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# Deepak Garg Vlsi

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SWITCHING THEORY AND LOGIC DESIGN

Advances in VLSI, Communication, and Signal Processing

Data Intelligence and Cognitive Informatics

VLSI, Microwave and Wireless Technologies

Proceedings of the International Conference on Paradigms of Computing, Communication and Data Sciences

Proceedings of International Conference on Intelligent Computing, Information and Control Systems

Quantum-Dot Cellular Automata Circuits for Nanocomputing Applications

Proceedings, ... International Symposium on VLSI Design

VLSI Design and Test

Emerging Trends, Techniques, and Applications in Geospatial Data Science

CMOS/BiCMOS ULSI

Advances in VLSI and Embedded Systems

The Bioinformatics Times

Algorithms on Strings, Trees and Sequences

Digital Systems Design Using Verilog

Futuristic Trends in Network and Communication Technologies

Compact Modeling

Emerging Low-Power Semiconductor Devices

Key Digital Trends Shaping the Future of Information and Management Science

Advances in VLSI, Signal Processing, Power Electronics, IoT, Communication and Embedded Systems  
Characterization and Modeling of Digital Circuits  
Modern Applications of Automata Theory  
Energy Research Abstracts  
Proceedings of the Eleventh National Conference on Communications  
Cracking Digital VLSI Verification Interview  
Low Power Methodology Manual  
Handbook of Computer Networks and Cyber Security  
SystemVerilog for Verification  
Advanced Computing  
The Role of the Internet of Things (IoT) in Biomedical Engineering  
Trustworthy Hardware Design: Combinational Logic Locking Techniques  
VLSI Analog Filters  
Soft Computing  
High Performance Architecture and Grid Computing  
The Physics of Semiconductor Devices  
Explainable Edge AI: A Futuristic Computing Perspective  
Smart Computing  
VLSI Design and Test for Systems Dependability  
Dive Into Deep Learning  
Inventive Communication and Computational Technologies

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## **FARMER BREANNA**

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### **SWITCHING THEORY AND LOGIC DESIGN**

World Scientific  
This book presents best selected papers presented at the International Conference on Paradigms of Computing, Communication and Data Sciences (PCCDS 2020), organized by National Institute of Technology, Kurukshetra, India, during 1–3 May 2020. It discusses high-quality and cutting-edge research in the areas of advanced computing, communications and data science techniques. The book is a collection of latest

research articles in computation algorithm, communication and data sciences, intertwined with each other for efficiency. Advances in VLSI, Communication, and Signal Processing Springer Nature  
This book comprises select peer-reviewed papers from the International Conference on VLSI, Signal Processing, Power Electronics, IoT, Communication and Embedded Systems (VSPICE-2020). The book provides insights into various aspects of the emerging fields in the areas Electronics and Communication Engineering as a holistic approach. The various topics covered in this book include VLSI, embedded systems, signal processing,

communication, power electronics and internet of things. This book mainly focuses on the most recent innovations, trends, concerns and practical challenges and their solutions. This book will be useful for academicians, professionals and researchers in the area of electronics and communications and electrical engineering.

**Data Intelligence and Cognitive Informatics** Allied Publishers

This book provides a comprehensive overview of characterization techniques and advanced modeling of VLSI circuits for modern and advanced process nodes for timing, power, noise and variation models. Intended audience

includes research professionals, graduate students, circuit and PDK designers, characterization engineers, CAD developers, managers, mentors, and the merely curious. It is organized to serve as a compendium to a beginner, a ready reference to intermediate and source for an expert.

**VLSI, Microwave and Wireless**

**Technologies** Allied Publishers

With the popularity of hardware security research, several edited monographs have been published, which aim at summarizing the research in a particular field. Typically, each book chapter is a recompilation of one or more research papers, and the focus is on

summarizing the state-of-the-art research. Different from the edited monographs, the chapters in this book are not re-compilations of research papers. The book follows a pedagogical approach. Each chapter has been planned to emphasize the fundamental principles behind the logic locking algorithms and relate concepts to each other using a systematization of knowledge approach. Furthermore, the authors of this book have contributed to this field significantly through numerous fundamental papers.

