



EMBEDDED SYSTEMS WEEK

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TEST OF TIME AWARDS

CASES

Predictable Programming on a Precision Timed Architecture

Ben Lickly (UC Berkeley), Isaac Liu (UC Berkeley), Sungjun Kim (Columbia University), Hiren D. Patel (UC Berkeley), Stephen A. Edwards (Columbia University), Edward A. Lee (UC Berkeley)

CODES+ISSS

Predator: A Predictable SDRAM Memory Controller

Benny Akesson (Eindhoven University of Technology), Kees Goossens (NXP Semiconductors Research & Delft University of Technology) and Markus Ringhofer (Graz University of Technology)

EMSOFT

Scheduling Multiple Independent Hard-Real-Time Jobs on a Heterogeneous Multiprocessor

Orlando Moreira (NXP Semiconductors), Frederico Valente (University of Aveiro) and Marco Bekooij (NXP Semiconductors)

BEST PAPER AWARDS

CASES

ZPP: A Dynamic Technique to Eliminate Cache Pollution in NoC based MPSoCs

Dipika Deb and John Jose (Indian Institute of Technology, Guwahati)

CODES+ISSS

Florets for Chiplets: Data Flow-aware High-Performance and Energy-efficient Network-on-Interposer for CNN Inference Tasks

Harsh Sharma (Washington State University – Pullman), Lukas Pfromm (University of Wisconsin Madison, Madison), Rasit Onur Topaloglu (Topallabs), Jana Doppa (Washington State University – Pullman), Umit Ogras (University of Wisconsin Madison, Madison), Ananth Kalyanaraman and Partha Pratim Pande (Washington State University – Pullman)

EMSOFT

Equation-Directed Axiomatization of Lustre Semantics to Enable Optimized Code Validation

Lélio Brun (NII Tokyo Japan), Christophe Garion (ISAE Supaéro Toulouse France), Pierre-loic Garoche (ENAC Toulouse France) and Xavier Thirioux (ISAE Supaéro Toulouse France)

BEST PAPER CANDIDATES

CASES

ZPP: A Dynamic Technique to Eliminate Cache Pollution in NoC based MPSoCs

Dipika Deb and John Jose (Indian Institute of Technology, Guwahati)

Let Coarse-Grained Resources Be Shared: Mapping Entire Neural Networks on FPGAs

Tzung-Han Juang (McGill University); Christof Schlaak (The University of Edinburgh); and Christophe Dubach (McGill University & Mila)

Protection Window Based Security-Aware Scheduling against Schedule-Based Attacks

Jiankang Ren, Chunxiao Liu, Chi Lin, Ran Bi, Simeng Li, Zheng Wang, Yicheng Qian, Zhichao Zhao and Guozhen Tan (Dalian University of Technology)

CODES+ISSS

Overflow-free compute memories for edge AI acceleration

Flavio Ponzina, Marco Rios, Alexandre Levisse, Giovanni Ansaloni and David Atienza (Ecole Polytechnique Fédérale de Lausanne (EPFL))

Florets for Chiplets: Data Flow-aware High-Performance and Energy-efficient Network-on-Interposer for CNN Inference Tasks

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Keep in Balance: Runtime-reconfigurable Intermittent Deep Inference

Chih-Hsuan Yen (National Taiwan University), Hashan Mendis (Academia Sinica), Tei-Wei Kuo (National Taiwan University) and Pi-Cheng Hsiu (Academia Sinica)

EMSOFT

Equation-Directed Axiomatization of Lustre Semantics to Enable Optimized Code Validation

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Verified Compilation of Synchronous Dataflow with State Machines

Timothy Bourke, Basile Pesin and Marc Pouzet (INRIA/ENS France)

Rectifying Skewed Kernel Page Reclamation in Mobile Devices for Improving User-Perceivable Latency

Yi-Quan Chou, Lin-Wei Shen and Li-Pin Chang (National Yang Ming Chiao Tung University Hsinchu Taiwan)

OUTSTANDING REVIEWERS AWARD

CASES

Jeronimo Castrillon (TU Dresden, DE)

Krishna Nandivada (IIT Madras, IN)

CODES+ISSS

Francesco Regazzoni (University of Amsterdam, NL and USI Lugano, CH)

Ryan Kim (Colorado State University, US)

EMSOFT

Taylor Johnson (Vanderbilt University, US)

Jean-Luc Scharbarg (IRIT, FR)

COMPETITIONS

ACM SIGBED Student Research Competition (SRC) Awards

Undergraduate Category

Champion: Valen Yamamoto, UC Irvine

Graduate Category

Champion: Artem Klashtorny, University of Waterloo

First Runner-up: Zain Ul Abideen, Tallinn University of Technology

Second Runners-up: Dina Hussein, Washington State University; Xiaofan Yu, UCSD

Tiny and Fair ML Design Competition

Segmentation Track: Low-Power Computer Vision Challenge

First Place: ModelTC Team (Tsinghua University, CN, Max Planck Institute for Informatics, DE, and ModelTC, CN)
Yiru Wang, Xin Jin, Zhiwei Dong, Yifan Pu, Yongqiang Yao, Bo Li, Ruihao Gong, Haoran Wang, Xianglong Liu, Gao Huang, Wei Wu

Best Accuracy: AidgetRock Team (Midea Group, CN)
Zifu Wan, Xinwang Chen, Ning Liu, Ziyi Zhang, Dongping Liu Ruijie Shan, Zhengping Che, Fachao Zhang, Xiaofeng Mou Jian Tang

Best Execution Time: ENOT Team (ENOT.AI, LU)
Alexander Goncharenko, Max Chuprov, Andrey Sherbin Sergey Alyamkin, Ivan Malofeev

Classification Track: Fair and Intelligent Embedded System Challenge

First Place: Rutgers Efficient AI (University of Rochester, USA)
Cheng Yang, Yang Sui, Jinqi Xiao, Junyi Zhou, Ge Wang, Bo Yuan

Second Place: Sustainable Computing Laboratory (University of Notre Dame, University of Pittsburgh, Dos Pueblos High School, USA)
Dewen Zeng, Zhenge Jia, Yuanbo Guo, Qingpeng Kong, Yawen Wu, Joy Xie, Jingtong Hu, Yiyu Shi

Third Place: Intelligent and Robotic Systems (Sun Yat-sen University, CN)
Jiantao Tan, Yi Zheng, Ruixuan Wang, Gang Chen

Embedded System Software Competition (ESSC)

ESP: An Open-Source Platform for the Design and Programming of Heterogeneous SoCs

Joseph Zuckerman, Maico Cassel dos Santos, Kuan-Lin Chiu, Guy Eichler, Biruk Seyoum, Gabriele Tombesi and Luca P. Carloni

HybroGen : A compiler for innovative interleaved execution and compilation scenarios

Henri-Pierre Charles, Maha Kooli, Bricout Thaddée and Lacour Benjamin

ZoneTrace: A Zone Monitoring Tool for F2FS on ZNS SSDs

Ping-Xiang Chen, Dongjoo Seo, Changhoon Sung, Jongheum Park, Minchul Lee and Nikil Dutt