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**2019 11th**  
**International**  
**Conference on**  
**Communication**  
**Systems and**  
**Networks**  
**(COMSNETS) The**  
**IEEE 20th**  
**International**  
**Conference on**  
**Advanced**  
**Communications**  
**Technology IEEE**  
**Region 10**  
**Humanitarian**  
**Technology**  
**Conference 2016**  
**2021 IEEE**  
**International**

**Symposium on**  
**Technology and**  
**Society (ISTAS)**  
**IEEE Intercon**  
**Technical**  
**Program Papers**  
*Selected Papers*  
*from IEEE ICKII*  
*2018 IMTC-87*  
**mmWave Massive**  
**MIMO Tele-**  
**Visionaries**  
**Tactile Internet**  
2021 IEEE  
International  
Instrumentation  
and Measurement  
Technology  
Conference  
(I2MTC) Nonlinear  
**and Adaptive**  
**Control with**  
**Applications Edge**  
**Intelligence in**  
**the Making**  
*Implementation and*  
*Applications of DSL*

*Technology*  
**Conference**  
**Record of 2016**  
**Annual Pulp,**  
**Paper and Forest**  
**Industries**  
**Technical**  
**Conference**  
**Wireless Personal**  
**Area Networks**  
*Informatics and the*  
*Digital Society*  
**2017 IEEE Jordan**  
**Conference on**  
**Applied Electrical**  
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**Computing**  
**Technologies**  
**(AEECT) 2016**  
**IEEE Pulp, Paper**  
**and Forest**  
**Industries**  
**Conference**  
**(PPFIC) Low Cost**  
*Flip Chip*  
*Technologies 2016*  
*IEEE Region 10*

*Humanitarian  
Technology  
Conference (R10  
HTC) 2017 19th  
International  
Conference on  
Advanced  
Communication  
Technology  
(ICTACT) Green  
and Smart  
Technologies for  
Smart Cities  
Optical Fiber  
Telecommunicati  
ons VB Optical  
Amplifiers Radio-  
Frequency  
Microelectronic  
Circuits for  
Telecommunication  
Applications  
Robotic Computing  
on FPGAs NASA  
Technical Paper  
Multimedia  
Systems and  
Content-based  
Image Retrieval  
2019 21st  
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Communication*

**Technology  
(ICTACT) Robust  
Autonomous  
Guidance Guide  
to the Software  
Engineering Body  
of Knowledge  
(Swebok(r)) 2013  
59th IEEE Pulp  
and Paper  
Industry  
Conference PPIC  
Phoenix  
Conference on  
Computers and  
Communications  
*Learning-Based  
Control 2018 20th  
International  
Conference on  
Advanced  
Communication  
Technology (ICTACT)  
A Manual for  
Writers of  
Dissertations How  
to Write &  
Publish  
Engineering  
Papers and  
Reports***

"Tele-Visionaries:  
The People Behind

the Invention of  
Television invites us  
to step back in time  
for a firsthand  
account of the  
invention and  
evolution of  
television. From the  
first developments  
in monochrome  
image transmission  
to color  
broadcasting and  
finally to digital  
video. Richard  
Webb's book offers  
us a rarely seen  
insider's view into  
the key innovations  
that have made  
television the  
powerfull medium it  
is today. Dr. Webb  
was a member of  
"Ray Kell's color  
group" at RCA,  
where he was one  
of a handful of  
talented engineers  
who played a  
pivotal role in the  
development of  
television."--Jacket.  
The conference

seeks to attract participation from a wide variety of technical fields, given the broad scope of its overall theme

Technological Stewardship and Responsible Innovation In addition, this theme seeks to engage participants in current debates about the status of ethics related topics within the tech industry In recent years, a slew of manifestos and other tech for good declarations have been published, and there is growing acknowledgement that tackling the issues and questions surrounding technology's complex social implications will require input from

across multiple disciplines and approaches (applied, hard, and social sciences, as well as humanities)

By bringing together scholars and professionals who are actively involved in developing approaches that embrace principles related to technological stewardship and responsible innovation, we hope to generate valuable contributions to many sub fields within the IEEE community With technically co sponsored by IEEE ComSoc(Communications Society), IEEE ComSoc CISTC(Communications & Information Security Technical Community), and

IEEE ComSoc ONTC(Optical Networking Technical Community), the ICACT(International Conference on Advanced Communications Technology) Conference has been providing an open forum for scholars, researchers, and engineers to the extensive exchange of information on newly emerging technologies, standards, services, and applications in the area of the advanced communications technology The conference official language is English All the presented papers have been published in the Conference Proceedings, and posted on the

