Currents

CEDA
IEEE Council on Electronic Design Automation

Newsletter

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June 2024

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KAUFMAN AWARD

Call for Nominations
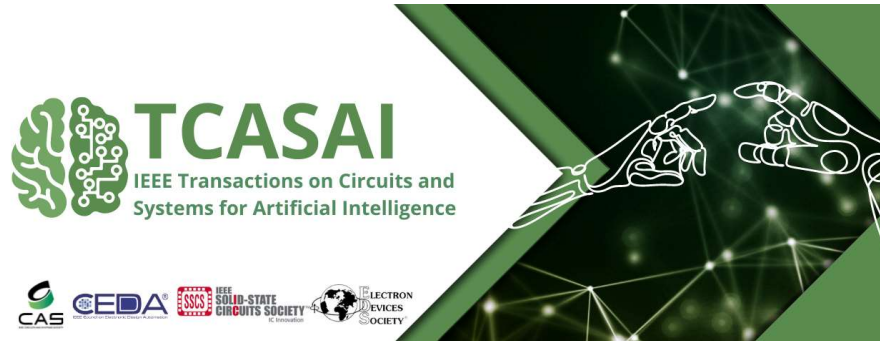
Due 30 JUNE 2024

Phil Kaufman Award

Nomination Deadline: 30 June 2024

The **Phil Kaufman Award** honors individuals who have made a demonstrable impact on the field of electronic system design through

technology innovations, education/mentoring, or business or industry leadership.

Prize and Presentation: The award will be presented at a dinner and ceremony honoring the recipient to be held in Silicon Valley. The recipient's name will be listed on a permanent large award and a smaller individual award will be presented to the recipient. Hotel and airline expenses of the recipient and spouse/partner will be included.

Submit a Nomination

IEEE Transactions on Circuits and Systems for Artificial Intelligence (TCASAI) Author Portal is Open for Submissions

As the first IEEE periodical dedicated to artificial intelligence (AI) hardware, the IEEE Transactions on Circuits and Systems for Artificial Intelligence (TCASAI) publishes contributions related to circuits and systems for artificial intelligence, including circuit and electronic system design, implementation, and demonstration. The IEEE TCASAI is co-sponsored by CEDA.

Officially launched in March 2024, the IEEE TCASAI invites original, high-quality research papers on innovations in hardware designed to execute diverse AI models. These include but are not limited to, digital circuits, analog circuits, mixed-signal circuits, emerging nanodevice-based circuits, FPGA, GPU, CPU, domain-specific circuits, and integrated computing systems. Submissions may also address corresponding optimizations of AI models that consider the constraints and supports of these hardware innovations.

Potential authors can submit their manuscripts through the IEEE Author Portal at: **https://ieee.atyponrex.com/journal/tcasai**

Learn More

2024 CEDA Award Recipients

Congratulations to all CEDA Award Recipients on your remarkable achievements. Thank you for your hard work, dedication, and contributions to the CEDA and EDA communities!

View Winners

IEEE Transactions on Computer-Aided Design of Integrated Circuits & Systems (TCAD)

The IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD) Donald O. Pederson Best Paper Award has two winning papers in 2024!

- "**PACT: An Extensible Parallel Thermal Simulator for Emerging Integration and Cooling Technologies**" by Zihao Yuan, Prachi Shukla, Sofiane Chetoui, Sean Nemtzow, Sherief Reda, and Ayse K. Coskun

- "**An Open-Source Framework for FPGA Emulation of Analog/Mixed-Signal Integrated Circuit Designs**" by Steven Herbst, Gabriel Rutsch, Wolfgang Ecker, and Mark Horowitz

Learn More

IEEE Embedded Systems Letters (ESL)

IEEE Embedded Systems Letters (ESL) is soliciting papers for its Special Issue on "Time-Centric Reactive Software (TCRS)." This special issue is for the Time-Centric Reactive Software (TCRS) workshop at ESWEEK 2024, to be held 29 September - 4 October 2024 in Raleigh, NC, USA, and the authors of accepted papers are expected to present in person at the workshop.