**Proceedings of the International Conference on Paradigms of Computing, Communication and Data Sciences** CRC

Press

This book provides a practical guide for engineers doing low power System-on-Chip (SoC) designs. It covers various aspects of low power design from architectural issues and design techniques to circuit design of power gating switches. In addition to providing a theoretical basis for these techniques, the book addresses the practical issues of implementing them in today's designs with today's tools.

**Proceedings of International Conference on Intelligent Computing, Information and Control Systems**

Springer Nature

This book presents explainability in edge AI, an amalgamation of edge computing and

AI. The issues of transparency, fairness, accountability, explainability, interpretability, data-fusion, and comprehensibility that are significant for edge AI are being addressed in this book through explainable models and techniques. The concept of explainable edge AI is new in front of the academic and research community, and consequently, it will undoubtedly explore multiple research dimensions. The book presents the concept of explainability in edge AI which is the amalgamation of edge computing and AI. In the futuristic computing scenario, the goal of explainable edge AI will be to execute the AI tasks and produce

explainable results at the edge. First, this book explains the fundamental concepts of explainable artificial intelligence (XAI), then it describes the concept of explainable edge AI, and finally, it elaborates on the technicalities of explainability in edge AI. Owing to the quick transition in the current computing scenario and integration with the latest AI-based technologies, it is significant to facilitate people-centric computing through explainable edge AI. Explainable edge AI will facilitate enhanced prediction accuracy with the comprehensible decision and traceability of actions performed at the edge and have a significant

impact on futuristic computing scenarios. This book is highly relevant to graduate/postgraduate students, academicians, researchers, engineers, professionals, and other personnel working in artificial intelligence, machine learning, and intelligent systems.

*Quantum-Dot Cellular Automata Circuits for Nanocomputing Applications* Cengage Learning

With the emergence of smart technology and automated systems in today's world, big data is being incorporated into many applications. Trends in data can be detected and objects can be tracked based on the real-time data that is utilized in everyday life. These connected sensor

devices and objects will provide a large amount of data that is to be analyzed quickly, as it can accelerate the transformation of smart technology. The accuracy of prediction of artificial intelligence (AI) systems is drastically increasing by using machine learning and other probability and statistical approaches. Big data and geospatial data help to solve complex issues and play a vital role in future applications. Emerging Trends, Techniques, and Applications in Geospatial Data Science provides an overview of the basic concepts of data science, related tools and technologies, and algorithms for managing the relevant challenges in real-time

application domains. The book covers a detailed description for readers with practical ideas using AI, the internet of things (IoT), and machine learning to deal with the analysis, modeling, and predictions from big data. Covering topics such as field spectra, high-resolution sensing imagery, and spatiotemporal data engineering, this premier reference source is an excellent resource for data scientists, computer and IT professionals, managers, mathematicians and statisticians, health professionals, technology developers, students and educators of higher education, librarians, researchers, and academicians.

**Proceedings, ...  
International**

### **Symposium on VLSI Design** Springer

This comprehensive text on switching theory and logic design is designed for the undergraduate students of electronics and communication engineering, electrical and electronics engineering, electronics and instrumentation engineering, telecommunication engineering, computer science and engineering, and information technology. It will also be useful to AMIE, IETE and diploma students. Written in a student-friendly style, this book, now in its Second Edition, provides an in-depth knowledge of switching theory and the design techniques of digital circuits. Striking a balance



between theory and practice, it covers topics ranging from number systems, binary codes, logic gates and Boolean algebra to minimization using K-maps and tabular method, design of combinational logic circuits, synchronous and asynchronous sequential circuits, and algorithmic state machines. The book discusses threshold gates and programmable logic devices (PLDs). In addition, it elaborates on flip-flops and shift registers. Each chapter includes several fully worked-out examples so that the students get a thorough grounding in related design concepts. Short questions with answers, review questions, fill in the

