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Virtualization of Computing Architecture

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Advanced Computing

Embedded SoPC Design with Nios II Processor and VHDL Examples

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Proceedings of SLIP '03

12th International Workshop, Santa Barbara, USA, August 17-20,2010, Proceedings

12th Annual IEEE Symposium on Field-Programmable Custom Computing Machines :

Proceedings : 20-23 April, 2004, Napa, California

Evolvable Hardware

FPGAs

Baseband Technologies for 3G Handsets and Basestations

Trends in Intelligent Robotics

RFID Systems

10th International Conference, IACC 2020, Panaji, Goa, India, December 5-6, 2020,

Revised Selected Papers, Part II

Skalierbare adaptive System-on-Chip-Architekturen für Inter-Car und Intra-Car

Kommunikationsgateways

A Digital Signal Processor for Particle Detectors

FPGAs

Better Software. Faster!

Chaotic Systems, Artificial Neural Networks, Random Number Generators, and
Secure Communication Systems

Fundamentals, Advanced Features, and Applications in Industrial Electronics
Proceedings, Guwahati, India, December 8 - 12, 2014

Reconfigurable Computing Systems Engineering

A Proceedings Volume from the 3rd IFAC Symposium, Sydney, Australia, 6-8
September 2004

Reconfigurable Computing: Architectures, Tools and Applications

Rapid Prototyping of Digital Systems

15th Robot World Cup and Congress, FIRA 2010, Bangalore, India, September 15-19,
2010, Proceedings

Optimale Betriebsführung des Modularen Multilevel-Umrichters als
Antriebsumrichter fuer Drehstrommaschinen

VII Latin American Congress on Biomedical Engineering CLAIB 2016, Bucaramanga,
Santander, Colombia, October 26th -28th, 2016

4th International Symposium on Intelligence Computation and Applications, ISICA

2009, Huangshi, China, October 23-25, 2009, Proceedings
A Tutorial Approach
14th International Conference , FPL 2004, Leuven, Belgium, August 30-September 1,
2004, Proceedings
Proceedings of International Conference, ICERECT 2012
Fundamentals, Advanced Features, and Applications in Industrial Electronics
Digital Signal Processing with Field Programmable Gate Arrays
Hands-on Experience with Altera FPGA Development Boards
Cryptographic Hardware and Embedded Systems -- CHES 2010
Design Principles and Applications
International Workshop on System Level Interconnect Prediction
6th International Symposium, ARC 2010, Bangkok, Thailand, March 17-19, 2010,
Proceedings

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MONTGOMERY KAYDEN

Virtualization of Computing Architecture
KIT Scientific Publishing

This book contains the papers 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 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 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 Xilinx, Gilder

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

Green IT Engineering: Social, Business and Industrial Applications Springer

The recent rise of "smart" products has been made possible through tight co-design of hardware and software. The growing amount of software and hence processors in applications all around us allows for increased flexibility in the application functionality through its life cycle. Not so long ago a device felt outdated after you owned it for a couple of months. Today, a continuous stream of new software applications and updates make products feel truly "smart". The result is an almost magical user experience where the same product

can do more today than it could do yesterday.

In this book we dive deep into a key methodology to enable concurrent hardware/software development by decoupling the dependency of the software development from hardware availability: virtual prototyping. The ability to start software development much earlier in the design cycle drives a true "shift-left" of the entire product development schedule and results in better products that are available earlier in the market.

Throughout the book, case studies illustrate how virtual prototypes are being deployed by major companies around the world. If you are interested in a quick feel for what virtual prototyping has to offer for practical deployment, we recommend picking a few case studies to read,

before diving into the details of the methodology.

Of course, this book can only offer a small snapshot of virtual prototype use cases for faster software development. However, as most software bring-up, debug and test principles are similar across markets and applications, it is not hard to realize why virtual prototypes are being leveraged whenever software is an intrinsic part of the product functionality, after reading this book.

Advanced Computing Evgeni Stavinov

To cope with the new running conditions in the ALICE experiment at the Large Hadron Collider at CERN, a new integrated circuit named SAMPA has been created that can process 32 analogue channels, convert them to digital, perform filtering and

compression, and transmit the data on high speed links to the data acquisition system. The main purpose of this work is to specify, design, test and verify the digital signal processing part of the SAMPA device to accommodate the requirements of the detectors involved. Innovative solutions have been employed to reduce the bandwidth required by the detectors, as well as adaptations to ease data handling later in the processing chain. The new SAMPA device was built to replace two existing circuits, in addition to reducing the current consumption, and doubling the amount of processing channels. About 50000 of the devices will be installed in the Time Projection Chamber and Muon Chamber detectors in the ALICE experiment.

