CEDA EC Meeting

27 September 2024

Agenda

- Roll Call
- Approval of September Agenda
- Approval of August Minutes
- 20th Anniversary
- Awards Updates
- Phil Kaufman Award RSVP
- DATE 2025 Speaker Approval
- Call for October EC Meeting Agenda Topics
- All Other Business
- Administrative Updates
    - Staffing update

Welcome - Silveira

- Roll Call
- Approval of September Agenda
- Approval of August Minutes

20th Anniversary - Gielen/Silveira

See spreadsheet for opportunities to volunteer.

https://docs.google.com/spreadsheets/d/1anZ9bJw2ixdZEQPrMWZGWhYiZ-V5tdEWZEwfIPs5PHU/edit?gid=273167660#gid=273167660

Shared via email Subject: Meeting Reminder: CEDA EC Meeting - Friday, September 27 - 9AM ET on September 23.

Awards Updates - Chen

2024 IEEE William J. McCalla ICCAD Best Paper Award Selection Committee

- Hussam Amrouch, Technical University of Munich, Germany
- Krishnendu Chakrabarty, Arizona State University, USA
- Yiran Chen, Duke University, USA
- Azadeh Davoodi, University of Wisconsin-Madison, USA
- Yong Liu, Cadence, USA
- Takashi Sato, Kyoto University, Japan
- Mehdi Tahoori, Karlsruhe Institute of Technology (KIT), Germany
- Wei Zhang, Hong Kong University of Science and Technology, Hong Kong

2024 IEEE ICCAD 10 Year Retrospective Most Influential Paper Award Selection Committee

- Giovanni De Micheli, EPFL Lausanne, Switzerland
- Jie Han, University of Alberta, Canada
- David Pan, *University of Texas* at *Austin, USA*
- Gang Qu, University of Maryland, College Park, USA
- Mark Ren, NVidia, USA
- Marilyn Wolf, University of Nebraska-Lincoln, USA
- Evangeline F. Y. Young, Chinese University of Hong Kong, Hong Kong

2024 IEEE William J. McCalla ICCAD Best Paper Award Candidates (1)

- **Customized Retrieval Augmented Generation and Benchmarking for EDA Tool Documentation QA**
  Yuan Pu (The Chinese University of Hong Kong); Zhuolun He (The Chinese University of Hong Kong); Tairu Qiu (ChatEDA Tech); Haoyuan WU (Shanghai AI Lab); Bei Yu (The Chinese University of Hong Kong)

- **Robust Implementation of Retrieval-Augmented Generation on Edge-based Computing-in-Memory Architectures**
  Ruiyang Qin (University of Notre Dame); Zheyu Yan (University of Notre Dame); Dewen Zeng (University of Notre Dame); Zhenge Jia (Shandong University); Dancheng Liu (SUNY Buffalo); Jianbo Liu (University of Notre Dame); Ahmed Abbasi (University of Notre Dame); Zhi Zheng (University of Notre Dame); Ningyuan Cao (University of Notre Dame); Kai Ni (University of Notre Dame); Jinjun Xiong (University at Buffalo); Yiyu Shi (University of Notre Dame)

- **An Agile Framework for Efficient LLM Accelerator Development and Model Inference**
  Lvcheng Chen (Zhejiang University); Ying Wu (Zhejiang University); Chenyi Wen (Zhejiang University); Shizhang Wang (Hubei University of Technology); Li Zhang (Hubei University of Technology); Bei Yu (The Chinese University of Hong Kong); QI SUN (Zhejiang University); Cheng Zhuo (Zhejiang University)

- **eXpect: On the Security Implications of Violations in AXI Implementations**
  Melisande Zonta (ETH Zürich); Andres Meza (UCSD); Nora Hinderling (ETH); Lucas Deutschmann (University of Kaiserslautern-Landau); Francesco Restuccia (University of California San Diego); Ryan Kastner (UCSD); Shweta Shinde (ETH Zurich)