ICACT Website and IEEE Xplore Digital Library since 2004 The honorable ICACT Outstanding Paper Award list has been posted on the IEEE Xplore Digital Library also, and all the Outstanding papers are subjected to the invited paper of the ICACT Transactions on the Advanced Communications Technology Journal issued by The IEEE Communications Society held its conference in Tempe, Arizona, March 1993, hearing papers presented on computer technology, object-oriented systems, network systems, communication technology, strategic impact, and software

systems. No index. Printed on acidic paper (unlike most IEEE proceedings) The book starts with an overview of the role of cities in climate change and environmental pollution worldwide, followed by the concept description of smart cities and their expected features, focusing on green technology innovation. This book explores the energy management strategies required to minimize the need for huge investments in high-capacity transmission lines from distant power plants. A new range of renewable energy technologies modified for installation in cities like small wind

turbines, micro-CHP and heat pumps are described. The overall objective of this book is to explore all the green and smart technologies for designing green smart cities. From the reviews: "The book is an excellent combination of theory and real-world applications. Each application not only demonstrates the power of the theoretical results but also is important on its own behalf." IEEE Control Systems Magazine The Conference focuses on all aspects of instrumentation and measurement science and technology research development and

applications The list of program topics includes but is not limited to Measurement Science & Education, Measurement Systems, Measurement Data Acquisition, Measurements of Physical Quantities, and Measurement Applications mmWave Massive MIMO: A Paradigm for 5G is the first book of its kind to hinge together related discussions on mmWave and Massive MIMO under the umbrella of 5G networks. New networking scenarios are identified, along with fundamental design requirements for mmWave Massive MIMO networks from an

architectural and practical perspective. Working towards final deployment, this book updates the research community on the current mmWave Massive MIMO roadmap, taking into account the future emerging technologies emanating from 3GPP/IEEE. The book's editors draw on their vast experience in international research on the forefront of the mmWave Massive MIMO research arena and standardization. This book aims to talk openly about the topic, and will serve as a useful reference not only for postgraduates students to learn more on this

evolving field, but also as inspiration for mobile communication researchers who want to make further innovative strides in the field to mark their legacy in the 5G arena. Contains tutorials on the basics of mmWave and Massive MIMO Identifies new 5G networking scenarios, along with design requirements from an architectural and practical perspective Details the latest updates on the evolution of the mmWave Massive MIMO roadmap, considering future emerging technologies emanating from 3GPP/IEEE Includes contributions from

leading experts in the field in modeling and prototype design for mmWave Massive MIMO design Presents an ideal reference that not only helps postgraduate students learn more in this evolving field, but also inspires mobile communication researchers towards further innovation Optical Fiber Telecommunication s V (A&B) is the fifth in a series that has chronicled the progress in the research and development of lightwave communications since the early 1970s. Written by active authorities from academia and industry, this edition not only

brings a fresh look to many essential topics but also focuses on network management and services. Using high bandwidth in a cost-effective manner for the development of customer applications is a central theme. This book is ideal for R&D engineers and managers, optical systems implementers, university researchers and students, network operators, and the investment community. Volume (A) is devoted to components and subsystems, including: semiconductor lasers, modulators, photodetectors, integrated photonic circuits, photonic crystals, specialty fibers, polarization-

mode dispersion, electronic signal processing, MEMS, nonlinear optical signal processing, and quantum information technologies. Volume (B) is devoted to systems and networks, including: advanced modulation formats, coherent systems, time-multiplexed systems, performance monitoring, reconfigurable add-drop multiplexers, Ethernet technologies, broadband access and services, metro networks, long-haul transmission, optical switching, microwave photonics, computer interconnections, and simulation tools. Biographical Sketches Ivan

Kaminow retired from Bell Labs in 1996 after a 42-year career. He conducted seminal studies on electrooptic modulators and materials, Raman scattering in ferroelectrics, integrated optics, semiconductor lasers (DBR, ridge-waveguide InGaAsP and multi-frequency), birefringent optical fibers, and WDM networks. Later, he led research on WDM components (EDFAs, AWGs and fiber Fabry-Perot Filters), and on WDM local and wide area networks. He is a member of the National Academy of Engineering and a recipient of the IEEE/OSA John Tyndall, OSA