Papers Due: 8 July 2024

Topics:

- Automotive systems
- Compiler construction
- Computer architecture
- Cyber-physical systems
- Dataflow models
- Design automation
- Digital twins
- Discrete-event systems
- Distributed systems
- Embedded systems
- Formal verification
- Industrial automation
- Middlewares
- Model-based Design
- Modeling languages
- Networking
- Operating systems
- Programming languages
- Real-time systems
- Simulation
- System-level design

Call For Papers

IEEE Journal on Exploratory Solid-State Computational Devices and Circuits (JxCDC)

The IEEE Journal on Exploratory Solid-State Computational Devices and Circuits (JxCDC) is soliciting papers for its Special Issue on "Energy-Efficient In-/Near-Memory Computing with Emerging Devices."

Papers Due: 1 September 2024

Topics:

- New materials and devices that can enable energy-efficient IMC/NMC
- Integration of emerging technologies with silicon for energy-efficient IMC/NMC
- Crossbar array design and array-level demonstration for energy-efficient IMC/NMC
- Peripheral circuit design for energy-efficient IMC/NMC
- Architectural-level design for energy-efficient IMC/NMC
- Algorithms and hardware co-design for energy-efficient IMC/NMC
- Benchmarking simulators for energy-efficient IMC/NMC
- New applications for energy-efficient IMC/NMC beyond AI workloads (e.g. combinatorial optimization, general-purpose computing, etc.)

Call For Papers

Safety and Security in Heterogeneous Open System-on-Chip Platforms Workshop

(SSH-SOC 2024)

23 June 2024 | San Francisco, CA, USA

The Safety and Security in Heterogeneous Open System-on-Chip Platforms Workshop (SSH-SOC 2024) at the Design Automation Conference (**DAC 2024**) welcomes work-in-progress contributions and novel directions to tackle the challenges and profit from the opportunities provided by open hardware designs and architectures for the development of next-generation heterogeneous SoCs.

Workshop Website

International Conference on Synthesis, Modeling, Analysis and Simulation Methods, and Applications to Circuit Design (SMACD 2024)

2-5 July 2024 | Volos, Greece

The International Conference on Synthesis, Modeling, Analysis and Simulation Methods, and Applications to Circuit Design (SMACD 2024) is a forum devoted to modeling, simulation, and synthesis for Analog, Mixed-signal, RF (AMS/RF), and multi-domain (nanoelectronics, biological, MEMS, optoelectronics, etc.) integrated circuits and systems, as well as, emerging technologies and applications. Open-source tools and methods for IC design and experiences with modeling, simulation, and synthesis techniques in diverse application areas are also welcomed. Objective technologies include CMOS, beyond CMOS, and More-than-Moore such as MEMs, power devices, sensors, passives, etc.

Conference Website

Conferences

Design Automation Conference (**DAC 2024**)
- 23-27 June 2024
- San Francisco, CA, USA

Embedded Systems Week (**ESWEEK 2024**)
- 29 September-4 October 2024
- Raleigh, NC, USA

2024 ACM/IEEE International Conference on Computer-Aided Design (**ICCAD 2024**)
- 27-31 October 2024
- New Jersey, USA

Asia and South Pacific Design Automation Conference (**ASP-DAC 2025**)
- 20-23 January 2025
- Tokyo, Japan

Contact IEEE CEDA VP of Conferences Tsung-Yi Ho for sponsorship opportunities at **vp.conferences@ieee-ceda.org**.

Publications

IEEE CEDA financially sponsors and co-sponsors several publications and publishes its *Currents* newsletter to inform the EDA community on industry news and research results.

Visit the individual publication pages for more information on publication scope, call for papers, and more.

Top Accessed Articles in May 2024 (*as of 14 June 2024)

IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems

- **ViA: A Novel Vision-Transformer Accelerator Based on FPGA**
- **TrueNorth: Design and Tool Flow of a 65 mW 1 Million Neuron Programmable Neurosynaptic Chip**
- **NeuroSim: A Circuit-Level Macro Model for Benchmarking Neuro-Inspired Architectures in Online Learning**

IEEE Design&Test

- **Furthering Moore's Law Integration Benefits in the Chiplet Era**
- **High-Bandwidth Memory (HBM) Test Challenges and Solution**
- **Testability and Dependability of AI Hardware: Survey, Trends, Challenges, and Perspectives**

IEEE Embedded Systems Letters

- **An AI-Based Ventilation KPI Using Embedded IoT Devices**
- **Design of Leading Zero Counters on FPGAs**
- **Embedded Systems Education: Experiences With Application-Driven Pedagogy**

Contact IEEE CEDA VP of Publications Jörg Henkel at **henkel@kit.edu** or the journal's respective EiC for questions regarding CEDA-sponsored publications.

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