile networks and illustrates the idea of vehicle-to-vehicle communications with application scenarios and with current proofs of concept worldwide Addresses current standardization activities such as IEEE 802.11p and the IEEE 1609 standard series Offers a chapter on mobility models and their use for simulation of vehicular inter-networks Provides a coherent treatment of the important topics and technologies contributed by leading academic and industry experts in the field This book provides a reference for professional automotive technologists (OEMs and suppliers), professionals in the area of Intelligent Transportation Systems, and researchers attracted to the field of wireless vehicular communications. Third and fourth year undergraduate and graduate students will also find this book of interest. For additional information please visit <http://www.vanetbook.com>

**Security and Privacy in Cyber-Physical Systems** - Houbing Song 2017-08-25

Written by a team of experts at the forefront of the cyber-physical systems (CPS) revolution, this book provides an in-depth look at security and privacy, two of the most critical challenges facing both the CPS research and development community and ICT professionals. It explores, in depth, the key technical, social,

and legal issues at stake, and it provides readers with the information they need to advance research and development in this exciting area. Cyber-physical systems (CPS) are engineered systems that are built from, and depend upon the seamless integration of computational algorithms and physical components. Advances in CPS will enable capability, adaptability, scalability, resiliency, safety, security, and usability far in excess of what today's simple embedded systems can provide. Just as the Internet revolutionized the way we interact with information, CPS technology has already begun to transform the way people interact with engineered systems. In the years ahead, smart CPS will drive innovation and competition across industry sectors, from agriculture, energy, and transportation, to architecture, healthcare, and manufacturing. A priceless source of practical information and inspiration, *Security and Privacy in Cyber-Physical Systems: Foundations, Principles and Applications* is certain to have a profound impact on ongoing R&D and education at the confluence of security, privacy, and CPS.

**Wireless Communication** - Prashant Ranjan 2022-08-10

This reference text will benefit readers in enhancing their understanding of the recent technologies, protocols, and challenges in various stages of development of wireless communication and networking. The text discusses the cellular concepts of 4G, 5G, and 6G along with their challenges. It covers topics related to vehicular technology, wherein vehicles communicate with the traffic and the environment around them using short-range wireless signals. The text comprehensively covers important topics including use of the Internet of Things (IoT) in wireless communication, architecture, and protocols. It further covers the role of smart antennas in emerging wireless technologies. The book Discusses advanced techniques used in the field of wireless communication. Covers technologies including network slicing, 5G wireless communication, and TV white space technology. Discusses practical applications including drone delivery systems, public safety, IoT, virtual reality, and smart cities. Covers radio theory and applications for wireless communication with ranges of centimeters to hundreds of meters. Discusses important topics including metamaterials, inductance coupling for loop antennas, bluetooth low energy, wireless security, and wireless sensor networks. Discussing latest technologies including 5G, 6G, IoT, vehicular technology and TV white space technology, this text will be useful for senior undergraduate, graduate students, and professionals in the fields of electrical engineering, and electronics and communication engineering.

**Vehicular Networking** - Christoph Sommer 2015

Learn about the basics and the future of vehicular networking research with this essential guide to in- and inter-vehicle communication.

*Advances in Vehicular Ad-Hoc Networks: Developments and Challenges* - Watfa, Mohamed 2010-05-31

"This book tackles the prevalent research challenges that hinder a fully deployable vehicular network, presenting a unified treatment of the various aspects of VANETs and is essential for not only university professors, but also for researchers working in the automobile industry"--Provided by publisher.

Vehicular Social Networks - Anna Maria Vegni 2017-03-31

The book provides a comprehensive guide to vehicular social networks. The book focuses on a new class of mobile ad hoc networks that exploits social aspects applied to vehicular environments. Selected topics are related to social networking techniques, social-based routing techniques applied to vehicular networks, data dissemination in VSNs, architectures for VSNs, and novel trends and challenges in VSNs. It provides significant technical and practical insights in different aspects from a basic background on social networking, the inter-related technologies and applications to vehicular ad-hoc networks, the technical challenges, implementation and future trends.

