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*Here is a laboratory workbook filled with interesting and challenging projects for digital logic design and embedded systems classes. The workbook introduces you to fully integrated modern CAD tools, logic simulation, logic synthesis using hardware description languages, design hierarchy, current generation field programmable gate array*

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technology, and SoPC design. Projects cover such areas as serial communications, state machines with video output, video games and graphics, robotics, pipelined RISC processor cores, and designing computer systems using a commercial processor core. The 4th International Conference on Electronic, Communications and Networks (CECNet2014) inherits the fruitfulness of the past three conferences and lays a foundation for the forthcoming next year in

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Shanghai. CECNet2014 was hosted by Hubei University of Science and Technology, China, with the main objective of providing a comprehensive global forum. Turbo Code Applications: a journey from a paper to realization presents contemporary applications of turbo codes in thirteen technical chapters. Each chapter focuses on a particular communication technology utilizing turbo codes, and they are written by experts who have been working in related areas from around the world. This

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book is published to celebrate the 10 year anniversary of turbo codes invention by Claude Berrou Alain Glavieux and Punya Thitimajshima (1993-2003). As known for more than a decade, turbo code is the astonishing error control coding scheme which its performance closes to the Shannon's limit. It has been honored consequently as one of the seventeen great innovations during the first fifty years of information theory foundation. With the amazing performance compared to that of other

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existing codes, turbo codes have been adopted into many communication systems and incorporated with various modern industrial standards. Numerous research works have been reported from universities and advance companies worldwide. Evidently, it has successfully revolutionized the digital communications. Turbo code and its successors have been applied in most communications starting from the ground terrestrial systems of data storage, ADSL mode m, and fiber optic communications.

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Subsequently, it moves up to the air channel applications by employing to wireless communication systems, and then ties up to the space by using in digital video broadcasting and satellite communications. Undoubtedly, with the excellent error correction potential, it has been selected to support data transmission in space exploring system as well.

Starts with an overview of today's FPGA technology, devices, and tools for designing state-of-the-art DSP systems. A case study

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*in the first chapter is the basis for more than 30 design examples throughout. The following chapters deal with computer arithmetic concepts, theory and the implementation of FIR and IIR filters, multirate digital signal processing systems, DFT and FFT algorithms, and advanced algorithms with high future potential. Each chapter contains exercises. The VERILOG source code and a glossary are given in the appendices, while the accompanying CD-ROM*

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*contains the examples in VHDL and Verilog code as well as the newest Altera "Baseline" software. This edition has a new chapter on adaptive filters, new sections on division and floating point arithmetics, an up-date to the current Altera software, and some new exercises.*

*Make: FPGAs*

*Fuzzy Controllers*

*ICBME 2013, 4th to 7th*

*December 2013, Singapore*

*Stockholm, Sweden, 10-14*

*September 2001*

*Design of Compact Motion*

*Sensing Solutions for*



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*Navigation of Autonomous  
Systems*

*Pervasive Computing  
Paradigms for Mental  
Health*

*Dawn is the first mission to orbit a main belt asteroid and the first scientific mission to use ion propulsion. Major objectives of this mission include mapping of the surfaces of 4 Vesta and 1 Ceres, determining its topography from stereo measurements, determining its mineralogy, measuring its elemental composition and obtaining gravity data. This book describes the Dawn mission, its exploration and scientific*

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*objectives, the instruments that accomplish those objectives, the operations plan and the education and outreach plan. It is directed to those studying asteroids and the evolution of the solar system. This volume will be a valuable reference for anyone who uses data from the instruments of the DAWN mission. Previously published in Space Science Reviews, Vol. 163/1-4, 2012.*

*This book provides the advanced issues of FPGA design as the underlying theme of the work. In practice, an engineer typically needs to be mentored for several years before these principles are*

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*appropriately utilized. The topics that will be discussed in this book are essential to designing FPGA's beyond moderate complexity. The goal of the book is to present practical design techniques that are otherwise only available through mentorship and real-world experience.*

*A hands-on introduction to FPGA prototyping and SoC design This Second Edition of the popular book follows the same "learning-by-doing" approach to teach the fundamentals and practices of VHDL synthesis and FPGA prototyping. It uses a coherent series of examples to demonstrate the process to*

