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Commercial Carrier Journal John Wiley & Sons Now in its third edition, Understanding Smart Sensors is the most complete, up-to-date, and authoritative summary of the latest applications and developments impacting smart sensors in a single volume. This thoroughly expanded and revised edition of an Artech bestseller contains a wealth of new material, including critical coverage of sensor fusion and energy harvesting, the latest details on wireless technology, and greater emphasis on applications through the book. Utilizing the latest in smart sensor, microelectromechanical systems (MEMS) and microelectronic research and development, Engineers get the technical and practical information they need keep their designs and products on the cutting edge. Providing an extensive variety of information for both technical and non-technical professionals, this easy-to-understand, time-saving book covers current and emergent technologies, as well as their practical implementation. This comprehensive resource also includes an extensive list of smart sensor acronyms and a glossary of key terms. Service Level Agreements for Cloud Computing Cengage Learning Intelligent Data Analysis for Biomedical Applications: Challenges and Solutions presents specialized statistical, pattern recognition, machine learning, data abstraction and visualization tools for the analysis of data and discovery of mechanisms that create data. It provides computational methods and tools for intelligent data analysis, with an emphasis on problem-solving relating to automated data collection, such as computer-based

patient records, data warehousing tools, intelligent alarming, effective and efficient monitoring, and more. This book provides useful references for educational institutions, industry professionals, researchers, scientists, engineers and practitioners interested in intelligent data analysis, knowledge discovery, and decision support in databases. Provides the methods and tools necessary for intelligent data analysis and gives solutions to problems resulting from automated data collection Contains an analysis of medical databases to provide diagnostic expert systems Addresses the integration of intelligent data analysis techniques within biomedical information systems

Third International Work-

Conference on the Interplay Between Natural and Artificial Computation, IWINAC 2009, Santiago de Compostela, Spain, June 22-26, 2009, Proceedings CRC Press

Engine production for the typical car manufactured today is a study in mass production. Benefits in the manufacturing process for the manufacturer often run counter to the interests of the end user. What speeds up production and saves manufacturing costs results in an engine that is made to fall within a wide set of standards and specifications, often not optimized to meet the original design. In short,

cheap and fast engine production results in a sloppy final product. Of course, this is not what enthusiasts want out of their engines. To maximize the performance of any engine, it must be balanced and blueprinted to the exact tolerances that the factory should have adhered to in the first place. Four cylinder, V-8, American or import, the performance of all engines is greatly improved by balancing and blueprinting. Dedicated enthusiasts and professional racers balance and blueprint their engines because the engines will produce more horsepower and torque, more efficiently use fuel, run cooler and last longer. In this book, expert engine builder and veteran author Mike Mavrigian explains and illustrates the most discriminating engine building techniques and perform detailed procedures, so the engine is perfectly balanced, matched, and optimized. Balancing and blueprinting is a time consuming and exacting process, but the investment in time pays off with superior performance. Through the process, you carefully measure, adjust, machine and fit each part together with precision tolerances, optimizing the design and maximizing performance. The book covers the block, crankshaft,

connecting rods, pistons, cylinder heads, intake manifolds, camshaft, measuring tools and final assembly techniques. For more than 50 years, balancing and blueprinting has been an accepted and common practice for maximi

Material-Integrated Intelligent Systems CRC Press
The conference proceedings of: International Conference on Industrial Electronics, Technology & Automation (IETA 05) International Conference on Telecommunications and Networking (TeNe 05) International Conference on Engineering Education, Instructional Technology, Assessment, and E-learning (EIAE 05) include a set of rigorously reviewed world-class manuscripts addressing and detailing state-of-the-art research projects in the areas of: Industrial Electronics, Technology and Automation, Telecommunications, Networking, Engineering Education, Instructional Technology and e-Learning. The three conferences, (IETA 05, TENE 05 and EIAE 05) were part of the International Joint Conference on Computer, Information, and System Sciences, and Engineering (CISSE 2005). CISSE 2005, the World's first Engineering/Computing and