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**Trusted Computing and Information Security** - Huanguo Zhang 2019-01-08

This book constitutes the refereed proceedings of the Chinese Conference on Trusted Computing and Information Security, CTCIS 2018, held in Wuhan, China, in October 2018. The 24 revised full papers presented were carefully reviewed and selected from 73 submissions. The papers are centered around cryptography, systems security, trusted computing, information security, and network security.

Verifiable Privacy Protection for Vehicular Communication Systems - David Förster 2017-05-31

David Förster examines privacy protection for vehicular communication under the assumption of an attacker that is able to compromise back-end systems – motivated by the large number of recent security incidents and revelations about mass surveillance. The author aims for verifiable privacy protection enforced through cryptographic and technical means, which safeguards user data even if back-end systems are not fully trusted. Förster applies advanced cryptographic concepts, such as anonymous credentials, and introduces a novel decentralized secret sharing algorithm to fulfill complex and seemingly contradicting requirements in several vehicle-to-x application scenarios. Many of the concepts and results can also be applied to other flavors of internet of things systems.

**Innovative Applications of Big Data in the Railway Industry** - Kohli, Shruti 2017-11-30

Use of big data has proven to be beneficial within many different industries, especially in the field of engineering; however, infiltration of this type of technology into more traditional heavy industries, such as the railways, has been limited. *Innovative Applications of Big Data in the Railway Industry* is a pivotal reference source for the latest research findings on the utilization of data sets in the railway industry. Featuring extensive coverage on relevant areas such as driver support systems, railway safety management, and obstacle detection, this publication is an ideal resource for transportation planners, engineers, policymakers, and graduate-level engineering students seeking current research on a specific application of big data and its effects on transportation.

Cognitive Vehicular Networks - Anna Maria Vegni 2016-02-22

A comprehensive text on both current and emerging areas of cognitive vehicular networks, this book focuses on a new class of mobile ad hoc networks. It uses a pedagogical approach utilizing cognitive aspects applied to vehicular environments and comprises contributions from well-known and high profile researchers in their respective specialties. The book provides significant technical and practical insights on different perspectives, starting from a basic background on cognitive radio, interrelated technologies, application to vehicular networks, technical challenges, and future trends.

**Wireless Algorithms, Systems, and Applications** - Sriram Chellappan 2018-06-13

This book constitutes the proceedings of the 13th International Conference on Wireless Algorithms, Systems, and Applications, WASA 2018, held in Tianjin, China, in June 2018. The 59 full papers and 18 short papers presented in this book were carefully reviewed and selected from 197 submissions. The papers cover various topics such as cognitive radio networks; wireless sensor networks; cyber-physical systems; distributed and localized algorithm design and analysis; information and coding theory for wireless networks; localization; mobile cloud computing; topology control and coverage; security and privacy; underwater and underground networks; vehicular networks; internet of things; information processing and data management; programmable service interfaces; energy-efficient algorithms; system and protocol design; operating system and middle-ware support; and experimental test-beds, models and case studies.

**Heterogeneous Vehicular Networks** - Kan Zheng 2016-03-18

This brief examines recent developments in the Heterogeneous Vehicular NETWORKS (HETVNETs), integrating cellular networks with Dedicated Short-Range Communication (DSRC) for meeting the communications requirements of the Intelligent Transport System (ITS) services. Along with a review of recent literature, a unified framework of the HetVNET is presented. The brief focuses on introducing efficient MAC mechanisms for vehicular communications, including channel access protocols, broadcast/multicast protocols, the location-based channel congestion control scheme and the content-based resource allocation scheme. The cooperative communication between vehicles is discussed. This brief concludes with a discussion on future research directions, and provides the readers with useful insights into the future designs in the HetVNETs, to motivate new ideas for performance improvements in vehicular networks.