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*develop sophisticated digital circuits and IP (intellectual property) cores, integrate them into an SoC (system on a chip) framework, realize the system on an FPGA prototyping board, and verify the hardware and software operation. The examples start with simple gate-level circuits, progress gradually through the RT (register transfer) level modules, and lead to a functional embedded system with custom I/O peripherals and hardware accelerators. Although it is an introductory text, the examples are developed in a rigorous manner, and the derivations follow strict design guidelines and*

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*coding practices used for large, complex digital systems. The new edition is completely updated. It presents the hardware design in the SoC context and introduces the hardware-software co-design concept. Instead of treating examples as isolated entities, the book integrates them into a single coherent SoC platform that allows readers to explore both hardware and software “programmability” and develop complex and interesting embedded system projects. The revised edition: Adds four general-purpose IP cores, which are multi-channel PWM (pulse width modulation) controller, I2C*

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*controller, SPI controller, and XADC (Xilinx analog-to-digital converter) controller. Introduces a music synthesizer constructed with a DDFS (direct digital frequency synthesis) module and an ADSR (attack-decay-sustain-release) envelop generator. Expands the original video controller into a complete stream-based video subsystem that incorporates a video synchronization circuit, a test pattern generator, an OSD (on-screen display) controller, a sprite generator, and a frame buffer. Introduces basic concepts of software-hardware co-design with Xilinx MicroBlaze MCS soft-*

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*core processor. Provides an overview of bus interconnect and interface circuit. Introduces basic embedded system software development. Suggests additional modules and peripherals for interesting and challenging projects. The FPGA Prototyping by VHDL Examples, Second Edition makes a natural companion text for introductory and advanced digital design courses and embedded system course. It also serves as an ideal self-teaching guide for practicing engineers who wish to learn more about this emerging area of interest.*

*This comprehensive book deals*

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*with motion estimation for autonomous systems from a biological, algorithmic and digital perspective. An algorithm, which is based on the optical flow constraint equation, is described in detail.*

*WoTUG-39 & WoTUG-40*

*Advanced FPGA Design*

*Motion Vision*

*Digital Design (VHDL)*

*Journal of Scientific and*

*Industrial Research*

*FPGA-based Implementation of  
Signal Processing Systems*

A completely updated and expanded comprehensive treatment of VHDL and its applications to the design and



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simulation of real, industry-standard circuits. This comprehensive treatment of VHDL and its applications to the design and simulation of real, industry-standard circuits has been completely updated and expanded for the third edition. New features include all VHDL-2008 constructs, an extensive review of digital circuits, RTL analysis, and an unequaled collection of VHDL examples and exercises. The book focuses on the use of VHDL rather than solely on the language, with an emphasis on design examples and laboratory exercises. The third edition begins with a detailed review of digital circuits (combinatorial, sequential, state machines, and

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Create (FPGAs), thus providing a self-contained single reference for the teaching of digital circuit design with VHDL. In its coverage of VHDL-2008, it makes a clear distinction between VHDL for synthesis and VHDL for simulation. The text offers complete VHDL codes in examples as well as simulation results and comments. The significantly expanded examples and exercises include many not previously published, with multiple physical demonstrations meant to inspire and motivate students. The book is suitable for undergraduate and graduate students in VHDL and digital circuit design, and can be used as a professional reference for VHDL practitioners. It can also serve as

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a text for digital VLSI in-house or academic courses.

During the 1980s and early 1990s there was significant work in the design and implementation of hardware neurocomputers.

Nevertheless, most of these efforts may be judged to have been unsuccessful: at no time have hardware neurocomputers been in wide use. This lack of success may be largely attributed to the fact that earlier work was almost entirely aimed at developing custom neurocomputers, based on ASIC technology, but for such niches this technology was never sufficiently developed or competitive enough to justify large-scale adoption. On the other hand, gate-arrays of the period

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m- tioned were never large enough nor fast enough for serious arti?cial-neur- network (ANN) applications. But technology has now improved: the capacity and performance of current FPGAs are such that they present a much more realistic alternative. Consequently neurocomputers based on FPGAs are now a much more practical proposition than they have been in the past. This book summarizes some work towards this goal and consists of 12 papers that were selected, after review, from a number of submissions. The book is nominally divided into three parts: Chapters 1 through 4 deal with foundational issues; Chapters 5 through 11 deal with a variety of implementations; and

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Chapter 12 looks at the lessons learned from a large-scale project and also reconsiders design issues in light of current and future technology.

