DATE Best Paper Awards

Each year the Design, Automation and Test in Europe Conference presents awards to the authors of the best papers. The selection is performed by the award committee composed of the Track Chairs Ian O'Connor , Theocharis Theocharides, Ilia Polian and Valeria Bertacco and the following members: Lorena Anghel, David Atienza, Koen Bertels, Christos-Savvas Bouganis , Luca Carloni, Stefano Di Carlo, Jose Flich, Pierre-Emmanuel Gaillardon , Tsung-Yi Ho, Artur Jutman, Huichu Liu, Jan Madsen, Maria K. Michael, Francesco Regazzoni, Johanna Sepulveda, Muhammad Shafique, Haralampos Stratigopoulos, Lionel Torres, Jiang Xu, Chengmo Yang.

The **DATE 2021** best papers are:

D Track

Leveraging Processor Modeling and Verification for General Hardware Modules

Yue Xing, Huaxi Lu, Aarti Gupta, Sharad Malik
Princeton University

A Track

A GPU-accelerated Deep Stereo-LiDAR Fusion for Real-time High-precision Dense Depth Sensing

Haitao Meng, Chonghao Zho, Jianfeng Gu, Gang Chen
Sun Yat-sen University

T Track

Microarchitectural Timing Channels and their Prevention on an Open-Source 64-bit RISC-V Core

Nils Wistoff[1], Moritz Schneider[1], Frank Gurkaynak[1], Luca Benini[2], Gernot Heiser[3]
1 ETH Zurich, 2 Università di Bologna and ETH Zurich, 3 UNSW and Data61, CSIRO

E Track

Adaptive Design of Real-Time Control Systems subject to Sporadic Overruns

Paolo Pazzaglia[1], Anne Hamann[2], Dirk Ziegenbein[2], Martina Maggio[3]
1 Universität des Saarlandes, 2 Robert Bosch GmbH, 3 Lund University

Best Paper Award Nominations

D Track

Correlated Multi-objective Multi-fidelity Optimization for HLS Directives Design
Qi Sun[1], Tinghuan Chen[1], Siting Liu[1], Jin Miao[2], Jianli Chen[3], Hao Yu[4], Bei Yu[1]
1 The Chinese University of Hong Kong, 2 Cadence Design Systems, 3 Fudan University,
4 Southern University of Science and Technology

Leveraging Processor Modeling and Verification for General Hardware Modules
Yue Xing, Huaxi Lu, Aarti Gupta, Sharad Malik
Princeton University

3D Heterogeneous ReRAM Architecture for Training Graph Neural Networks
Aqeeb Iqbal Arkal[1], Biresh Kumar Joardar[1], Jana Doppa[1],
Partha Pratim Pande[1], Krishnendu Chakrabarty[2]
1 Washington State University, 2 Duke University

LSP: Collective Cross-Page Prefetching for NVM
Haiyang Pan, Yuhang Liu, Tianyue Lu, Mingyu Chen
Chinese Academy of Sciences

Efficient Resource Management of Clustered Multi-Processor Systems
Through Formal Property Exploration
Ourania Spantidi1, Iraklis Anagnostopoulos1, Georgios Fainekos2
1 Southern Illinois University Carbondale, 2 Arizona State University

Margin-Maximization in Binarized Neural Networks for Optimizing Bit Error Tolerance
Sebastian Buschjäger, Jian-Jia Chen, Kuan-Hsun Chen, Mario Günzel, Christian Hakert,
Katharina Morik, Rodion Novkin, Lukas Pfahler, Mikail Yayla
Technical University of Dortmund

FPGA Architectures for Approximate Dense SLAM Computing
Maria-Rafaela Gkeka, Alexandros Patras, Christos D. Antonopoulos,
Spyros Lalis, Nikolaos Bellas
University of Thessaly

Technology Lookup Table based Default Timing Assertions
for Hierarchical Timing Closure
Ravi Ledalla, Chaobo Li, Debjit Sinha, Adil Bhanji,
Gregory Schaeffer, Hemlata Gupta, Jennifer Basile
IBM Corporation