Embedded SoPC Design with Nios II Processor and VHDL Examples Springer 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 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 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.

Proceedings Now Publishers Inc

Research and innovation in areas such as circuits, microsystems, packaging, biocompatibility, miniaturization, power supplies, remote control, reliability, and lifespan are leading to a rapid increase in the range of devices and corresponding applications in the field of wearable and implantable biomedical microsystems, which are used for monitoring, diagnosing, and controlling the health conditions of the human body. This book provides comprehensive coverage of the fundamental design principles and validation for implantable microsystems, as well as several major application areas. Each component in an implantable device is described in details, and major case studies

demonstrate how these systems can be optimized for specific design objectives. The case studies include applications of implantable neural signal processors, brain-machine interface (BMI) systems intended for both data recording and treatment, neural prosthesis, bladder pressure monitoring for treating urinary incontinence, implantable imaging devices for early detection and diagnosis of diseases as well as electrical conduction block of peripheral nerve for chronic pain management. *Implantable Biomedical Microsystems* is the first comprehensive coverage of bioimplantable system design providing an invaluable information source for researchers in Biomedical, Electrical, Computer, Systems, and Mechanical Engineering as well as engineers

involved in design and development of wearable and implantable bioelectronic devices and, more generally, teams working on low-power microsystems and their corresponding wireless energy and data links. First time comprehensive coverage of system-level and component-level design and engineering aspects for implantable microsystems. Provides insight into a wide range of proven applications and application specific design trade-offs of bioimplantable systems, including several major case studies Enables Engineers involved in development of implantable electronic systems to optimize applications for specific design objectives.

Proceedings of SLIP '03 CRC Press

This volume provides a comprehensive

state of the art overview of a series of advanced trends and concepts that have recently been proposed in the area of green information technologies engineering as well as of design and development methodologies for models and complex systems architectures and their intelligent components. The contributions included in the volume have their roots in the authors' presentations, and vivid discussions that have followed the presentations, at a series of workshop and seminars held within the international TEMPUS-project GreenCo project in United Kingdom, Italy, Portugal, Sweden and the Ukraine, during 2013-2015 and at the 1st - 5th Workshops on Green and Safe Computing (GreenSCom) held in Russia, Slovakia and the Ukraine. The book

presents a systematic exposition of research on principles, models, components and complex systems and a description of industry- and society-oriented aspects of the green IT engineering. A chapter-oriented structure has been adopted for this book following a “vertical view” of the green IT, from hardware (CPU and FPGA) and software components to complex industrial systems. The 15 chapters of the book are grouped into five sections: (1) Methodology and Principles of Green IT Engineering for Complex Systems, (2) Green Components and Programmable Systems, (3) Green Internet Computing, Cloud and Communication Systems, (4) Modeling and Assessment of Green Computer Systems and Infrastructures, and (5) Green PLC-Based Systems for

Industry Applications. The chapters provide an easy to follow, comprehensive introduction to the topics that are addressed, including the most relevant references, so that anyone interested in them can start the study by being able to easily find an introduction to the topic through these references. At the same time, all of them correspond to different aspects of the work in progress being carried out by various research groups throughout the world and, therefore, provide information on the state of the art of some of these topics, challenges and perspectives.

12th International Workshop, Santa Barbara, USA, August 17-20,2010, Proceedings Springer Nature

This book describes a comprehensive framework for hardware/software co-

design, optimization, and use of robust, low-cost, and cyberphysical digital microfluidic systems. Readers with a background in electronic design automation will find this book to be a valuable reference for leveraging conventional VLSI CAD techniques for emerging technologies, e.g., biochips or bioMEMS. Readers from the circuit/system design community will benefit from methods presented to extend design and testing techniques from microelectronics to mixed-technology microsystems. For readers from the microfluidics domain, this book presents a new design and development strategy for cyberphysical microfluidics-based biochips suitable for large-scale bioassay applications. • Takes a transformative, “cyberphysical”

approach towards achieving closed-loop and sensor feedback-driven biochip operation under program control; • Presents a “physically-aware” system reconfiguration technique that uses sensor data at intermediate checkpoints to dynamically reconfigure biochips; • Enables readers to simplify the structure of biochips, while facilitating the “general-purpose” use of digital microfluidic biochips for a wider range of applications.