Revised edition of: FPGA-based implementation of signal processing systems / Roger Woods ... [et al.]. 2008.

Fuzzy control theory is an emerging area of research. At the core of many engineering problems is the problem of control of different systems.

These systems range all the way from classical inverted pendulum to auto-focusing system of a digital camera. Fuzzy control systems have demonstrated their enhanced performance in all these areas. Progress in this domain is very fast and there was

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critical need of a book that captures all the recent advances both in theory and in applications. Serving this purpose, this book is conceived. This book will provide you a very clear picture of current status of fuzzy control research.

This book is intended for researchers, engineers, and postgraduate students specializing in fuzzy systems, control engineering, and robotics.

Design Recipes for FPGAs: Using Verilog and VHDL

EDN

Rapid Prototyping of Digital Systems

Digital Design for Beginners with Mojo and Lucid HDL

Trends in Advanced Intelligent Control, Optimization and Automation

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Embedded Systems Design with  
FPGAs

***Integrated circuit design for biomedical applications requires an interdisciplinary background, ranging from electrical engineering to material engineering to computer science. This book is written to help build the foundation for researchers, engineers, and students to further develop their interest and knowledge in this field. This book provides an overview of various biosensors by introducing fundamental building***

Create

*blocks for integrated biomedical systems. State-of-the-art projects for various applications and experience in developing these systems are explained in detail. Future design trends in this field is also discussed in this book. The push to move products to market as quickly and cheaply as possible is fiercer than ever, and accordingly, engineers are always looking for new ways to provide their companies with the edge over the competition. Field-Programmable Gate*



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***Arrays (FPGAs), which are faster, denser, and more cost-effective than traditional programmable logic devices (PLDs), are quickly becoming one of the most widespread tools that embedded engineers can utilize in order to gain that needed edge. FPGAs are especially popular for prototyping designs, due to their superior speed and efficiency. This book hones in on that rapid prototyping aspect of FPGA use, showing designers exactly how they can cut time off production cycles***

*and save their companies money drained by costly mistakes, via prototyping designs with FPGAs first. Reading it will take a designer with a basic knowledge of implementing FPGAs to the “next-level of FPGA use because unlike broad beginner books on FPGAs, this book presents the required design skills in a focused, practical, example-oriented manner. In-the-trenches expert authors assure the most applicable advice to practicing engineers Dual focus on successfully making critical decisions*

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***and avoiding common pitfalls appeals to engineers pressured for speed and perfection Hardware and software are both covered, in order to address the growing trend toward "cross-pollination" of engineering expertise All the design and development inspiration and direction a hardware engineer needs in one blockbuster book! Clive "Max" Maxfield renowned author, columnist, and editor of PL DesignLine has selected the very best FPGA design material from the Newnes portfolio and***

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*has compiled it into this volume. The result is a book covering the gamut of FPGA design from design fundamentals to optimized layout techniques with a strong pragmatic emphasis. In addition to specific design techniques and practices, this book also discusses various approaches to solving FPGA design problems and how to successfully apply theory to actual design tasks. The material has been selected for its timelessness as well as for its relevance to contemporary FPGA design*

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**issues. Contents Chapter 1  
Alternative FPGA  
Architectures Chapter 2  
Design Techniques, Rules,  
and Guidelines Chapter 3 A  
VHDL Primer: The  
Essentials Chapter 4  
Modeling Memories Chapter  
5 Introduction to  
Synchronous State Machine  
Design and Analysis  
Chapter 6 Embedded  
Processors Chapter 7  
Digital Signal Processing  
Chapter 8 Basics of  
Embedded Audio Processing  
Chapter 9 Basics of  
Embedded Video and Image  
Processing Chapter 10  
Programming Streaming FPGA**