COMPACT: Flow-Based Computing on Nanoscale Crossbars
with Minimal Semiperimeter
Sven Thijssen[1], Sumit Kumar Jha[2], Rickard Ewetz[1]
1 University of Central Florida, 2 University of Texas at San Antonio

In-Memory Nearest Neighbor Search with FeFET Multi-Bit Content-Addressable Memories
Arman Kazemi[1], Mohammad Mehdi Sharifi[1], Ann Franchesca Laguna[1], Franz Mueller[2],
Ramin Rajaei[1], Ricardo Olivo[2], Thomas Kaempfe[2], Michael Niemier[1], X. Sharon Hu[1]
1 University of Notre Dame, 2 Fraunhofer IPMS-CNT

A Track

Origin: Enabling On-Device Intelligence for Human Activity Recognition
Using Energy Harvesting Wireless Sensor Networks
Cyan Subhra Mishra, John (Jack) Sampson, Mahmut Kandemir, Vijaykrishnan Narayanan
The Pennsylvania State University

A GPU-accelerated Deep Stereo-LiDAR Fusion for
Real-time High-precision Dense Depth Sensing
Haitao Meng, Chonghao Zho, Jianfeng Gu, Gang Chen
Sun Yat-sen University

Exploiting Secrets by Leveraging Dynamic Cache Partitioning of Last Level Cache
Anurag Agarwal, Jaspinder Kaur, Shirshendu Das
Indian Institute of Technology Ropar

As Accurate as Needed, as Efficient as Possible:
Approximations in DD-based Quantum Circuit Simulation
Stefan Hillmich[1], Richard Kueng[1], Igor L. Markov[2], Robert Willie[1]
1 Johannes Kepler University Linz, 2 University of Michigan

T Track

Characterization and Fault Modeling of Intermediate State Defect in STT-MRAMs
Lizhou Wu[1], Siddharth Rao[2], Mottaqiallah Taouil[1], Erik Jan Marinissen[2],
Gouri Sankar Kar[2], Said Hamdioui[1]
1 Delft University of Technology, 2 IMEC

Device- and Temperature Dependency of Systematic Fault Injection Results
in Artix-7 and iCE40 FPGAs
Christian Fibich[1], Martin Horauer[1], Roman Obermaisser[2]
1 University of Applied Sciences Technikum Wien, 2 University of Siegen

DNN-Life: An Energy-Efficient Aging Mitigation Framework for Improving the Lifetime of On-Chip Weight Memories in Deep Neural Network Hardware Architectures

Muhammad Abdullah Hanif[1], Muhammad Shafique[2]
1 Vienna University of Technology, 2 New York University Abu Dhabi

Digital test of ZigBee transmitters: Validation in industrial test environment

Thibault Vayssade[1], Florence Azais[1], Laurent Latorre[1], François Lefevre[2]
1 Université de Montpellier, 2 NXP Semiconductors

Making Obfuscated PUFs Secure Against Power Side-Channel Based Modeling Attacks

Trevor Kroeger[1], Wei Cheng[2], Sylvain Guilley[2], Jean-Luc Danger[2], Naghmeh Karimi[1]
1 University of Maryland, 2 Institut Polytechnique de Paris

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1 ETH Zurich, 2 Università di Bologna and ETH Zurich, 3 UNSW and Data61, CSIRO

E Track

TinyADC: Peripheral Circuit-aware Weight Pruning Framework for Mixed-signal DNN Accelerators

Geng Yuan[1], Payman Benham[2], Yuxuan Cai[1], Ali Shafiee[3], Jingyan Fu[4], Zhiheng Liao[4], Zhengang Li[1], Xiaolong Ma[1], Jieren Deng[5], Jinhui Wang[6], Mahdi Bojnordi[2], Yanzhi Wang[1], Caiwen Ding[5]
1 Northeastern University, 2 University of Utah, 3 Samsung, 4 North Dakota State University, 5 University of Connecticut, 6 University of South Alabama

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