Charles Townes and IEEE/LEOS Quantum Electronics Awards. Since 2004, he has been Adjunct Professor of Electrical Engineering at the University of California, Berkeley. Tingye Li retired from AT&T in 1998 after a 41-year career at Bell Labs and AT&T Labs. His seminal work on laser resonator modes is considered a classic. Since the late 1960s, He and his groups have conducted pioneering studies on lightwave technologies and systems. He led the work on amplified WDM transmission systems and championed their deployment for upgrading network

capacity. He is a member of the National Academy of Engineering and a foreign member of the Chinese Academy of Engineering. He is a recipient of the IEEE David Sarnoff Award, IEEE/OSA John Tyndall Award, OSA Ives Medal/Quinn Endowment, AT&T Science and Technology Medal, and IEEE Photonics Award. Alan Willner has worked at AT&T Bell Labs and Bellcore, and he is Professor of Electrical Engineering at the University of Southern California. He received the NSF Presidential Faculty Fellows Award from the White House, Packard Foundation Fellowship, NSF

National Young Investigator Award, Fulbright Foundation Senior Scholar, IEEE LEOS Distinguished Lecturer, and USC University-Wide Award for Excellence in Teaching. He is a Fellow of IEEE and OSA, and he has been President of the IEEE LEOS, Editor-in-Chief of the IEEE/OSA J. of Lightwave Technology, Editor-in-Chief of Optics Letters, Co-Chair of the OSA Science & Engineering Council, and General Co-Chair of the Conference on Lasers and Electro-Optics. This book is a printed edition of the Special Issue Selected Papers from IEEE ICKII 2018 that was published in

Sensors AEECT 2017 is a listed IEEE conference and is the fourth of a series of conferences organized by the IEEE Jordan Section This year, AEECT 2017 is jointly organized with Aqaba University of Technology (AUT) It provides a unique forum to discuss practical approaches and state of the art findings pertinent to applied electrical engineering and computing technologies AEECT 2017 will include keynote addresses, panel discussions, tutorials, exhibitions and regular papers All papers will be peer reviewed by at least three reviewers

based on full paper submission Accepted papers will be published in the AEECT 2017 proceedings and the presented regular papers will also appear in IEEEExplore and indexed in Scopus Authors of selected papers will also be invited to prepare extended papers of their work for publication in a collection of specialized journals This is the premier technical conference for Electrical Professionals supporting Forest Products based industries (Pulp, Paper, Packaging, Board, Tissue, and Building Products) to learn about solutions to real mill needs, network with industry



professionals, and learn about the application of electrical technology specific to this industry. A variety of papers will be presented on subjects such as control, power distribution, safety, and maintenance. During the breaks, there will be an opportunity to view exhibits from several industry suppliers. The recent success of Reinforcement Learning and related methods can be attributed to several key factors. First, it is driven by reward signals obtained through the interaction with the environment. Second, it is closely related to the human learning behavior. Third, it has a solid

mathematical foundation. Nonetheless, conventional Reinforcement Learning theory exhibits some shortcomings particularly in a continuous environment or in considering the stability and robustness of the controlled process. In this monograph, the authors build on Reinforcement Learning to present a learning-based approach for controlling dynamical systems from real-time data and review some major developments in this relatively young field. In doing so the authors develop a framework for learning-based control theory that shows how to learn

directly suboptimal controllers from input-output data. There are three main challenges on the development of learning-based control. First, there is a need to generalize existing recursive methods. Second, as a fundamental difference between learning-based control and Reinforcement Learning, stability and robustness are important issues that must be addressed for the safety-critical engineering systems such as self-driving cars. Third, data efficiency of Reinforcement Learning algorithms need be addressed for safety-critical engineering

systems. This monograph provides the reader with an accessible primer on a new direction in control theory still in its infancy, namely Learning-Based Control Theory, that is closely tied to the literature of safe Reinforcement Learning and Adaptive Dynamic Programming. With technically co-sponsored by IEEE ComSoc (Communications Society), IEEE ComSoc CISTC (Communications & Information Security Technical Community), and IEEE ComSoc ONTC (Optical Networking Technical Community), the ICACT (International Conference on Advanced Communications

Technology) Conference has been providing an open forum for scholars, researchers, and engineers to the extensive exchange of information on newly emerging technologies, standards, services, and applications in the area of the advanced communications technology. The conference official language is English. All the presented papers have been published in the Conference Proceedings, and posted on the ICACT Website and IEEE Xplore Digital Library since 2004. The honorable ICACT Outstanding Paper Award list has been posted on the IEEE Xplore Digital