- **Towards Uncertainty-Quantifiable Biomedical Intelligence: Mixed-signal Compute-in-Entropy for Bayesian Neural Networks**
  Likai Pei (University of Notre Dame); Yifan Qin (University of Notre Dame); Zephan M. Enciso (University of Notre Dame); Boyang Cheng (University of Notre Dame); Jianbo Liu (University of Notre Dame); Steven Davis (University of Notre Dame); Zhenge Jia (Shandong University); Michael Niemier (University of Notre Dame); Yiyu Shi (University of Notre Dame); X. Sharon Hu (University of Notre Dame); Ningyuan Cao (University of Notre Dame)

2024 IEEE William J. McCalla ICCAD Best Paper Award Candidates (2)

- **DDP-Fsim: Efficient and Scalable Fault Simulation for Deterministic Patterns with Two-Dimensional Parallelism**
  Feng Gu (State Key Lab of Processors, Institute of Computing Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences; CASTEST, Beijing); Mingjun Wang (State Key Lab of Processors, Institute of Computing Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences; CASTEST, Beijing); Jianan Mu (State Key Lab of Processors, Institute of Computing Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences; CASTEST, Beijing); Zizhen Liu (Institute of Computing Technology,Chinese Academy of Sciences); Jiaping Tang (State Key Lab of Processors, Institute of Computing Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences; CASTEST, Beijing); Hui Wang (CASTEST, Beijing); Yonghao Wang (State Key Lab of Processors, Institute of Computing Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences; CASTEST, Beijing); Jing Ye (State Key Lab of Processors, Institute of Computing Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences; CASTEST, Beijing); Huawei Li (State Key Lab of Processors, Institute of Computing Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences; CASTEST, Beijing); Xiaowei Li (State Key Lab of Processors, Institute of Computing Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences; CASTEST, Beijing)

- **Fusion of Global Placement and Gate Sizing with Differentiable Optimization**
  Yufan Du (Peking University); Zizheng Guo (Peking University); Yibo Lin (Peking University); Runsheng Wang (Peking University); Ru Huang (Peking University)

- **A Neural-Ordinary-Differential-Equations Based Generic Approach for Process Modeling in DTCO: A Case Study in Chemical-Mechanical Planarization and Copper Plating**
  Yue Qian (EDA Center, Institute of Microelectronics, Chinese Academy of Sciences and University of Chinese Academy of Sciences); Lan Chen (EDA Center, Institute of Microelectronics, Chinese Academy of Sciences and University of Chinese Academy of Sciences)

- **Spiking Transformer Hardware Accelerators in 3D Integration**
  Boxun Xu (University of California, Santa Barbara); Junyoung Hwang (Georgia Institute of Technology); Pruek Vanna-iampikul (Georgia Institute of Technology); Sung Kyu Lim (Georgia Tech); Peng Li (University of California, Santa Barbara)

- **Efficient Ultra-Dense 3D IC Power Delivery and Cooling Using 3D Thermal Scaffolding**
  Dennis Rich (Stanford University); Tathagata Srimani (Stanford University); Mohamadali Malakoutian (Stanford University); Srabanti Chowdhury (Stanford University); Subhasish Mitra (Stanford University)

2024 IEEE William J. McCalla ICCAD Best Paper Award Winners

- **Frontend:**

An Agile Framework for Efficient LLM Accelerator Development and Model Inference
Lvcheng Chen (Zhejiang University); Ying Wu (Zhejiang University); Chenyi Wen (Zhejiang University); Shizhang Wang (Hubei University of Technology); Li Zhang (Hubei University of Technology); Bei Yu (The Chinese University of Hong Kong); Qi Sun (Zhejiang University); Cheng Zhuo (Zhejiang University)

- **Backend:**

A Neural-Ordinary-Differential-Equations Based Generic Approach for Process Modeling in DTCO: A Case Study in Chemical-Mechanical Planarization and Copper Plating
Yue Qian (EDA Center, Institute of Microelectronics, Chinese Academy of Sciences and University of Chinese Academy of Sciences); Lan Chen (EDA Center, Institute of Microelectronics, Chinese Academy of Sciences and University of Chinese Academy of Sciences)