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***Applications Using Block  
Diagrams In Simulink  
Chapter 11 Ladder and  
functional block  
programming Chapter 12  
Timers \*Hand-picked  
content selected by Clive  
"Max" Maxfield, character,  
luminary, columnist, and  
author \*Proven best design  
practices for FPGA  
development, verification,  
and low-power \*Case  
histories and design  
examples get you off and  
running on your current  
project  
Concurrent and parallel  
systems are intrinsic to  
the technology which***

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*underpins almost every aspect of our lives today. This book presents the combined post-proceedings for two important conferences on concurrent and parallel systems: Communicating Process Architectures 2017, held in Sliema, Malta, in August 2017, and Communicating Process Architectures 2018, held in Dresden, Germany, in August 2018. CPA 2017: Fifteen papers were accepted for presentation and publication, they cover topics including mathematical theory,*

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*programming languages, design and support tools, verification, and multicore infrastructure and applications ranging from supercomputing to embedded. A workshop on domain-specific concurrency skeletons and the abstracts of eight fringe presentations reporting on new ideas, work in progress or interesting thoughts associated with concurrency are also included in these proceedings. CPA 2018: Eighteen papers were accepted for presentation*



*and publication, they cover topics including mathematical theory, design and programming language and support tools, verification, multicore run-time infrastructure, and applications at all levels from supercomputing to embedded. A workshop on translating CSP-based languages to common programming languages and the abstracts of four fringe presentations on work in progress, new ideas, as well as demonstrations and concerns that certain*

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*common practices in  
concurrency are harmful  
are also included in these  
proceedings. The book will  
be of interest to all  
those whose work involves  
concurrent and parallel  
systems.*

*Communicating Process  
Architectures 2017 & 2018  
a Journey from a Paper to  
realization*

*The Dawn Mission to Minor  
Planets 4 Vesta and 1  
Ceres*

*The VHDL Cookbook  
Recent Advances in Theory  
and Applications  
CERN.*

Holger Scherl introduces the

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reader to the reconstruction problem in computed tomography and its major scientific challenges that range from computational efficiency to the fulfillment of Tuy's sufficiency condition. The assessed hardware architectures include multi- and many-core systems, cell broadband engine architecture, graphics processing units, and field programmable gate arrays. Digital Systems Design with FPGAs and CPLDs explains how to design and develop digital electronic systems using programmable logic devices (PLDs). Totally practical in nature, the

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book features numerous (quantify when known) case study designs using a variety of Field Programmable Gate Array (FPGA) and Complex Programmable Logic Devices (CPLD), for a range of applications from control and instrumentation to semiconductor automatic test equipment. Key features include: \* Case studies that provide a walk through of the design process, highlighting the trade-offs involved. \* Discussion of real world issues such as choice of device, pin-out, power supply, power supply decoupling, signal integrity- for embedding

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FPGAs within a PCB based design. With this book engineers will be able to: \*

- \* Use PLD technology to develop digital and mixed signal electronic systems \*
- \* Develop PLD based designs using both schematic capture and VHDL synthesis techniques \*
- \* Interface a PLD to digital and mixed-signal systems \*
- \* Undertake complete design exercises from design concept through to the build and test of PLD based electronic hardware

This book will be ideal for electronic and computer engineering students taking a practical or Lab based course on digital systems development using PLDs and

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for engineers in industry looking for concrete advice on developing a digital system using a FPGA or CPLD as its core. Case studies that provide a walk through of the design process, highlighting the trade-offs involved. Discussion of real world issues such as choice of device, pin-out, power supply, power supply decoupling, signal integrity- for embedding FPGAs within a PCB based design.

This textbook serves as an introduction to the subject of embedded systems design, with emphasis on integration of custom hardware components with software.

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The key problem addressed in the book is the following: how can an embedded systems designer strike a balance between flexibility and efficiency? The book describes how combining hardware design with software design leads to a solution to this important computer engineering problem. The book covers four topics in hardware/software codesign: fundamentals, the design space of custom architectures, the hardware/software interface and application examples. The book comes with an associated design environment that helps the

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reader to perform experiments in hardware/software codesign. Each chapter also includes exercises and further reading suggestions. Improvements in this second edition include labs and examples using modern FPGA environments from Xilinx and Altera, which will make the material in this book applicable to a greater number of courses where these tools are already in use. More examples and exercises have been added throughout the book. "If I were teaching a course on this subject, I would use this as a resource and text. If I were a student who



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wanted to learn codesign, I would look for a course that at least used a similar approach. If I were an engineer or engineering manager who wanted to learn more about codesign from a very practical perspective, I would read this book first before any other. When I first started learning about codesign as a practitioner, a book like this would have been the perfect introduction." --Grant

Martin, Tensilica--

A quick introduction to VHDL.