12th Annual IEEE Symposium on Field-Programmable Custom Computing Machines : Proceedings : 20-23 April, 2004, Napa, California

Springer Science & Business Media
PES College of Engineering is organizing an International Conference on Emerging Research in Electronics, Computer

Science and Technology (ICERECT-12) in Mandya and merging the event with Golden Jubilee of the Institute. The Proceedings of the Conference presents high quality, peer reviewed articles from the field of Electronics, Computer Science and Technology. The book is a compilation of research papers from the cutting-edge technologies and it is targeted towards the scientific community actively involved in research activities.

Evolvable Hardware Springer

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

FPGAs KIT Scientific Publishing
Applied Reconfigurable Computing 12th International Symposium, ARC 2016
Mangaratiba, RJ, Brazil, March 22-24,

2016 ProceedingsSpringer
Baseband Technologies for 3G Handsets and Basestations Springer Science & Business Media
This book describes the implementation of green IT in various human and industrial domains. Consisting of four sections: “Development and Optimization of Green IT”, “Modelling and Experiments with Green IT Systems”, “Industry and Transport Green IT Systems”, “Social, Educational and Business Aspects of Green IT”, it presents results in two areas - the green components, networks, cloud and IoT systems and infrastructures; and the industry, business, social and education domains. It discusses hot topics such as programmable embedded and mobile systems, sustainable software and data

centers, Internet servicing and cyber social computing, assurance cases and lightweight cryptography in context of green IT. Intended for university students, lecturers and researchers who are interested in power saving and sustainable computing, the book also appeals to engineers and managers of companies that develop and implement energy efficient IT applications.
Trends in Intelligent Robotics Springer
This volume presents the proceedings of the CLAIB 2016, held in Bucaramanga, Santander, Colombia, 26, 27 & 28 October 2016. The proceedings, presented by the Regional Council of Biomedical Engineering for Latin America (CORAL), offer research findings, experiences and activities between institutions and universities to develop

Bioengineering, Biomedical Engineering and related sciences. The conferences of the American Congress of Biomedical Engineering are sponsored by the International Federation for Medical and Biological Engineering (IFMBE), Society for Engineering in Biology and Medicine (EMBS) and the Pan American Health Organization (PAHO), among other organizations and international agencies to bring together scientists, academics and biomedical engineers in Latin America and other continents in an environment conducive to exchange and professional growth.

RFID Systems Institute of Electrical & Electronics Engineers(IEEE)

The LNCS series reports state-of-the-art results in computer science research, development, and education, at a high

level and in both printed and electronic form. Enjoying tight cooperation with the R & D community, with numerous individuals, as well as with prestigious organizations and societies, LNCS has grown into the most comprehensive computer science research forum available. The scope of LNCS, including its subseries LNAI and LNBI, spans the whole range of computer science and information technology including interdisciplinary topics in a variety of application fields. The type of material published traditionally includes proceedings (published in time for the respective conference) post-proceedings (consisting of thoroughly revised final full papers) research monographs (which may be based on outstanding PhD work, research projects, technical reports, etc.)

More recently, several color-cover sublines have been added featuring, beyond a collection of papers, various added-value components; these sublines include tutorials (textbook-like monographs or collections of lectures given at advanced courses) state-of-the-art surveys (offering complete and mediated coverage of a topic) hot topics (introducing emergent topics to the broader community) In parallel to the printed book, each new volume is published electronically in LNCS Online. Book jacket.

10th International Conference, IACC 2020, Panaji, Goa, India, December 5-6, 2020, Revised Selected Papers, Part II
Springer Science & Business Media
These proceedings gather invited and contributed talks presented at the XXI

DAE-BRNS High Energy Physics Symposium, which was held at the Indian Institute of Technology Guwahati in December 2014. The contributions cover many of the most active research areas in particle physics, namely (i) Electroweak Physics; (ii) QCD and Heavy Ion Physics; (iii) Heavy Flavour Physics and CP Violation; (iv) Neutrino Physics; (v) Astro-particle Physics and Cosmology; (vi) Formal Theory; (vii) Future Colliders and New Machines; and (viii) BSM Physics: SUSY, Extra Dimensions, Composites etc. The DAE-BRNS High Energy Physics Symposium, widely considered to be one of the premiere symposiums organised in India in the field of elementary particle physics, is held every other year and supported by the Board of Research in

Nuclear Sciences, Department of Atomic Energy, India. Roughly 250 physicists and researchers participated in the 21st Symposium, discussing the latest advancements in the field in 18 plenary review talks, 15 invited mini-review talks and approximately 130 contributed presentations. Bringing together the essential content, the book offers a valuable resource for both beginning and advanced researchers in the field.
Springer Nature

Field Programmable Gate Arrays (FPGAs) are currently recognized as the most suitable platform for the implementation of complex digital systems targeting an increasing number of industrial electronics applications. They cover a huge variety of application areas, such as: aerospace, food industry, art,

industrial automation, automotive, biomedicine, process control, military, logistics, power electronics, chemistry, sensor networks, robotics, ultrasound, security, and artificial vision. This book first presents the basic architectures of the devices to familiarize the reader with the fundamentals of FPGAs before identifying and discussing new resources that extend the ability of the devices to solve problems in new application domains. Design methodologies are discussed and application examples are included for some of these domains, e.g., mechatronics, robotics, and power systems.

