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MIDDLETON BALLARD

Applied Reconfigurable Computing BoD – Books on Demand

This book constitutes the thoroughly refereed post-conference proceedings of the Second International Joint Conference in Signal Processing and Information Technology, SPIT 2012, held in Dubai, UAE, in September 2012. The 32 papers included in this volume were carefully reviewed and selected from 330 submissions. The papers cover research and development activities in computer science, information technology, computational engineering, image and signal processing, and communication.

SystemVerilog Assertions Handbook Springer Nature

This book features papers presented at the International Conference on Advances in Information and Communication Technology (ICTA 2016), which was held in Thai Nguyen city, Vietnam, from December 1 to 13, 2016. The conference was jointly organized by Thai Nguyen University of Information and Communication Technology (ICTU), the Institute of Information Technology – Vietnam Academy of Science and Technology (IoIT), Feng Chia University, Taiwan (FCU), the Japan Advanced Institute of Science and Technology (JAIST) and the National Chung Cheng University, Taiwan (CCU) with the aim of bringing together researchers, academics, practitioners and students to not only share research results and practical applications but also to foster collaboration in information and communication technology research and education. The book includes the 66 best peer-reviewed papers, selected from the 150 submissions received.

ICDSMLA 2019 Springer

This book gathers a collection of papers by international experts presented at the International Conference on NextGen Electronic Technologies (ICNETS2-2017), which cover key developments in the field of electronics and communication engineering. ICNETS2 encompassed six symposia covering all aspects of the electronics and communications domains, including relevant nano/micro materials and devices. This book showcases the latest research in very-large-scale integration (VLSI) Design: Circuits, Systems and Applications, making it a valuable resource for all researchers, professionals, and students working in the core areas of electronics and their applications, especially in digital and analog VLSI circuits and systems.

Information and Communication Technology for Intelligent Systems (ICTIS 2017) - Volume 1 Springer Nature

This volume includes 74 papers presented at ICTIS 2017: Second International Conference on Information and Communication Technology for Intelligent Systems. The conference was held on 25th and 26th March 2017, in Ahmedabad, India and organized jointly by the Associated Chambers of Commerce and Industry of India (ASSOCHAM) Gujarat Chapter, the G R Foundation, the Association of Computer Machinery, Ahmedabad Chapter and supported by the Computer Society of India Division IV – Communication and Division V – Education and Research. The papers featured mainly focus on information and communications technology (ICT) for computation, algorithms and data analytics. The fundamentals of various data analytics and algorithms discussed are useful to researchers in the field.

Innovations in Cyber Physical Systems Springer Nature

The consumer electronics market has never been as awash with new consumer products as it has over the last couple of years. The devices that have emerged on the scene have led to major changes in the way consumers listen to music, access the Internet, communicate, watch videos, play games, take photos, operate their automobiles—even live. Digital electronics has led to these leaps in product development, enabling easier exchange of media, cheaper and more reliable products, and convenient services. This handbook is a much-needed, comprehensive engineering guide to the dynamic world of today's digital consumer electronics. It provides complete details on key enabling technologies, standards, delivery and reception systems, products, appliances and networking systems. Each chapter follows a logical progression from a general overview of each device, to market dynamics, to the core technologies and components that make up that particular product. The book thoroughly covers all of the key digital consumer product categories: digital TV, digital audio, mobile communications devices, gaming consoles, DVD players, PCs and peripherals, display devices, digital imaging devices, web terminals and pads, PDAs and other handhelds, screenphones/videophones, telematics devices, eBooks and readers, and many other current and future products. To receive a FREE daily newsletter on displays and consumer electronics, go to: <http://www.displaydaily.com/> -Surveys crucial engineering information for every digital consumer product category, including cell phones, digital TVs, digital cameras, PDAs and many more—the only reference available to do so -Has extremely broad market appeal to embedded systems professionals, including engineers, programmers, engineering managers, marketing and sales personnel—1,000,000+ potential readers -Helps engineers and managers make the correct design decisions based on real-world data

FPGAs: World Class Designs Elsevier

An important working resource for engineers and researchers involved in the design, development, and implementation of signal processing systems The last decade has seen a rapid expansion of the use of field programmable gate arrays (FPGAs) for a wide range of applications beyond traditional digital signal processing (DSP) systems. Written by a team of experts working at the leading edge of FPGA research and development, this second edition of FPGA-based Implementation of Signal Processing Systems has been extensively updated and revised to reflect the latest iterations of FPGA theory, applications, and technology. Written from a system-level perspective, it features expert discussions of contemporary methods and tools used in the design, optimization and implementation of DSP systems using programmable FPGA hardware. And it provides a wealth of practical insights—along with illustrative case studies and timely real-world examples—of critical concern to engineers working in the design and development of DSP systems for radio, telecommunications, audio-visual, and security applications, as well as bioinformatics, Big Data applications, and more. Inside you will find up-to-date coverage of: FPGA solutions for Big Data Applications, especially as they apply to huge data sets The use of ARM processors in FPGAs and the transfer of FPGAs towards heterogeneous computing platforms The evolution of High Level Synthesis tools—including new sections on Xilinx's HLS Vivado tool flow and Altera's OpenCL approach Developments in Graphical Processing Units (GPUs), which are rapidly replacing more traditional DSP systems FPGA-based Implementation of Signal Processing Systems, 2nd Edition is an indispensable guide for engineers and researchers involved in the design and development of both traditional and cutting-edge data

and signal processing systems. Senior-level electrical and computer engineering graduates studying signal processing or digital signal processing also will find this volume of great interest.