14th International  
Conference , FPL 2004,  
Leuven, Belgium, August  
30-September 1, 2004,

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Proceedings

Learning FPGAs

Turbo Code Applications

Digital Signal Processing

with Field Programmable Gate

Arrays

Proceedings

SOPC Edition

The book is divided into four major parts. Part I covers HDL constructs and synthesis of basic digital circuits. Part II provides an overview of embedded software development with the emphasis on low-level I/O access and drivers. Part III demonstrates the design and development of hardware and software for several complex I/O peripherals, including PS2 keyboard and

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mouse, a graphic video controller, an audio codec, and an SD (secure digital) card. Part IV provides three case studies of the integration of hardware accelerators, including a custom GCD (greatest common divisor) circuit, a Mandelbrot set fractal circuit, and an audio synthesizer based on DDFS (direct digital frequency synthesis) methodology. The book utilizes FPGA devices, Nios II soft-core processor, and development platform from Altera Co., which is one of the two main FPGA manufactures. Altera has a generous university program that provides free software and

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discounted prototyping boards  
for educational institutions  
(details at

<http://www.altera.com/university>  
) . The two main educational  
prototyping boards are known as  
DE1 (\$99) and DE2 (\$269). All  
experiments can be implemented  
and tested with these boards. A  
board combined with this book  
becomes a "turn-key" solution  
for the SoPC design experiments  
and projects. Most HDL and C  
codes in the book are device  
independent and can be adapted  
by other prototyping boards as  
long as a board has similar I/O  
configuration.

This book contains the papers

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presented at the 14th International Conference on Field Programmable Logic and Applications (FPL) held during August 30th- September 1st 2004. The conference was hosted by the Interuniversity Micro- Electronics Center (IMEC) in Leuven, Belgium. The FPL series of conferences was founded in 1991 at Oxford University (UK), and has been held annually since: in Oxford (3 times), Vienna, Prague, Darmstadt, London, Tallinn, Glasgow, Villach, Belfast, Montpellier and Lisbon. It is the largest and oldest conference in reconfigurable computing and

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brings together academic researchers, industry experts, users and newcomers in an informal, welcoming atmosphere that encourages productive exchange of ideas and knowledge between the delegates. The fast and exciting advances in field programmable logic are increasing steadily with more and more application potential and need. New ground has been broken in architectures, design techniques, (partial) run-time reconfiguration and applications of field programmable devices in several different areas. Many of these recent innovations are reported

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in this volume. The size of the FPL conferences has grown significantly over the years. FPL in 2003 saw 216 papers submitted. The interest and support for FPL in the programmable logic community continued this year with 285 scientific papers submitted, demonstrating a 32% increase when compared to the year before. The technical program was assembled from 78 selected regular papers, 45 additional short papers and 29 posters, resulting in this volume of proceedings. The program also included three invited plenary keynote presentations from

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Xilinx, Gilder Technology Report and Altera, and three embedded tutorials from Xilinx, the Universit ? at Karlsruhe (TH) and the University of Oslo.

This volume contains the proceedings of the KKA 2017 – the 19th Polish Control Conference, organized by the Department of Automatics and Biomedical Engineering, AGH University of Science and Technology in Kraków, Poland on June 18–21, 2017, under the auspices of the Committee on Automatic Control and Robotics of the Polish Academy of Sciences, and the Commission for Engineering Sciences of the



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Polish Academy of Arts and Sciences. Part 1 deals with general issues of modeling and control, notably flow modeling and control, sliding mode, predictive, dual, etc. control. In turn, Part 2 focuses on optimization, estimation and prediction for control. Part 3 is concerned with autonomous vehicles, while Part 4 addresses applications. Part 5 discusses computer methods in control, and Part 6 examines fractional order calculus in the modeling and control of dynamic systems. Part 7 focuses on modern robotics. Part 8 deals with modeling and identification, while