Library also, and all the Outstanding papers are subjected to the invited paper of the ICACT Transactions on the Advanced Communications Technology Journal issued by GIRI. This book provides a thorough overview of the state-of-the-art field-programmable gate array (FPGA)-based robotic computing accelerator designs and summarizes their adopted optimized techniques. This book consists of ten chapters, delving into the details of how FPGAs have been utilized in robotic perception, localization, planning, and multi-robot collaboration tasks. In addition to individual robotic tasks, this book

provides detailed descriptions of how FPGAs have been used in robotic products, including commercial autonomous vehicles and space exploration robots. Comnets is premier international conference dedicated to advances in networking and communications systems, and associated applications and services Tactile Internet with Human-in-the-Loop describes the change from the current Internet, which focuses on the democratization of information independent of location or time, to the Tactile Internet, which democratizes skills to promote

equity that is independent of age, gender, sociocultural background or physical limitations. The book promotes the concept of the Tactile Internet for remote closed-loop human-machine interaction and describes the main challenges and key technologies. Current standardization activities in the field for IEEE and IETF are also described, making this book an ideal resource for researchers, graduate students, and industry R&D engineers in communications engineering, electronic engineering, and computer engineering. Provides a

comprehensive reference that addresses all aspects of the Tactile Internet - technologies, engineering challenges, use cases and standards Written by leading researchers in the field Presents current standardizations surrounding the IETF and the IEEE Contains use cases that illustrate practical applications The authors here provide a detailed treatment of the design of robust adaptive controllers for nonlinear systems with uncertainties. They employ a new tool based on the ideas of system immersion and manifold invariance. New

algorithms are delivered for the construction of robust asymptotically-stabilizing and adaptive control laws for nonlinear systems. The methods proposed lead to modular schemes that are easier to tune than their counterparts obtained from Lyapunov redesign. SECIII-Social, Ethical and Cognitive Issues of Informatics and ICT Welcome to the post-conference book of SECIII, the IFIP Open Conference on Social, Ethical and Cognitive Issues of Informatics and ICT (Information and Communication Technology) which took place from July 22-26, 2002 at the University of

Dortmund, Germany, in cooperation with the German computer society (Gesellschaft für Informatik). Unlike most international conferences, those organised within the IFIP education community are active events. This wasn't a dry academic conference - teachers, lecturers and curriculum experts, policy makers, researchers and manufacturers mingled and worked together to explore, reflect and discuss social, ethical and cognitive issues. The added value lies in what they, the participants, took away in new ideas for future research and

practice, and in the new networks that were formed, both virtual and real. In addition to Keynote Addresses and Paper Presentations from international authors, there were Provocative Paper sessions, Case Studies, Focused Debates and Creative Exchange sessions as well as professional Working Groups who debated particular themes. The Focused Debate sessions helped to stimulate the sense of engagement among conference participants. A Market Place with follow-up Working Groups was a positive highlight and galvanised participants to produce interesting reports. These were

presented to the conference on its last day. Cross-fertilisation between the papers generated some surprising and useful cross-referencing and a plethora of social, ethical and cognitive issues emerged in the discussions that followed the paper presentations. Radio-Frequency Microelectronic Circuits for Telecommunication Applications covers the design issues of radio-frequency microelectronic circuits for telecommunication applications with emphasis on devices and circuit-level design. It uses a large number of real examples from industrial design as a vehicle both to

teach the principles and to ensure relevance starting from device level modeling to basic RF microelectronic circuit cell design. Modeling for high-frequency operation of both active and passive integrated devices is covered starting from the bipolar transistor to the MOS transistor to the modeling of integrated spiral inductors, resistors, capacitors, varactors and package parasitics structures. A chapter is also devoted to the presentation of the basic definitions and terminology used in RF IC design. The book continues with the presentation of the principal building blocks of an integrated RF front-

end, namely, the LNA, the mixer, the VCO and integrated filters. Design paradigms are provided classified on the technology used in each case: pure bipolar, CMOS, BiCMOS or SiGe. Radio-Frequency Microelectronic Circuits for Telecommunication Applications is essential reading for all researchers, practising engineers and designers working in RF electronics. It is also a reference for use in advanced undergraduate or graduate courses in the same field. The latest edition of this valuable guide features four completely new chapters on network-based writing techniques