2024 IEEE ICCAD 10 Year Retrospective Most Influential Paper Award Candidates (1)

2014 IEEE/ACM International Conference on Computer-Aided Design

- **Towards interdependencies of aging mechanisms**

  Hussam Amrouch; Victor M. van Santen; Thomas Ebi; Volker Wenzel; Jörg Henkel

- **Hardware obfuscation using PUF-based logic**

  James B. Wendt; Miodrag Potkonjak

- **Reinforcement learning based power management for hybrid electric vehicles**

  Xue Lin; Yanzhi Wang; Paul Bogdan; Naehyuck Chang; Massoud Pedram

- **Cryptoraptor: High throughput reconfigurable cryptographic processor**

  Gokhan Sayilar; Derek Chiou

- **A non-volatile memory based physically unclonable function without helper data**

  Wenjie Che; Jim Plusquellic; Swarup Bhunia

2024 IEEE ICCAD 10 Year Retrospective Most Influential Paper Award Candidates (2)

2015 IEEE/ACM International Conference on Computer-Aided Design

- **OpenTimer: A high-performance timing analysis tool**

Tsung-Wei Huang; Martin D. F. Wong

- **DRUM: A Dynamic Range Unbiased Multiplier for approximate applications**

Soheil Hashemi; R. Iris Bahar; Sherief Reda

- **Mitigating effects of non-ideal synaptic device characteristics for on-chip learning**

Pai-Yu Chen; Binbin Lin; I-Ting Wang; Tuo-Hung Hou; Jieping Ye; Sarma Vrudhula; Jae-sun Seo; Yu Cao; Shimeng Yu

- **ConFirm: Detecting firmware modifications in embedded systems using Hardware Performance Counters**

Xueyang Wang; Charalambos Konstantinou; Michail Maniatakos; Ramesh Karri

2024 IEEE ICCAD 10 Year Retrospective Most Influential Paper Award Winner:

- Tsung-Wei Huang and Martin D. F. Wong, "OpenTimer: A High-Performance Timing Analysis Tool", ICCAD 2015.

Attending Phil Kaufman Award and Banquet

- **The Phil Kaufman Award** honors individuals who have had a demonstrable impact on the field of electronic system design through technology innovations, education/mentoring, or business or industry leadership. The award was established as a tribute to Phil Kaufman, the late industry pioneer who turned innovative technologies into commercial businesses that have benefited electronic designers.

- **This Year's Winner**: Prof. Jason Cong, UCLA

- **Award and Banquet Time:** 6:30 pm - 9:00 pm, **NOVEMBER 6, 2024**

- **Location**

  Hayes Mansion
  200 Edenvale Avenue
  San Jose, CA 95136
  United States

- Because CEDA is a sponsor, the registration for this event is free for CEDA EC members.
  - Some travel expenses to be reimbursed for VP and above?

- Laura will send out a survey: Yes/No; if Yes, your meal selection.

Award Document Revisions

- Amanda and I have been working to revise the award documents for the following three Awards
  - IEEE CEDA Ernest S. Kuh Early Career Award
    - In a good shape
  - IEEE William J. McCalla ICCAD Best Paper Award and 10 Year Retrospective Most Influential Paper Award
    - Together, three awards given. Two BPAs and one 10-year most influential.
    - Decision is to defer this one because ICCAD is considering to just give two Best Paper Awards instead of separating them into Front-End and Back-End categories. This hasn't been finalized.
  - IEEE/ACM A. Richard Newton Technical Impact Award in Electronic Design Automation
    - Need further discussions. Discuss if time allows.

Kuh Award - Chen

MOTION: Deming Chen moves to approve the September 2024 revisions to the Ernest S. Kuh Early Career Award.

Phil Kaufman Award - Chen

Laura will send out the form to RSVP.