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Part 9 deals with problems related to security, fault detection and diagnostics. Part 10 explores intelligent systems in automatic control, and Part 11 discusses the use of control tools and techniques in biomedical engineering. Lastly, Part 12 considers engineering education and teaching with regard to automatic control and robotics. Embedded Systems Design with Platform FPGAs introduces professional engineers and students alike to system development using Platform FPGAs. The focus is on embedded systems but it also serves as a general guide to

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building custom computing systems. The text describes the fundamental technology in terms of hardware, software, and a set of principles to guide the development of Platform FPGA systems. The goal is to show how to systematically and creatively apply these principles to the construction of application-specific embedded system architectures. There is a strong focus on using free and open source software to increase productivity. Each chapter is organized into two parts. The white pages describe concepts, principles, and general knowledge. The gray pages

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provide a technical rendition of the main issues of the chapter and show the concepts applied in practice. This includes step-by-step details for a specific development board and tool chain so that the reader can carry out the same steps on their own. Rather than try to demonstrate the concepts on a broad set of tools and boards, the text uses a single set of tools (Xilinx Platform Studio, Linux, and GNU) throughout and uses a single developer board (Xilinx ML-510) for the examples. Explains how to use the Platform FPGA to meet complex design requirements and improve

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product performance Presents  
both fundamental concepts  
together with pragmatic, step-by-  
step instructions for building a  
system on a Platform FPGA  
Includes detailed case studies,  
extended real-world examples,  
and lab exercises

Turning Software into Hardware  
with Eight Fun and Easy DIY  
Projects

Rapid System Prototyping with  
FPGAs

A Guide to Digital Design and  
Synthesis

Selected Papers from MindCare  
2016, Fabulous 2016, and IIoT  
2015

Electronics, Communications

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## and Networks IV

### Embedded SoPC Design with Nios II Processor and VHDL Examples

This book constitutes the refereed proceedings of the 6th International Symposium on Pervasive Computing Paradigms for Mental Health, MindCare 2016, held in Barcelona, Spain, in November 2016, and the Second International Conference of Future Access Enablers of Ubiquitous and Intelligent Infrastructures, Fabulous 2016, Belgrade, Serbia, October 24-26, 2016, and the Third International Conference on Interoperability in IoT, IIoT 2015, Rome, Italy, October 26-27, 2015. The 24 papers were selected from

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32 submissions. MindCare presents technologies in favor of maintaining and improving psychological well-being. Fabulous presents broad areas of future wireless networks, ambient and assisted living and smart infrastructures in order to interact, exchange ideas, expertise, experience and know-how. And finally IIoT presents tools and services in home automation and industrial service.

This book presents the methodologies and for embedded systems design, using field programmable gate array (FPGA) devices, for the most modern applications. Coverage includes state-of-the-art research from

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academia and industry on a wide range of topics, including applications, advanced electronic design automation (EDA), novel system architectures, embedded processors, arithmetic, and dynamic reconfiguration.

Rapid Prototyping of Digital Systems, Second Edition provides an exciting and challenging laboratory component for an undergraduate digital logic design class. The more advanced topics and exercises are also appropriate for consideration at schools that have an upper level course in digital logic or programmable logic. Design engineers working in industry will also want to consider this book for a rapid introduction



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to FPLD technology and logic synthesis using commercial CAD tools, especially if they have not had previous experience with the new and rapidly evolving technology. Two tutorials on the Altera CAD tool environment, an overview of programmable logic, and a design library with several easy-to-use input and output functions were developed for this book to help the reader get started quickly. Early design examples use schematic capture and library components. VHDL is used for more complex designs after a short introduction to VHDL-based synthesis. A coupon is included with the text for purchase of the new UP 1X board. The additional

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logic and memory in the UP 1X's FLEX 10K70 is useful on larger design projects such as computers and video games. The second edition includes an update chapter on programmable logic, new robot sensors and projects, optional Verilog examples, and a meta assembler which can be used to develop assemble language programs for the computer designs in Chapters 8 and 13.