that will sell an internal proposal using desktop publishing technology Ethical issues The author shares proven methods and techniques for preparing, writing, and submitting papers for business or for publication, including how to plan and organize a paper or report, construct an introduction, prepare the body of a manuscript, and write an effective concluding section. Special chapters discuss the best approaches for writing and publishing a thesis or dissertation, dealing with publishing confidential results, methods for successfully submitting a journal

manuscript, plus tips on proofreading and oral presentations. The digital subscriber line (DSL) industry is expanding rapidly and a technology once thought to be only transitional will soon clear \$100 billion in total annual service revenue. From the world's leading DSL experts, Implementation and Application of DSL Technologies builds upon the theory presented in Fundamentals of DSL Technologies to address issues fundamental to the success of DSL technology, including those that sustain DSL development, constraints, and challenges. This highly practical text

peers into the blossoming sub-industries, all born of the DSL. The editors lead with a discussion on splitter circuits and micro-filters and continue by addressing digital chipsets and the capabilities required to mix and match them with various other components. Since testing has become an industry in its own, several chapters describe the various types of testing necessary for service qualification, the evolution of testing and provisioning of services from plain old telephone service, loop qualification, and regulator's decree of spectrum management. The book gives

adequate coverage of DSL technology and describes networks for multiple applications in video, telephony, and Internet data areas and the associated network architectures. In addition, a section on security discusses packet transfer mechanism and voice-over DSL. Offering a vast array of information not currently in the public domain, Implementation and Application of DSL Technologies provides a rigorous survey of DSL applications that illustrates the profound effect this technology is having on the communications industry. When combined with Fundamentals of

DSL Technology, this is the most comprehensive and authoritative source of information on DSL. In the Guide to the Software Engineering Body of Knowledge (SWEBOK(R) Guide), the IEEE Computer Society establishes a baseline for the body of knowledge for the field of software engineering, and the work supports the Society's responsibility to promote the advancement of both theory and practice in this field. It should be noted that the Guide does not purport to define the body of knowledge but rather to serve as a compendium and guide to the

knowledge that has been developing and evolving over the past four decades. Now in Version 3.0, the Guide's 15 knowledge areas summarize generally accepted topics and list references for detailed information. The editors for Version 3.0 of the SWEBOK(R) Guide are Pierre Bourque (Ecole de technologie superieure (ETS), Universite du Quebec) and Richard E. (Dick) Fairley (Software and Systems Engineering Associates (S2EA)). Wireless Personal Area Networks provides an in-depth analysis of the recent IEEE 802.15.4 standard

for low data rate wireless personal area networks (LR-WPANs), including suggestions to improve performance and comparisons with the related 802.15.1 (Bluetooth) standard. It assesses the suitability of the standard for the development and deployment of wireless sensor networks as well as providing guidance and insight into the relative advantages and disadvantages of various performance solutions. Wireless Personal Area Networks: Provides a comprehensive, in-depth look at the issues surrounding WPAN network operation and performance.

Investigates multi-cluster networks and compares how they can be implemented. Analyzes the performance of a single cluster under different traffic and power management regimes including uplink vs. downlink traffic, acknowledged vs. unacknowledged traffic, saturation vs. non-saturation, and the like. Discusses security issues in WPANs such as different security threats, their impact on performance, standard security mechanisms, and security policies. Compares the IEEE 802.15.4 standard with the related Bluetooth IEEE 802.15.1 standard in terms of suitability for

implementing wireless sensor networks. This reference is a valuable tool for developers and researchers getting acquainted with various aspects of IEEE 802.15.4 technology. Graduate students studying courses such as Performance Evaluation, Wireless Sensor Networks and Queuing Theory will also find this book very insightful. IEEE R10 Humanitarian Technology Conference (HTC) 2016 is a premier international technical conference of IEEE Region 10, which comprises 57 Sections, 6 Councils, 21 Subsections, 514