blanks, multiple choice questions and problems are provided at the end of each chapter. These help the students test their level of understanding of the subject and prepare for examinations confidently. NEW TO THIS EDITION • VHDL programs at the end of each chapter • Complete answers with figures • Several new problems with answers *VLSI Design and Test* Springer Nature This handbook introduces the basic principles and fundamentals of cyber security towards establishing an understanding of how to protect computers from hackers and adversaries. The highly informative subject matter of this handbook, includes

various concepts, models, and terminologies along with examples and illustrations to demonstrate substantial technical details of the field. It motivates the readers to exercise better protection and defense mechanisms to deal with attackers and mitigate the situation. This handbook also outlines some of the exciting areas of future research where the existing approaches can be implemented. Exponential increase in the use of computers as a means of storing and retrieving security-intensive information, requires placement of adequate security measures to safeguard the entire computing and communication scenario. With the advent of Internet and

its underlying technologies, information security aspects are becoming a prime concern towards protecting the networks and the cyber ecosystem from variety of threats, which is illustrated in this handbook. This handbook primarily targets professionals in security, privacy and trust to use and improve the reliability of businesses in a distributed manner, as well as computer scientists and software developers, who are seeking to carry out research and develop software in information and cyber security. Researchers and advanced-level students in computer science will also benefit from this reference.

**Emerging Trends,**

## **Techniques, and Applications in Geospatial Data Science**

Springer  
Most of the recent texts on compact modeling are limited to a particular class of semiconductor devices and do not provide comprehensive coverage of the field. Having a single comprehensive reference for the compact models of most commonly used semiconductor devices (both active and passive) represents a significant advantage for the reader. Indeed, several kinds of semiconductor devices are routinely encountered in a single IC design or in a single modeling support group. Compact Modeling includes mostly the material that after several years

of IC design applications has been found both theoretically sound and practically significant. Assigning the individual chapters to the groups responsible for the definitive work on the subject assures the highest possible degree of expertise on each of the covered models.

*CMOS/BiCMOS ULSI* IGI Global

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.

**Advances in VLSI and Embedded Systems** Springer

How should I prepare for a Digital VLSI Verification Interview? What all topics do I need to know before I turn up for an interview? What all concepts do I need to brush up? What all resources do I have at my disposal for

preparation? What does an Interviewer expect in an Interview? These are few questions almost all individuals ponder upon before an interview. If you have these questions in your mind, your search ends here as keeping these questions in their minds, authors have written this book that will act as a golden reference for candidates preparing for Digital VLSI Verification Interviews. Aim of this book is to enable the readers practice and grasp important concepts that are applicable to Digital VLSI Verification domain (and Interviews) through Question and Answer approach. To achieve this aim, authors have not restricted themselves just to the

answer. While answering the questions in this book, authors have taken utmost care to explain underlying fundamentals and concepts. This book consists of 500+ questions covering wide range of topics that test fundamental concepts through problem statements (a common interview practice which the authors have seen over last several years). These questions and problem statements are spread across nine chapters and each chapter consists of questions to help readers brush-up, test, and hone fundamental concepts that form basis of Digital VLSI Verification. The scope of this book however, goes beyond technical concepts. Behavioral

skills also form a critical part of working culture of any company. Hence, this book consists of a section that lists down behavioral interview questions as well. Topics covered in this book:1. Digital Logic Design (Number Systems, Gates, Combinational, Sequential Circuits, State Machines, and other Design problems)2. Computer Architecture (Processor Architecture, Caches, Memory Systems)3. Programming (Basics, OOP, UNIX/Linux, C/C++, Perl)4. Hardware Description Languages (Verilog, SystemVerilog)5. Fundamentals of Verification (Verification Basics, Strategies, and Thinking problems)6. Verification