Learn how to design digital circuits with FPGAs (field-programmable gate arrays), the devices that reconfigure themselves to become the very hardware circuits you set out to program. With this practical guide, author Justin Rajewski shows you hands-on how to create

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FPGA projects, whether you ' re a programmer, engineer, product designer, or maker. You ' ll quickly go from the basics to designing your own processor. Designing digital circuits used to be a long and costly endeavor that only big companies could pursue. FPGAs make the process much easier, and now they ' re affordable enough even for hobbyists. If you ' re familiar with electricity and basic electrical components, this book starts simply and progresses through increasingly complex projects. Set up your environment by installing Xilinx ISE and the author ' s Mojo IDE Learn how hardware designs are broken into modules, comparable to functions

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in a software program Create digital hardware designs and learn the basics on how they ' ll be implemented by the FPGA Build your projects with Lucid, a beginner-friendly hardware description language, based on Verilog, with syntax similar to C/C++ and Java

Evaluation of State-of-the-Art Hardware Architectures for Fast Cone-Beam CT Reconstruction

Accelerating the Design Process

Xilinx MicroBlaze MCS SoC

FPGA Implementations of Neural Networks

FPGA Prototyping by VHDL

Examples

FPGAs: World Class Designs

*VERILOG HDL, Second Edition* by

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*Samir Palnitkar* With a Foreword by *Prabhu Goel* Written for both experienced and new users, this book gives you broad coverage of VerilogHDL. The book stresses the practical design and verification perspective of Verilog rather than emphasizing only the language aspects. The information presented is fully compliant with the IEEE 1364-2001 Verilog HDL standard. Among its many features, this edition-  
• Describes state-of-the-art verification methodologies  
• Provides full coverage of gate, dataflow (RTL), behavioral and switch modeling  
• Introduces you to the Programming Language Interface (PLI)  
• Describes logic synthesis methodologies

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*bull;Explains timing and delay simulation bull;Discusses user-defined primitives bull;Offers many practical modeling tips Includes over 300 illustrations, examples, and exercises, and a Verilog resource list.Learning objectives and summaries are provided for each chapter. About the CD-ROMThe CD-ROM contains a Verilog simulator with a graphical user interface and the source code for the examples in the book. Whatpeople are saying about Verilog HDL- "Mr.Palnitkar illustrates how and why Verilog HDL is used to develop today'smost complex digital designs. This book is valuable to both the novice and theexperienced Verilog user. I highly recommend it to anyone*

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*with physical sciences including physics, chemistry and mathematics to apply them to biology and medicine. Applying such concepts to the human body is very much the same concepts that go into building and programming a machine. The goal is to better understand, replace or fix a target system to ultimately improve the quality of healthcare. With this understanding, the conference proceedings offer a single platform for individuals and organizations working in the biomedical engineering related field to gather and network with each other in so doing create the catalyst for future development of biomedical engineering in Asia.*

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*Digital Design: An Embedded Systems Approach Using VHDL provides a foundation in digital design for students in computer engineering, electrical engineering and computer science courses. It takes an up-to-date and modern approach of presenting digital logic design as an activity in a larger systems design context. Rather than focus on aspects of digital design that have little relevance in a realistic design context, this book concentrates on modern and evolving knowledge and design skills. Hardware description language (HDL)-based design and verification is emphasized--VHDL examples are used extensively throughout. By treating digital logic as part of*

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*embedded systems design, this book provides an understanding of the hardware needed in the analysis and design of systems comprising both hardware and software components. Includes a Web site with links to vendor tools, labs and tutorials. Presents digital logic design as an activity in a larger systems design context Features extensive use of VHDL examples to demonstrate HDL (hardware description language) usage at the abstract behavioural level and register transfer level, as well as for low-level verification and verification environments Includes worked examples throughout to enhance the reader's understanding and retention of the material Companion Web site includes*

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*links to tools for FPGA design from Synplicity, Mentor Graphics, and Xilinx, VHDL source code for all the examples in the book, lecture slides, laboratory projects, and solutions to exercises*

*An Embedded Systems Approach Using VHDL*

*Digital Systems Design with FPGAs and CPLDs*

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***Proceedings of KKA 2017—The 19th Polish Control Conference, Kraków, Poland, June 18–21, 2017***

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