

ICCD 2021 Call for Papers

The 39th IEEE International Conference on Computer Design

October 24 – 27, 2021, Virtual Conference
<https://www.iccd-conf.com>

Important Dates:

Full Papers: June 11, 2021 (11:59pm AOE)

Notification: August 20, 2021

ICCD encompasses a wide range of topics in the research, design, and implementation of computer systems and their components. ICCD's multi-disciplinary emphasis provides an ideal environment for developers and researchers to discuss practical and theoretical work covering systems and applications, computer architecture, verification and test, design tools and methodologies, circuit design, and technology. Manuscripts describing original work on one of the following tracks are welcome.

Track 1. Computer Systems: System architecture and software (compiler, programming language/model, firmware, OS, hypervisor, runtime) design and co-design for embedded/real-time systems; System support and compilers for multi/many cores, co-processors, and accelerators; System support for security, reliability, and energy efficiency and proportionality; Virtual memory; System support for emerging technologies, including NVM, quantum, neuromorphic, bio-inspired computing, machine learning and artificial intelligence applications; Specialized OS, runtime, and storage systems for data center and cloud/edge computing, high-performance computing (HPC), exascale system, and serverless computing.

*Track Chairs: Greg Byrd (North Carolina State University)
Devesh Tiwari (Northeastern University)*

Track 2. Processor Architecture: Microarchitecture design techniques for single-threaded and multi/many-core processors, such as instruction-level parallelism, pipelining, caches, branch prediction, multithreading, and networks-on-chip; Techniques for low-power, secure, and reliable processor architectures; Hardware acceleration for emerging applications including NVM, quantum, neuromorphic, bio-inspired, machine learning (ML) and artificial intelligence (AI); Hardware support for processor virtualization; Real-life design challenges: case studies, tradeoffs, retrospectives.

*Track Chairs: Alaa Alameldeen (Simon Fraser University)
Eun Jung Kim (Texas A&M University)*

Track 3. Test, Verification and Security: Design error debug and diagnosis; Fault modeling; Fault simulation and ATPG; Analog/RF testing; Statistical test methods; Large volume yield analysis and learning; Fault tolerance; DFT and BIST; Functional, transaction-level, RTL, and gate-level modeling and verification of hardware designs; Equivalence checking, property checking, and theorem proving; Constrained-random test gen-

eration; High-level design and SoC validation; Hardware security primitives and methodologies; Side-channel analysis, attacks and mitigations for processors and accelerators; Interaction between test, security and trust.

*Track Chairs: Amro Awad (North Carolina State University)
Jeyavijayan Rajendran (Texas A&M University)*

Track 4. Electronic Design Automation: System-level design and synthesis; High-level, logic and physical synthesis; Analysis and optimization of timing, power, variability/yield, temperature, and noise; Physical design, including partitioning, floor-planning, placement, and routing; Clock-tree synthesis; Verification methods at different levels of the EDA flow; Tools for multiple-clock domains, asynchronous, and mixed-timing methodologies; CAD support for accelerators, FPGAs, SoCs, ASICs, NoC, and general purpose processors; CAD for manufacturing, test, verification, and security; Tools and design methods for emerging technologies (photonics, MEMS, spintronics, nano, quantum); interaction of EDA and AI/ML.

*Track Chairs: Priyank Kalla (University of Utah)
Sabya Das (Synopsys)*

Track 5. Logic and Circuit Design: Circuit design techniques for digital, memory, analog and mixed-signal systems; Circuit design techniques for high performance and low power; Circuit design techniques for robustness under process variability, electromigration, and radiation; Design techniques for emerging and maturing technologies (MEMS, nano-spintronics, quantum, flexible electronics, multi-gate devices, in-memory computing); Asynchronous circuit design; Signal-processing, graphic-processor, and datapath circuits.

*Track Chairs: Himanshu Thapliyal (University of Kentucky)
Syed Alam (Everspin Technologies)*

The full version of the paper should be a PDF file following the submission guidelines that is made available at the conference website. See the ICCD 2021 website at <http://www.iccd-conf.com> for additional information.

General Chairs: Maciej Ciesielski (University of Massachusetts Amherst) and Resit Sendag (University of Rhode Island)

Program Chairs: Guru Prasad Venkataramani (George Washington University) and Rathish Jayabharathi (Intel)

Special Sessions Chairs: Cunxi Yu (University of Utah) and Esha Choukse (Microsoft)

Proceedings Chairs: Fan Yao (University of Central Florida) and Wenjie Xiong (Facebook)

Registration Chairs: Bingzhe Li (Oklahoma State University) and Lei Yang (University of New Mexico)

Publicity Chairs: Sebastien Pillement (Univ. de Nantes, France) and Dominik Stoffel (Univ. Kaiserslautern, Germany)

Web Chairs: Samah Saeed (City University of New York) and Masab Ahmad (AMD Research)

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