Methodologies (UVM, Formal, Power, Clocking, Coverage, Assertions)7. Version Control Systems (CVS, GIT, SVN)8. Logical Reasoning/Puzzles (Related to Digital Logic, General Reasoning, Lateral Thinking)9. Non Technical and Behavioral Questions (Most commonly asked)In addition to technical and behavioral part, this book touches upon a typical interview process and gives a glimpse of latest interview trends. It also lists some general tips and Best-Known-Methods to enable the readers follow correct preparation approach from day-1 of their preparations. Knowing what an Interviewer looks for in an interviewee is always

an icing on the cake as it helps a person prepare accordingly. Hence, authors of this book spoke to few leaders in the semiconductor industry and asked their personal views on "What do they look for while Interviewing candidates and how do they usually arrive at a decision if a candidate should be hired?". These leaders have been working in the industry from many-many years now and they have interviewed lots of candidates over past several years. Hear directly from these leaders as to what they look for in candidates before hiring them. Enjoy reading this book. Authors are open to your feedback. Please do provide your valuable comments,

ratings, and reviews.

The Bioinformatics Times Springer Science & Business Media

The leading experts in system change and learning, with their school-based partners around the world, have created this essential companion to their runaway best-seller, *Deep Learning: Engage the World Change the World*. This hands-on guide provides a roadmap for building capacity in teachers, schools, districts, and systems to design deep learning, measure progress, and assess conditions needed to activate and sustain innovation.

*Dive Into Deep Learning: Tools for Engagement* is rich with resources educators need to construct and drive meaningful deep

learning experiences in order to develop the kind of mindset and know-how that is crucial to becoming a problem-solving change agent in our global society.

Designed in full color, this easy-to-use guide is loaded with tools, tips, protocols, and real-world examples. It includes:

- A framework for deep learning that provides a pathway to develop the six global competencies needed to flourish in a complex world — character, citizenship, collaboration, communication, creativity, and critical thinking.
- Learning progressions to help educators analyze student work and measure progress.
- Learning design rubrics, templates and

examples for incorporating the four elements of learning design: learning partnerships, pedagogical practices, learning environments, and leveraging digital.

- Conditions rubrics, teacher self-assessment tools, and planning guides to help educators build, mobilize, and sustain deep learning in schools and districts. Learn about, improve, and expand your world of learning. Put the joy back into learning for students and adults alike. Dive into deep learning to create learning experiences that give purpose, unleash student potential, and transform not only learning, but life itself.

### **Algorithms on Strings, Trees and Sequences**

Independently Published  
For upper level and graduate level  
Electrical and Computer Engineering courses in Integrated Circuit Design as well as professional circuit designers, engineers and researchers working in portable wireless communications hardware. This book presents the fundamentals of Complementary Metal Oxide Semiconductor (CMOS) and Bipolar compatible Complementary Metal Oxide Semiconductor (BiCMOS) technology, as well as the latest technological advances in the field. It discusses the concepts and techniques of new integrated circuit design for building high performance and low



power circuits and systems for current and future very-large-scale-integration (VLSI) and giga-scale-integration (GSI) applications.

CMOS/BiCMOS ULSI:

Low-Voltage Low-Power is an essential resource for every professional moving toward lower voltage, lower power, and higher performance VLSI circuits and subsystems design.

Digital Systems Design Using Verilog Springer Science & Business Media

Based on the highly successful second edition, this extended edition of SystemVerilog for Verification: A Guide to Learning the Testbench Language Features teaches all verification features of the SystemVerilog

language, providing hundreds of examples to clearly explain the concepts and basic fundamentals. It contains materials for both the full-time verification engineer and the student learning this valuable skill. In the third edition, authors Chris Spear and Greg Tumbush start with how to verify a design, and then use that context to demonstrate the language features, including the advantages and disadvantages of different styles, allowing readers to choose between alternatives. This textbook contains end-of-chapter exercises designed to enhance students' understanding of the material. Other features of this revision

include: New sections on static variables, print specifiers, and DPI from the 2009 IEEE language standard Descriptions of UVM features such as factories, the test registry, and the configuration database Expanded code samples and explanations Numerous samples that have been tested on the major SystemVerilog simulators SystemVerilog for Verification: A Guide to Learning the Testbench Language Features, Third Edition is suitable for use in a one-semester SystemVerilog course on SystemVerilog at the undergraduate or graduate level. Many of the improvements to this new edition were compiled through feedback provided

from hundreds of readers.