Systems Research E-Conference was the first high-caliber Research Conference in the world to be completely conducted online in real-time via the internet. CISSE received 255 research paper submissions and the final program included 140 accepted papers, from more than 45 countries. The whole concept and format of CISSE 2005 was very exciting and ground-breaking. The powerpoint presentations, final paper manuscripts and time schedule for live presentations over the web had been available for 3 weeks prior to the start of the conference for all registrants, so they could pick and choose the presentations they want to attend and think about questions that they might want to ask. The live audio presentations were also recorded and are part of the permanent CISSE archive, which includes all power point presentations, papers and recorded presentations. All aspects of the conference were managed on-line; not only the reviewing, submissions and registration processes; but also the actual conference. Conference participants - authors, presenters and attendees - only needed an internet connection and sound

available on their computers in order to be able to contribute and participate in this international ground-breaking conference. The on-line structure of this high-quality event allowed academic professionals and industry participants to contribute work and attend world-class technical presentations based on rigorously refereed submissions, live, without the need for investing significant travel funds or time out of the office. Suffice to say that CISSE received submissions from more than 50 countries, for whose researchers, this opportunity presented a much more affordable, dynamic and well-planned event to attend and submit their work to, versus a classic, on-the-ground conference. The CISSE conference audio room provided superb audio even over low speed internet connections, the ability to display PowerPoint presentations, and cross-platform compatibility (the conferencing software runs on Windows, Mac, and any other operating system that supports Java). In addition, the conferencing system allowed for an unlimited number of participants, which in turn

granted CISSE the opportunity to allow all participants to attend all presentations, as opposed to limiting the number of available seats for each session. The implemented conferencing technology, starting with the submission & review system and ending with the online conferencing capability, allowed CISSE to conduct a very high quality, fulfilling event for all participants. See: www.cissee2005.org, sections: IETA, TENE, EIAE

Engineering Asset Management - Systems, Professional Practices and Certification Artech House

Although governments worldwide have invested significantly in intelligent sensor network research and applications, few books cover intelligent sensor networks from a machine learning and signal processing perspective. Filling this void, Intelligent Sensor Networks: The Integration of Sensor Networks, Signal Processing and Machine Learning focuses on the close integration of sensing, networking, and smart signal processing via machine learning. Based on the world-class research of award-winning authors, the book provides a firm grounding in the fundamentals of intelligent sensor networks, including compressive sensing and sampling, distributed signal processing, and intelligent signal learning. Presenting recent research results of world-renowned sensing experts, the book is organized into three parts: Machine Learning—describes the application of machine learning and other AI principles in sensor network intelligence—covering smart sensor/transducer architecture and data representation for intelligent sensors Signal Processing—considers the optimization of sensor network performance based

on digital signal processing techniques—including cross-layer integration of routing and application-specific signal processing as well as on-board image processing in wireless multimedia sensor networks for intelligent transportation systems Networking—focuses on network protocol design in order to achieve an intelligent sensor networking—covering energy-efficient opportunistic routing protocols for sensor networking and multi-agent-driven wireless sensor cooperation Maintaining a focus on "intelligent" designs, the book details signal processing principles in sensor networks. It elaborates on critical platforms for intelligent sensor networks and illustrates key applications—including target tracking, object identification, and structural health monitoring, It also includes a paradigm for validating the extent of spatiotemporal associations among data sources to enhance data cleaning in sensor networks, a sensor stream reduction application, and also considers the use of Kalman filters for attack detection in a water system sensor network that consists of water level sensors and velocity sensors.

Proceedings of the 8th World Congress on Engineering Asset Management (WCEAM 2013) & the 3rd International Conference on Utility Management & Safety (ICUMAS) CRC Press Continuing Professor Mira's Scienti?c Navigation Professor Jos´ e Mira passed away during the preparation of this edition of the International Work-Conference on the Interplay Between Natural and Arti?cial Computation. As a pioneer in the ?eld of cybernetics, he enthusiastically p- moted interdisciplinary research. The term cybernetics stems from the Greek K?? ???? ´ ?? (kybernetes), which means steersman, governor, or pilot, the same root as government. Cybernetics is a broad ?eld of study, but the essential goal of cybernetics is to understand and de?ne the functions and processes of systems that have goals, and promote circular, causal chains that move from action to sensing to comparison with a desired goal,

and again to action. These de?- tions can be applied to Prof. Mira. He was a leader, a pilot, with a visionary and extraordinary capacity to guide his students and colleagues to the desired objective. In this way he promoted the study and understanding of biological functions for creating new computational paradigms able to solve known pr-lems in a more e?cient way than classical approaches. But he also impressed his magni?cent and generous character on all the researchers and friends that workedwith him, imprinting in all ofus high requirementsof excellence not only as scientists, but also as human beings. Weallremembe rhisenthusiasticexplanationaboutthedomainsandleve lsin the computational paradigm(CP).