Skalierbare adaptive System-on-Chip-Architekturen für Inter-Car und Intra-Car Kommunikationsgateways
Springer

Field Programmable Gate Arrays (FPGAs) are currently recognized as the most suitable platform for the implementation of complex digital systems targeting an increasing number of industrial electronics applications. They cover a huge variety of application areas, such as: aerospace, food industry, art, industrial automation, automotive, biomedicine, process control, military, logistics, power electronics, chemistry, sensor networks, robotics, ultrasound, security, and artificial vision. This book first presents the basic architectures of the devices to familiarize the reader with the fundamentals of FPGAs before identifying and discussing new resources that extend the ability of the devices to solve problems in new application domains. Design methodologies are

discussed and application examples are included for some of these domains, e.g., mechatronics, robotics, and power systems.

A Digital Signal Processor for Particle Detectors Springer Nature

This book covers the basic theory, practical details and advanced research of the implementation of evolutionary methods on physical substrates. Most of the examples are from electronic engineering applications, including transistor-level design and system-level implementation. The authors present an overview of the successes achieved, and the book will act as a point of reference for both academic and industrial researchers.

FPGAs Applied Reconfigurable Computing 12th International

Symposium, ARC 2016 Mangaratiba, RJ, Brazil, March 22-24, 2016 Proceedings
This book provides an insight into the 'hot' field of Radio Frequency Identification (RFID) Systems In this book, the authors provide an insight into the field of RFID systems with an emphasis on networking aspects and research challenges related to passive Ultra High Frequency (UHF) RFID systems. The book reviews various algorithms, protocols and design solutions that have been developed within the area, including most recent advances. In addition, authors cover a wide range of recognized problems in RFID industry, striking a balance between theoretical and practical coverage. Limitations of the technology and state-of-the-art solutions are

identified and new research opportunities are addressed. Finally, the book is authored by experts and respected researchers in the field and every chapter is peer reviewed. Key Features: Provides the most comprehensive analysis of networking aspects of RFID systems, including tag identification protocols and reader anti-collision algorithms Covers in detail major research problems of passive UHF systems such as improving reading accuracy, reading range and throughput Analyzes other "hot topics" including localization of passive RFID tags, energy harvesting, simulator and emulator design, security and privacy Discusses design of tag antennas, tag and reader circuits for passive UHF RFID systems Presents EPCGlobal architecture

framework, middleware and protocols
Includes an accompanying website with
PowerPoint slides and solutions to the
problems

<http://www.site.uottawa.ca/~mbolic/RFID>
Book/ This book will be an invaluable
guide for researchers and graduate
students in electrical engineering and
computer science, and researchers and
developers in telecommunication
industry.

Better Software. Faster! Springer
Science & Business Media

This book is built around the use of
readymade soft processor cores for
FPGA design. In particular, the book
focuses on Altera FPGA boards. The book
explores many different embedded
systems needs and prepares its readers
for hands-on design and development of

such systems. Many worked-out
examples and case studies have been
included to enable a clear understanding
of design concepts. Primarily designed
as a textbook for core or lab courses on
FPGA based embedded systems, this
book will appeal to students and
instructors alike. The book takes an
autodidactic approach, which also makes
it suitable for hobbyists and practitioners
looking to acquaint themselves with
Altera FPGA boards.

Chaotic Systems, Artificial Neural
Networks, Random Number Generators,
and Secure Communication Systems
John Wiley & Sons

This book constitutes the refereed
proceedings of the 12th International
Symposium on Applied Reconfigurable
Computing, ARC 2016, held in Rio de

Janeiro, Brazil, in March 2016. The 20 full papers presented in this volume were carefully reviewed and selected from 47 submissions. They are organized in topical headings named: video and image processing; fault-tolerant

systems; tools and architectures; signal processing; and multicore systems. In addition, the book contains 3 invited papers and 8 poster papers on funded RD running and completed projects.

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