

**PROCEEDINGS OF
THE 2013 INTERNATIONAL CONFERENCE ON
ENGINEERING OF RECONFIGURABLE SYSTEMS &
ALGORITHMS**

ERSA 2013

Editor

Toomas P. Plaks



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ERSA'13

ENGINEERING OF RECONFIGURABLE SYSTEMS AND ALGORITHMS

The international conference on Engineering of Reconfigurable Systems and Algorithms (ERSA) was founded in 2001 and, since then, has been held each year in Las Vegas.

ERSA explores emerging trends and novel ideas in the area of parallel, reconfigurable, heterogeneous, high-performance computing architecture, design methods and applications. ERSA is promoting multidisciplinary research and new visionary approaches including bio-inspired architectures, computational biology, physics etc.

Since 2012, ERSA brings a new emphasis on the commercial and industrial challenges in preparing commercial applications for systems using reconfigurable, heterogeneous technology.

The proceedings of the ERSA Conference have been approved, by the evaluation board of science citation index (SCI) databases, for indexing, integrating, and inclusion into Elsevier indexing databases (Elsevier indexing databases include, among others: Scopus, SCI Compendex, Engineering Village, EMBASE, and others)

ERSA conference focuses on different approaches in engineering of reconfigurable systems: in hardware design and in implementing of algorithms; including theory, architecture, algorithms, design systems and applications that demonstrate the benefits of reconfigurable computing. ERSA conference solicits papers from broad area, from all aspects of reconfigurable heterogeneous computing, from simple applications on programmable logic to complex, intelligent, high-performance, embedded systems implemented as multicore systems and heterogeneous parallel processing systems. All these complex systems involve reconfigurability on software and/or hardware level.

The range of topics covers theory, architecture, algorithms, design systems, and applications that demonstrate the benefits of reconfigurable computing:

- Theory - Synthesis, Mapping, Parallelization, Partitioning...
- Software – CAD Systems and Languages, Compilers, Operating Systems...
- Hardware - Adaptive and Dynamic Hardware, Heterogeneous and Reconfigurable Architectures...
- Applications – HPC, Mobile Computing, Automotive Industry, Space and Military, Smart Cameras...

ERSA conference brings together leading scientists and researchers from academia and industry. ERSA is aiming to provide a forum where new research results can be quickly published and presented to research community, where people can discuss and share the latest ideas without a long publishing time. Only one and half months are required from submitting a paper to presenting it at the conference when following late CFP option. Late papers, which are not ready for conference time publication, are published in post-conference proceedings, in the official ERSA proceedings. All conference proceedings/books are considered for inclusion in major database indexes.

After the conference, best ERSA papers are published in special issues of reputable international journals: in The Journal of Supercomputing (Springer), IEEE TVLSI, ACM Transactions on Embedded Computing Systems.

This year, to support young and talented, ERSA launched the contest for “ERSA - NVIDIA Best Young Entrepreneur Award”. The Award is devoted for entrepreneurs developing tools, advanced technologies and opportunities for supporting applications, both academic and commercial, across broad

area of high-performance, embedded systems implemented as multicore systems and reconfigurable heterogeneous parallel processing systems.

I hope that the ERSA conference, covering different aspects of reconfiguration techniques and heterogeneous computing systems, will raise your awareness about the scope of reconfigurable (or adaptive) heterogeneous computing.

I would like to thank the authors for submitting their papers to ERSA'13 and for preparing the final versions of their papers for due date. I hope you all will have successful and enjoyable meeting in Las Vegas this year and I hope to meet you again in next years. I would like to extend my deepest gratitude for the efforts extended by the ERSA'13 Program Committee and to all external reviewers for their careful reading of all of the submitted papers.

Last but not least, I would like to thank the organizing team of The 2013 World Congress in Computer Science, Computer Engineering, and Applied Computing, and, especially, the General Chair Prof. Hamid Arabnia, for the continuous support and help in organizing the ERSA conference.

Toomas P. Plaks
ERSA Chairman
London
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Contents

SESSION: COMMUNICATION TECHNIQUES IN RECONFIGURABLE SYSTEMS

Hardware Parallel Decoder of Compressed HTTP Traffic on Service-oriented Router 3

Daigo Hogawa, Shin-ichi Ishida, Hiroaki Nishi

Simplifying Microblaze to Hermes NoC Communication through Generic Wrapper 10

Andres Benavides A., John Byron Buitrago P., Johnny Aguirre M.

An Area-Efficient Asynchronous FPGA Architecture for Handshake-Component-Based Design 15

Yoshiya Komatsu, Masanori Hariyama, Michitaka Kameyama

Implementing Alamouti's 2x1 Transmit Diversity on Software Defined Radios 19

Anaam Ansari, Robert Morelos Zaragoza

SESSION: DEVELOPING RECONFIGURABLE HETEROGENEOUS SYSTEMS

Heuristically Driven Task Agglomeration in Limited Resource Partially-Reconfigurable Systems 29

David Austin, Earl Wells

An Automatic Design and Implementation Framework for Reconfigurable Logic IP Core 36

Qian Zhao, Motoki Amagasaki, Masahiro Iida, Morihiko Kuga, Toshinori Sueyoshi

Types, Signatures, Interfaces, and Components in NOOP: The Core of an Adaptive Run-time 43

Anders Andersen

Heterogeneous Multicore Platform with Accelerator Templates and Its Implementation on an FPGA with Hard-core CPUs 47

Yasuhiro Takei, Hasitha Muthumala Waidyasooriya, Masanori Hariyama, Michitaka Kameyama

On-demand Fault Scrubbing Using Adaptive Modular Redundancy 51

Naveed Imran, Rizwan Ashraf, Ronald DeMara

Reducing Floating-Point Error Based on Residue-Preservation and Its Evaluation on an FPGA 55

Hasitha Muthumala Waidyasooriya, Hirokazu Takahashi, Yasuhiro Takei, Masanori Hariyama, Michitaka Kameyama

SESSION: BEST YOUNG ENTREPRENEUR; STUDENT RESEARCH CATEGORY

A Novel Parallel Computing Approach for Motion Estimation Based on Particle Swarm Optimization **61**

Manal K. Jalloul

SESSION: INVITED LECTURE

Addressing the Challenges of Hardware Assurance in Reconfigurable Systems **71**

William H. Robinson, Trey Reece, Nihaar N. Mahatme