Low Energy Hardware for Sensor Signal Calibration and Compensation Springer Science & Business Media

In this book, the authors describe the fundamental concepts and practical aspects of wireless sensor networks. The book provides a comprehensive view to this rapidly evolving field, including its many novel applications, ranging from protecting civil infrastructure to pervasive health monitoring. Using detailed examples and illustrations, this book provides an inside track on the current state of the technology. The book is divided into three parts. In Part I, several node architectures, applications and operating systems are discussed. In Part II, the basic architectural frameworks, including the key building blocks required for constructing large-scale, energy-efficient sensor networks are presented. In Part III, the challenges and approaches pertaining to local and global management strategies are presented – this includes topics on power management, sensor node localization, time synchronization, and security. At the end of

each chapter, the authors provide practical exercises to help students strengthen their grip on the subject. There are more than 200 exercises altogether. Key Features: Offers a comprehensive introduction to the theoretical and practical concepts pertaining to wireless sensor networks Explains the constraints and challenges of wireless sensor network design; and discusses the most promising solutions Provides an in-depth treatment of the most critical technologies for sensor network communications, power management, security, and programming Reviews the latest research results in sensor network design, and demonstrates how the individual components fit together to build complex sensing systems for a variety of application scenarios Includes an accompanying website containing solutions to exercises (http://www.wiley.com/go/dargie_fu

ndamentals) This book serves as an introductory text to the field of wireless sensor networks at both graduate and advanced undergraduate level, but it will also appeal to researchers and practitioners wishing to learn about sensor network technologies and their application areas, including environmental monitoring, protection of civil infrastructure, health care, precision agriculture, traffic control, and homeland security.

Medium/Heavy Duty Truck Engines, Fuel & Computerized Management Systems CarTech Inc
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.

Human-computer Interaction Springer
This book brings together the latest research in smart sensors technology and exposes the reader to myriad industrial applications that this technology has enabled. The book emphasizes several topics in the area of smart sensors in industrial real-world applications. The contributions in this book give a broader view on the usage of smart sensor devices covering a wide range of interdisciplinary areas like Intelligent Transport Systems, Healthcare, Agriculture, Drone communications and Security. By presenting an insight into Smart Sensors for Industrial IoT, this book directs the readers to explore the utility and advancement in smart sensors and their applications into numerous research fields. Lastly, the book aims to reach through a mass number of industry experts, researchers, scientists, engineers, and practitioners and help them guide and evolve to advance research practices.

Challenges, Solutions and Applications Oways
This new book provides an insightful look at the varied and exciting uses and applications of Wi-Fi and the Internet of Things in agriculture. With internet-enabled communications becoming more widely available, farms and agricultural establishments can take advantage of these new technologies for a wide range of farm operations, such as crop management, farm vehicle tracking, livestock monitoring, storage monitoring, and more. The collected data from these devices can be stored in the cloud system or server and accessed by the farmers via the internet or mobile phones. This

book shows the many benefits to farmers from applying IoT, including better utilizing information for monitoring crops, optimizing water use, planning effective fertilization strategies, and saving time and reducing the operation expenses. Topics include using IoT for vertical farming, IoT-based smart irrigation system, landslide susceptibility assessment, automated aeroponics systems, crop survival analysis, and more. The volume also considers the challenges of IoT in agriculture, such as the requirements of applications of wireless sensor networks, the threat of attacks and the detection of vulnerabilities in wireless sensor networks, and more. Internet of Things for Agriculture 4.0: Impact and Challenges provides a better understanding of the time- and resourcing-saving benefits of wireless sensors and remote monitoring devices in agriculture. The volume will be useful for those involved in agricultural operations as well as scientists and researchers, and faculty and students in agriculture and computer and information science engineering. **Impact and Challenges** Springer Nature Service Level Agreements for Cloud Computing provides a unique combination of business-driven application scenarios and advanced research in the area of service-level agreements for Clouds and service-oriented infrastructures. Current state-of-the-art research findings are presented in this book, as well as business-ready solutions applicable to Cloud infrastructures or ERP (Enterprise Resource Planning) environments. Service Level Agreements for Cloud Computing contributes to the various levels of service-level management from the infrastructure over the software to the business layer, including