Inventive Systems and Control Springer

The book Cutting Edge Research in Technologies responds to the great interest for innovation in the large domain of technologies. It presents contributions by researchers with high expertise in the field, serving as a valuable reference for scientists, researchers, graduate students, and professionals. The book has five chapters covering the following subjects: information and communication technologies and services with the aim of improving the quality of life and the mobility of users, localisation technologies for deployment of mobile robots in dynamic environments, embedded video processing circuit design flow in the Python language, data communications and networking, and textile weaving.

Applications of Artificial Intelligence in Engineering Springer

Short compute times are crucial for timely diagnostics in biomedical applications, but lead to a high demand in computing for new and improved imaging techniques. In this book reconfigurable computing with FPGAs is discussed as an alternative to multi-core processing and graphics card accelerators. Instead of adjusting the application to the hardware, FPGAs allow the hardware to also be adjusted to the problem. Acceleration of Biomedical Image Processing with Dataflow on FPGAs covers the transformation of image processing algorithms towards a system of deep pipelines that can be executed with very high parallelism. The transformation process is discussed from initial design decisions to working implementations. Two example applications from stochastic localization microscopy and electron tomography illustrate the approach further. Topics discussed in the book include: • Reconfigurable hardware • Dataflow computing • Image processing • Application acceleration

Towards Ubiquitous Low-power Image Processing Platforms Springer

This book constitutes the refereed proceedings of the International Conference on Advances in Information Technology and Mobile Communication, AIM 2011, held at Nagpur, India, in April 2011. The 31 revised full papers presented together with 27 short papers and 34 poster papers were carefully reviewed and selected from 313 submissions. The papers cover all current issues in theory, practices, and applications of Information Technology, Computer and Mobile Communication Technology and related topics.

VLSI Design: Circuits, Systems and Applications IGI Global

This book collects the proceedings of the International Congress on Health Sciences and Medical Technologies (ICHSMT), held in Tlemcen, Algeria, from December 5 to 7, 2019. The proceedings present a forum for the latest projects and research in scientific and technological development with an emphasis on smart healthcare system design and future technologies. ICHSMT brings together researchers, students, and professionals from the healthcare, corporate, and academic sectors. It includes a far-reaching program supported by a variety of technical tracks that seek to promote medical technologies and innovation at a nationwide level.

Instinctive Computing John Wiley & Sons

This book constitutes the proceedings of the 16th International Symposium on Applied Reconfigurable Computing, ARC 2020, held in Toledo, Spain, in April 2020. The 18 full papers and 11 poster presentations presented in this volume were carefully reviewed and selected from 40 submissions. The papers are organized in the following topical sections: design methods & tools; design space exploration & estimation techniques; high-level synthesis; architectures; applications.

Recent Trends in Signal and Image Processing Springer

Dr Donald Bailey starts with introductory material considering the problem of embedded image processing, and how some of the issues may be solved using parallel hardware solutions. Field programmable gate arrays (FPGAs) are introduced as a technology that provides flexible, fine-grained hardware that can readily exploit parallelism within many image processing algorithms. A brief review of FPGA programming languages provides the link between a software mindset normally associated with image processing algorithms, and the hardware mindset required for efficient utilization of a parallel hardware design. The design process for implementing an image processing algorithm on an FPGA is compared with that for a conventional software implementation, with the key differences highlighted. Particular attention is given to the techniques for mapping an algorithm onto an FPGA implementation, considering timing, memory bandwidth and resource constraints, and efficient hardware computational techniques. Extensive coverage is given of a range of low and intermediate level image processing operations, discussing efficient implementations and how these may vary according to the application. The techniques are illustrated with several example applications or case studies from projects or applications he has been involved with. Issues such as interfacing between the FPGA and peripheral devices are covered briefly, as is designing the system in such a way that it can be more readily debugged and tuned. Provides a bridge between algorithms and hardware Demonstrates how to avoid many of the potential pitfalls Offers practical recommendations and solutions Illustrates several real-world applications and case studies Allows those with software backgrounds to understand efficient hardware implementation Design for Embedded Image Processing on FPGAs is ideal for researchers and engineers in the vision or image processing industry, who are looking at smart sensors, machine vision, and robotic vision, as well as FPGA developers and application engineers. The book can also be used by graduate students studying imaging systems, computer engineering, digital design, circuit design, or computer science. It can also be used as supplementary text for courses in advanced digital design, algorithm and hardware implementation, and digital signal processing and applications. Companion website for the book: www.wiley.com/go/bailey/fpga

FPGA-based Implementation of Signal Processing Systems John Wiley & Sons

The volume contains 69 high quality papers presented at International Conference on Computational Intelligence and Informatics (ICCI 2017). The conference was held during 25-27, September, 2017 at Department of Computer Science and Engineering, JNTUHCEH, Hyderabad, Telangana, India. This volume contains papers mainly focused on data mining, wireless sensor networks, parallel computing, image processing, network security, MANETS, natural language processing, and internet of things.