Chapters and 1159 Student Branches in the Asia Pacific region It is devoted to emerging technologies, new trends and advances in Humanitarian Technologies One-stop, cutting-edge guide to flip chip technologies. Now you can turn to a single, all-encompassing reference for a practical understanding of the fast-developing field that's taking the electronics industry by storm. Low-Cost Flip Chip Technologies, by John H. Lau, brings you up to speed on the economic, design, materials, process, equipment, quality, manufacturing, and reliability issues related to low cost

flip chip technologies. This eye-opening overview tells you what you need to know about applying flip chip technologies to direct chip attach(DCA), flip chip on board (FCOB), wafer level chip scale package (WLCSP), and plastic ball grid array (PBGA) package assemblies. You'll discover flip chip problem-solving methods, and learn how to choose a cost-effective design and reliable, high-yield manufacturing process for your interconnect systems as you explore... \*IC trends and packaging technology updates \*Over 12 different wafer-bumping

methods...more than 100 lead-free solder alloys \*Sequential build up PCB with microvias and via-in-pad \*How to select underfill materials \*And much, much more! With technically co sponsored by IEEE ComSoc(Communications Society), IEEE ComSoc CISTC(Communications & Information Security Technical Community), and IEEE ComSoc ONTC(Optical Networking Technical Community), the ICACT(International Conference on Advanced Communications Technology) Conference has been providing an open forum for scholars, researchers, and

engineers to the extensive exchange of information on newly emerging technologies, standards, services, and applications in the area of the advanced communications technology. The conference official language is English. All the presented papers have been published in the Conference Proceedings, and posted on the ICACT Website and IEEE Xplore Digital Library since 2004. The honorable ICACT Outstanding Paper Award list has been posted on the IEEE Xplore Digital Library also, and all the Outstanding papers are subjected to the invited paper of the ICACT Transactions

on the Advanced Communications Technology Journal issue by GIRI Business intelligence has always been considered an essential ingredient for success. However, it is not until recently that the technology has enabled organizations to generate and deploy intelligence for global competition. These technologies can be leveraged to create the intelligent enterprises of the 21st century that will not only provide excellent and customized services to their customers, but will also create business efficiency for building relationships with suppliers and other

business partners on a long term basis. Creating such intelligent enterprises requires the understanding and integration of diverse enterprise components into cohesive intelligent systems. Anticipating that future enterprises need to become intelligent, Intelligent Enterprises of the 21st Century brings together the experiences and knowledge from many parts of the world to provide a compendium of high quality theoretical and applied concepts, methodologies, and techniques that help diffuse knowledge and skills required to create and manage

intelligent enterprises of the 21st century for gaining sustainable competitive advantage in a global environment. This book is a comprehensive compilation of the state of the art vision and thought processes needed to design and manage globally competitive business organizations. With the explosive growth of mobile computing and Internet of Things (IoT) applications, as exemplified by AR/VR, smart city, and video/audio surveillance, billions of mobile and IoT devices are being connected to the Internet, generating zillions of bytes of data at the network edge.

Driven by this trend, there is an urgent need to push the frontiers of artificial intelligence (AI) to the network edge to fully unleash the potential of IoT big data. Indeed, the marriage of edge computing and AI has resulted in innovative solutions, namely edge intelligence or edge AI. Nevertheless, research and practice on this emerging interdisciplinary field is still in its infancy stage. To facilitate the dissemination of the recent advances in edge intelligence in both academia and industry, this book conducts a comprehensive and detailed survey of the recent research efforts and also

showcases the authors' own research progress on edge intelligence. Specifically, the book first reviews the background and present motivation for AI running at the network edge. Next, it provides an overview of the overarching architectures, frameworks, and emerging key technologies for deep learning models toward training/inference at the network edge. To illustrate the research problems for edge intelligence, the book also showcases four of the authors' own research projects on edge intelligence, ranging from rigorous theoretical

analysis to studies based on realistic implementation. Finally, it discusses the applications, marketplace, and future research opportunities of edge intelligence. This emerging interdisciplinary field offers many open problems and yet also tremendous opportunities, and this book only touches the tip of iceberg. Hopefully, this book will elicit escalating attention, stimulate fruitful discussions, and open new directions on edge intelligence. The main focus of this book is ULSI front-end technology. It covers from the early history of semiconductor science & technology from 1874 to state-of-the-

art FINFET technology in 2016. Some ULSI back-end technology is also covered, for example, the science and technology of MIM capacitors for analog CMOS has been included in this book. Contents: Preface Author Biography Introduction to the History of Semiconductors History of MOS Technology CMOS Switching Speed Characterization and An Overview Regarding How to Speed Up CMOS Low Power CMOS Engineering Analog CMOS Technology Index Readership: The book is useful for researchers in semiconductor technology especially

practicing engineers.  
Keywords: Semiconductor; Integrated Circuits; CMOS; High Speed; Low Power; Digital; Analog; Mixed-Signal; Planar Technology; FINFET ; MIM Capacitor  
Review: Key Features: The book is readable for beginners The book is useful for semiconductor technology historians The book is useful for practicing engineers

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