horizontal aspects like service monitoring. This book provides readers with essential information on how to deploy and manage Cloud infrastructures. Case studies are presented at the end of most chapters. Service Level Agreements for Cloud Computing is designed as a reference book for high-end practitioners working in cloud computing, distributed systems and IT services. Advanced-level students focused on computer science will also find this book valuable as a secondary text book or reference. *Advances in Interdisciplinary Engineering* Wireless Sensor Networks for Healthcare Applications

While still in the early stages of research and development, cognitive radio is a highly promising communications paradigm with the ability to effectively address the spectrum insufficiency problem. Written by those pioneering the field, Cognitive Radio Networks: Architectures, Protocols, and Standards offers a complete view of cognitive radio-incl

Fleet Owner Springer

Combining different perspectives from materials science, engineering, and computer science, this reference provides a unified view of the various aspects necessary for the successful realization of intelligent systems. The editors and authors are from academia and research institutions with close ties to industry, and are thus able to offer first-hand information here. They adopt a unique, three-tiered approach such that readers can gain basic, intermediate, and advanced topical knowledge. The technology section of the book is divided into chapters covering the basics of sensor integration in materials, the challenges associated with this approach, data processing,

evaluation, and validation, as well as methods for achieving an autonomous energy supply. The applications part then goes on to showcase typical scenarios where material-integrated intelligent systems are already in use, such as for structural health monitoring and smart textiles.

Internet of Things for Agriculture 4.0 John Wiley & Sons

Although there are many books available on WSNs, most are low-level, introductory books. The few available for advanced readers fail to convey the breadth of knowledge required for those aiming to develop next-generation solutions for WSNs. Filling this void, Wireless Sensor Networks: From Theory to Applications supplies comprehensive coverage of WSNs. In order to provide the wide-ranging guidance required, the book brings together the contributions of domain experts working in the various subfields of WSNs worldwide. This edited volume examines recent advances in WSN technologies and considers the theoretical problems in WSN, including issues with monitoring, routing, and power control. It also details methodologies that can provide solutions to these problems. The book's 25 chapters are divided into seven parts: Data Collection Physical Layer and Interfacing Routing and Transport Protocols Energy-Saving Approaches Mobile and Multimedia WSN Data Storage and Monitoring Applications The book examines applications of WSN across a range of fields, including health, military, transportation, and mining,

Addressing the main challenges in applying WSNs across all phases of our life, it explains how WSNs can assist in community development. Complete with a list of references at the end of each chapter, this book is ideal for senior undergraduate and postgraduate students, researchers, scholars, academics, industrial researchers, and practicing engineers working on WSNs. The text assumes that readers possess a foundation in computer networks, wireless communication, and basic electronics.

Technologies, Integration, Implementation and Applications IOS Press

Thoroughly updated and expanded, Fundamentals of Medium/Heavy Diesel Engines, Second Edition offers comprehensive coverage of basic concepts and fundamentals, building up to advanced instruction on the latest technology coming to market for medium- and heavy-duty diesel engine systems.

Understanding Smart Sensors Springer Nature

This proceeding represents state-of-the-art trends and developments in the emerging field of engineering asset management as presented at the Eight World Congress on Engineering Asset Management (WCEAM). The Proceedings of the WCEAM 2013 is an excellent reference for practitioners, researchers and students in the multidisciplinary field of asset management, covering topics such as: Asset condition monitoring and intelligent maintenance, 2. Asset data warehousing, data mining and fusion, 3. Asset performance and level-of-service models, 4. Design and life-cycle integrity of physical assets, 5. Deterioration and preservation models for assets, 6. Education and training in asset management, 7. Engineering standards in asset management, 8. Fault diagnosis and prognostics, 9. Financial

