



Embedded Systems Week

www.esweek.org

October 10-15, 2021

Virtual Conference

CASES 2021

CASES

Call for Papers

International Conference on Compilers, Architectures, and Synthesis for Embedded Systems
October 10 – October 15, 2021, *Virtual Conference*

CASES is a premier forum where researchers, developers and practitioners exchange information on the latest advances in compilers and architectures for high-performance, low-power, and domain-specific embedded systems. The conference has a long tradition of showcasing leading edge research in embedded architectures for processor, memory, interconnect, and storage, as well as related compiler techniques targeting performance, power, security, reliability, predictability issues for both traditional and emerging application domains. We also invite innovative papers addressing design, synthesis & optimization challenges in heterogeneous, accelerator-rich architectures.

Compilers for Embedded Systems: Compilation for power and performance; Compiler support for CPU, GPU, reconfigurable computing, heterogeneous and domain-specific multi-core SoC; Compilation for memory, storage, and on-chip communications.

Processor Architectures: Embedded and mobile processor micro-architecture, Multi- and many-core processors, GPU architectures, Reconfigurable computing including FPGAs and CGRAs, Application-Specific processor design, 3D-stacked architectures; Power- and energy-efficient architectures.

Memory and Storage: Memory system architecture; Non-volatile and other emerging memory technologies; Scratchpad memory, caches and compiler-controlled memories; storage organization including flash storage.

On-chip communication and I/O: Networks-on-chip architectures and design methodologies; on-chip communication synthesis, analysis, and optimization; I/O management in embedded systems.

Accelerators: Synthesis, optimization, and design-space exploration of high-performance, low-power accelerators; Novel design paradigms and compilers for accelerators including approximate computing, machine learning and big-data analytics.

Security, Reliability, and Predictability: Secure architectures, hardware security, and compilation for software security; Architecture and compiler techniques for reliability and aging; Modeling, design, analysis, and optimization for timing and predictability; Validation, verification, testing & debugging of embedded software.

AI Hardware and ML Applications: Architectures, accelerators, and compilers for artificial intelligence hardware; Applications of machine learning algorithm and techniques to embedded systems; Neuro-morphic & cognitive computing, data analytics.

Emerging Applications: Biologically inspired computing; Flexible, stretchable, and flexible hybrid electronics (FHE); Augmented and virtual reality; Bioinformatics, and emerging topics on embedded systems.

Journal-Track Submissions

Abstracts: April 2, 2021

Full Papers: April 9, 2021 (firm)

Work-in-Progress Submissions

June 4, 2021 (firm)

Notification of Acceptance

July 5, 2021 (both tracks)

Journal-Integrated Publication Model: CASES 2021 has a dual publication model with two tracks. Journal track papers will be published in the ACM Transactions on Embedded Computing Systems (TECS) and Work-in-Progress track papers will be published in the ESWEEK Proceedings. See details at <http://www.esweek.org/author-information>

ESWeek General Chairs:

Andreas Gerstlauer, University of Texas at Austin, USA
Aviral Shrivastava, Arizona State University, USA

CASES Program Chairs:

Umit Y. Ogras, University of Wisconsin-Madison, USA
Preeti Ranjan Panda, IIT Delhi, IN