2023 International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES 2023)

Hamburg, Germany
18-20 September 2023

IEEE

IEEE Catalog Number: CFP23CCS-POD
ISBN: 979-8-3503-2514-0

Copyright © 2023, Association for Computing Machinery (ACM)
All Rights Reserved

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP23CCS-POD
ISBN (Print-On-Demand):	979-8-3503-2514-0
ISBN (Online):	979-8-4007-0290-7
ISSN:	2381-1560

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

2023 International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES)

CASES 2023

Table of Contents

Message from the CASES 2023 Program Chairs ..... **vii**
CASES 2023 Program Committee ..... **ix**

2023 International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES)

Tutorial: Designing an Edge Inferencing Accelerator with High-Level Synthesis 1
Russell Klein Klein (Siemens)

Work-in-Process: Error-Compensation-Based Energy-Efficient MAC Unit for CNNs 3
Xingyu Xu (Southeast University), Qingwen Wei (Southeast University), Yang Zhang (Southeast University), Hao Cai (Southeast University), and Bo Liu (Southeast University)

Work-in-Progress: QRCNN: Scalable CNNs 5
Nagaraju Dara (Indian Institute of Technology Madras, India) and Nitin Chandrachoodan (Indian Institute of Technology Madras, India)

Work-in-Progress: Towards Evaluating CNNs Against Integrity Attacks on Multi-tenant Computation 7
Xiangru Chen (University of Florida, USA), Dipal Halder (University of Florida, USA), Kazi Mejbaul Islam (University of Florida, USA), and Sandip Ray (University of Florida, USA)

WIP: Automatic DNN Deployment on Heterogeneous Platforms: the GAP9 Case Study 9
Luka Macan (University of Bologna, Italy), Alessio Burrello (Polytechnic University of Turin, Italy), Luca Benini (ETH Zürich, Switzerland), and Francesco Conti (University of Bologna, Italy)

Special Session - Non-Volatile Memories: Challenges and Opportunities for Embedded System Architectures with Focus on Machine Learning Applications 11
Jörg Henkel (Karlsruhe Institute of Technology (KIT), Germany), Lokesh Siddhu (Karlsruhe Institute of Technology (KIT), Germany), Lars Bauer (Karlsruhe Institute of Technology (KIT), Germany), Jürgen Teich (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), Stefan Wildermann (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany), Mehdi Tahoori (Karlsruhe Institute of Technology (KIT), Germany), Mahta Mayahinia (Karlsruhe Institute of Technology (KIT), Germany), Mahta Mayahinia (Karlsruhe Institute of Technology (KIT), Germany), Jeronimo Castrillon (TU Dresden, Germany), Asif Ali Khan (TU Dresden, Germany), Hamid Farzaneh (TU Dresden, Germany), João Paulo C. de Lima (TU Dresden, Germany), Jian-Jia Chen (TU Dortmund University, Germany), Christian Hakert (TU Dortmund University, Germany), Kuan-Hsun Chen (University of Twente, the Netherlands), Chia-Lin Yang (National Taiwan University, Taiwan), and Hsiang-Yun Cheng (Academia Sinica, Taiwan)

Author Index **21**