Must RSVP by October 23.

CEDA gets 10 tickets.

DATE 2025 Speaker Approval – O'Connor

- Wayne Burleson, U Massachusetts, US (A. Richard Newton Technical Impact Award 2024) - Possible topic: hardware security
- Albert Cohen, Google Research, FR - Possible topic: parallelizing and optimizing compilers, machine learning compilers, parallel and synchronous programming languages, with applications to high-performance computing, artificial intelligence and reactive control
- Dr. Anirudh Devgan, CEO, Cadence, US (Phil Kaufman award 2021 - For his extensive electronic design automation (EDA) contributions. He is recognized as a leading authority in parallel and distributed computing as well as Circuit Simulation, Physical Design and Signoff, System Design and Analysis, Statistical Design and Optimization, Verification and Hardware Platforms, and more) - Possible topic: intelligent system design
- Steve Furber, U Manchester, UK - Possible topic: bio-inspired massively-parallel computation
- Georges Gielen, KU Leuven, BE (EDAA Achievement award 2021) - Possible topic: analog and mixed-signal CAD tools and design automation
- Patrick Groeneveld, AMD / Cerebras, US – EDA veteran - Possible topic: Wafer-scale computing engine for AI

DATE 2025 Speaker Approval – O'Connor

- Pierluigi Nuzzo, USC, US (Ernest Kuh award 2023 - For outstanding contributions to high-assurance design of cyber-physical systems using contract-based design methodology) - Possible topic: design and certification of artificial intelligence and autonomous systems
- Sophia Shao, UC Berkeley, US – Possible topic: EDA / computer architecture / AI hardware
- Ingrid Verbauwhede, KU Leuven, BE (EDAA Achievement award 2024) - Possible topic: Hardware Security [invited as CEDA Luncheon Speaker at DAC 2024 - declined]
- Bei Yu, Chinese University of Hong Kong, HK (Ernest Kuh award 2022 - For contributions to machine learning in physical design and design for manufacturability) - Possible topic: machine learning and deep learning in EDA
- Douglas Yu, TSMC - Possible topic: 3D chiplets and heterogeneous integration [invited as CEDA Luncheon Speaker at DAC 2024 - declined]
- Zheng Zhang, UCSB, US (Ernest Kuh award 2021 - For contributions towards fundamental stochastic computation methods for circuit simulation and testing and beyond) - Possible topic: uncertainty-aware design automation for electronics, photonics, and quantum circuits; small-data and data-free scientific machine learning for multi-physics design of 3D IC and chiplets

All Other Business -

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Administrative - Paul

EC Meeting at ICCAD 2024 RSVPS – Sunday, 27 October 2024

- **Attending In-Person**
  - Aparna Dey
  - Deming Chen
  - Enrico Macii
  - Gi-Joon Nam
  - Iris Hui-Ru Jiang
  - Joerg Henkel
  - Luis Miguel Silveira
  - Mehdi Tahoori
  - Qi Zhu
  - Sri Parameswaran
  - Subhasish Mitra
  - Tsung-Yi Ho
- **Attending Virtually**
  - Abe Elfadel
  - Bei Yu
  - Cristiana Bolchini
  - Elena-Ioana Vatajelu
  - Georges Gielen
  - Iris Bahar
  - Marina Zapater
  - Vasilis Pavlidis
- **Not Attending**
  - Ian O'Connor
  - Jiang Hu
  - Preeti Ranjan Panda
- **No Response**
  - Mohammad Al Faruque
  - Dennis Brophy
  - Jinwook Jung

Administrative - Paul

Phil Kaufman Award Ceremony & Banquet

- Date: Wednesday, 6 November 2024
- Location: Hayes Mansion
  San Jose, CA, USA

Please RSVP via the Google Form by
Wednesday, 23 October 2024.

Administrative - CCLLC

- Staffing Update
  - Laura Paul to become POC for CEDA November 1
  - Amanda Osborn to be there for OOO support and guidance of Laura.