Computational Bioengineering and Bioinformatics Springer

This book presents selected papers from the 5th International Conference on Inventive Systems and Control (ICISC 2021), held on 7-8 January 2021 at JCT College of Engineering and Technology, Coimbatore, India. The book includes an analysis of the class of intelligent systems and control techniques that utilises various artificial intelligence technologies, where there are no mathematical

models and systems available to make them remain controlled. Inspired by various existing intelligent techniques, the primary goal is to present the emerging innovative models to tackle the challenges faced by the existing computing and communication technologies. The proceedings of ICISC 2021 aim at presenting the state-of-the-art research developments, trends, and solutions for the challenges faced by the intelligent systems and control community with the real-world applications. The included research articles feature the novel and unpublished research works on intelligent system representation and control.

Advances in Multidisciplinary Medical Technologies – Engineering, Modeling and Findings Springer

The emergence of near-infrared dyes for fluorescence imaging has had a tremendous impact in the medical field. In particular, indocyanin green (ICG) has been widely used for assessing tumor margins during intraoperative procedures. Typically, the dye is intravenously injected into the patient, and after 24 hours the dye is removed from the patient's body, except where binding between the dye and tumor cells has occurred. This selective binding between ICG and cancerous tissue allows for easy and accurate detection of cancer margins as well as detection of metastasis throughout the patient's body. In order to detect the binding sites, a near infrared light source at 780nm is used to excite the dye molecules, and emission is observed at 800nm. To take advantage of fluorescent imaging during intraoperative procedures, we have developed a goggle system equipped for real-time imaging in both visible and near infrared spectra. The goggle system has to be light, compact and able to perform real-time image processing to assist the physician for easy detection of tumor margins. To this end, I have developed Verilog code for a Spartan III FPGA that performs the following: 1) Real-time acquisition of both visible and near infrared spectrum images from a pair of CMOS imaging detectors; 2) Real-time image processing for both near infrared and color images in order to enhance the captured information; and 3) Real-time display of fused visible-near infrared images in high definition (HDMI) format on a goggle device. The imaging device has been successfully used for intraoperative procedures during tumor resection in animal models.

Bioinspired Applications in Artificial and Natural Computation IGI Global

This book constitutes the proceedings of the 4th International Conference on Network Security and Applications held in Chennai, India, in July 2011. The 63 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers address all technical and practical

aspects of security and its applications for wired and wireless networks and are organized in topical sections on network security and applications, ad hoc, sensor and ubiquitous computing, as well as peer-to-peer networks and trust management.

Third International Symposium on Multispectral Image Processing Springer

This book gathers selected high-impact articles from the 1st International Conference on Data Science, Machine Learning & Applications 2019. It highlights the latest developments in the areas of Artificial Intelligence, Machine Learning, Soft Computing, Human-Computer Interaction and various data science & machine learning applications. It brings together scientists and researchers from different universities and industries around the world to showcase a broad range of perspectives, practices and technical expertise.

The Digital Consumer Technology Handbook Springer Nature

"This 10-volume compilation of authoritative, research-based articles contributed by thousands of researchers and experts from all over the world emphasized modern issues and the presentation of potential opportunities, prospective solutions, and future directions in the field of information science and technology"--Provided by publisher.

Architectures for Computer Vision Springer Nature

This book presents best selected papers presented at the First Global Conference on Artificial Intelligence and Applications (GCAIA 2020), organized by the University of Engineering & Management, Jaipur, India, during 8-10 September 2020. The proceeding will be targeting the current research works in the domain of intelligent systems and artificial intelligence.

Encyclopedia of Information Science and Technology, Third Edition Society of Photo Optical

The two-volume set LNCS 5601 and LNCS 5602 constitutes the refereed proceedings of the Third International Work-Conference on the Interplay between Natural and Artificial Computation, IWINAC 2009, held in Santiago de Compostela, Spain, in June 2009. The 108 revised papers presented are thematically divided into two volumes. The first volume includes papers relating the most recent collaborations with Professor Mira and contributions mainly related with theoretical, conceptual and methodological aspects linking AI and knowledge engineering with neurophysiology, clinics and cognition. The second volume contains all the contributions connected with biologically inspired methods and techniques for solving AI and knowledge engineering problems in different application domains.