*Futuristic Trends in Network and Communication Technologies* Allied Publishers

The book is a collection of peer-reviewed best selected research papers presented at the International Conference on Data Intelligence and Cognitive Informatics (ICDICI 2021), organized by SCAD College of Engineering and Technology, Tirunelveli, India, during July 16–17, 2021. This book discusses new cognitive informatics tools, algorithms, and methods that mimic the mechanisms of the human brain which leads to an impending revolution in understating a large amount of data

generated by various smart applications. The book includes novel work in data intelligence domain which combines with the increasing efforts of artificial intelligence, machine learning, deep learning, and cognitive science to study and develop a deeper understanding of the information processing systems.

*Compact Modeling*

Corwin Press

String algorithms are a traditional area of study in computer science. In recent years their importance has grown dramatically with the huge increase of electronically stored text and of molecular sequence data (DNA or protein sequences) produced by various genome projects. This 1997 book is a general text on computer

algorithms for string processing. In addition to pure computer science, the book contains extensive discussions on biological problems that are cast as string problems, and on methods developed to solve them. It emphasises the fundamental ideas and techniques central to today's applications. New approaches to this complex material simplify methods that up to now have been for the specialist alone. With over 400 exercises to reinforce the material and develop additional topics, the book is suitable as a text for graduate or advanced undergraduate students in computer science, computational biology, or bio-informatics. Its

discussion of current algorithms and techniques also makes it a reference for professionals.

### **Emerging Low-Power**

### **Semiconductor**

**Devices** CRC Press

This book gives insight into the emerging semiconductor devices from their applications in electronic circuits. It discusses the challenges in the field of engineering and applications of advanced low-power devices. Emerging Low-Power Semiconductor Devices: Applications for Future Technology Nodes offers essential exposure to low-power devices, and applications in wireless, biosensing, and circuit domains. This book provides a detailed discussion on

all aspects, including the current and future scenarios related to the low-power device. The book also presents basic knowledge about field-effect transistor (FET) devices and introduces emerging and novel FET devices. The chapters include a review of the usage of FET devices in various domains like biosensing, wireless, and cryogenics applications. The chapters also explore device-circuit co-design issues in the digital and analog domains. The content is presented in an easy-to-follow manner that makes it ideal for individuals new to the subject. This book is intended for scientists, researchers, and postgraduate students looking for an understanding of

device physics, circuits, and systems. *Key Digital Trends Shaping the Future of Information and Management Science* Springer Nature  
This book comprises select proceedings of the International Conference on VLSI, Communication and Signal processing (VCAS 2018). It looks at latest research findings in VLSI design and applications. The book covers a wide range of topics in electronics and communication engineering, especially in the area of microelectronics and VLSI design, communication systems and networks, and image and signal processing. The contents of this book will be useful to researchers and

professionals alike. **Advances in VLSI, Signal Processing, Power Electronics, IoT, Communication and Embedded Systems** Springer Nature  
This book presents select peer-reviewed proceedings of the 2nd International Conference on Advances in VLSI and Embedded Systems (AVES 2021). This book covers cutting-edge original research in VLSI design, devices and emerging technologies, embedded systems, and CAD for VLSI. To address the demand for complex and high-functionality systems as well as portable consumer electronics, the contents focus on advanced topics of circuit and systems design, fabrication,

testing, and standardization. This book is useful for students, researchers as well as industry

professionals interested in emerging trends in VLSI and embedded systems.