analysis methods for physical assets, 10. Human dimensions in integrated asset management, 11. Information quality management, 12. Information systems and knowledge management, 13. Intelligent sensors and devices, 14. Maintenance strategies in asset management, 15. Optimisation decisions in asset management, 16. Risk management in asset management, 17. Strategic asset management, 18. Sustainability in asset management. King WONG served as Congress Chair for WCEAM 2013 and ICUMAS 2013 is the President of the Hong Kong Institute of Utility Specialists (HKIUS) and Convener of International Institute of Utility Specialists (IIUS). Peter TSE is the Director of the Smart Engineering Asset Management laboratory (SEAM) at the City University of Hong Kong and served as the Chair of WCEAM 2013 Organising Committee. Joseph MATHEW served as the Co-Chair of WCEAM 2013 is also WCEAM's General Chair. He is the Chief Executive Officer of Asset Institute, Australia.

Materials Evaluation CRC Press
By one estimate, 90 percent of all of the data in history was created in the last two years. In 2014, International Data Corporation calculated the data universe at 4.4 zettabytes, or 4.4 trillion gigabytes. That much information, in volume, could fill enough slender iPad Air tablets to create a stack two-thirds of the way to the moon. Now, that's Big Data. Coal, iron ore, and oil were the key productive assets that fueled the Industrial Revolution. The vital raw material of today's information economy is data. In Data-ism, New York Times reporter Steve Lohr explains how big-data technology is ushering in a revolution in proportions that promise to be the basis of the next wave of efficiency and innovation

across the economy. But more is at work here than technology. Big data is also the vehicle for a point of view, or philosophy, about how decisions will be—and perhaps should be—made in the future. Lohr investigates the benefits of data while also examining its dark side. Data-ism is about this next phase, in which vast Internet-scale data sets are used for discovery and prediction in virtually every field. It shows how this new revolution will change decision making—by relying more on data and analysis, and less on intuition and experience—and transform the nature of leadership and management. Focusing on young entrepreneurs at the forefront of data science as well as on giant companies such as IBM that are making big bets on data science for the future of their businesses, Data-ism is a field guide to what is ahead, explaining how individuals and institutions will need to exploit, protect, and manage data to stay competitive in the coming years. With rich examples of how the rise of big data is affecting everyday life, Data-ism also raises provocative questions about policy and practice that have wide implications for everyone. The age of data-ism is here. But are we ready to handle its consequences, good and bad?

New Opportunities in High Technology Industry for Southern California Artech House
Wireless localization techniques are an area that has attracted interest from both industry and academia, with self-localization capability providing a highly desirable characteristic of wireless sensor networks. Localization Algorithms

and Strategies for Wireless Sensor Networks encompasses the significant and fast growing area of wireless localization techniques. This book provides comprehensive and up-to-date coverage of topics and fundamental theories underpinning measurement techniques and localization algorithms. A useful compilation for academicians, researchers, and practitioners, this Premier Reference Source contains relevant references and the latest studies emerging out of the wireless sensor network field.

Development of a Test Method to Measure Stationary and Portable Engine Emissions
Academic Press

Today's technologies are a world apart from the cars of a generation ago. That's why Chilton created a new breed of model-specific repair manuals -- so comprehensive they set the standard. Written in response to consumer studies, they give your customers exactly what they want and need in specific automotive information. Total Car Care provides the amateur mechanic with two essential ingredients: -- In-depth information on all systems from headlights to exhaust -- Complete, easy-to-follow, illustrated, procedural directions for disassembly, removal, replacement and reinstallation Each volume lives up to its name with total information, including: -- Photographs and illustrations throughout -- Diagnostic and troubleshooting sections throughout -- Actual wiring and vacuum diagrams -- Complete electronic controls information -- Tune-up specs and maintenance schedules -- Emissions controls data, environmental and safety information

The Road to Digitization Springer Science & Business Media

Taken as a whole, this series covers all major fields of application for commercial sensors, as well as their manufacturing techniques and major types. As such the series does not treat bulk sensors, but rather places strong emphasis on microsensors, microsystems and integrated electronic sensor packages. Each of the individual volumes is tailored to the needs and queries of readers from the relevant branch of industry. An international team of experts from the leading companies in this field gives a detailed picture of existing as well as future applications. They discuss in detail current technologies, design and construction concepts, market considerations and commercial developments. Topics covered include vehicle safety, fuel consumption, air conditioning, emergency control, traffic control systems, and electronic guidance using radar and video.