

Cunxi Yu

CONTACT INFORMATION

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RESEARCH INTERESTS

Novel algorithms, systems, and hardware infrastructures for computing and security

Keywords: EDA, Applied ML/AI, Formal Methods, Optical Computing

RESEARCH APPOINTMENTS

University of Maryland, College Park, College Park, MD, USA

Assistant Professor (Electrical and Computer Engineering)

2023 - present

Affiliated Assistant Professor (Computer Science)

2024 - present

NVIDIA Research, College Park, MD, USA

Visiting Professorship, NVR (Design Automation, Formal Verification)

2024 - present

University of Utah, Salt Lake City, UT, USA

Adjunct Assistant Professor

2023 - 2025

Assistant Professor

2019 - 2023

Cornell University, Ithaca, NY, USA

Postdoc

2018 - 2019

Advisor: Prof. Zhiru Zhang

EPFL, Lausanne, Switzerland

Postdoc

2017 - 2018

Advisor: Prof. Giovanni De Micheli

IBM Thomas J. Watson Research Center, Yorktown Heights, NY, USA

Research Intern, Design Automation Research

2015, 2016

EDUCATION

University of Massachusetts Amherst, Massachusetts, USA

Ph.D. Computer System Engineering

2017

- Dissertation: "Formal Analysis of Arithmetic Circuits using Computer Algebra - Verification, Abstraction, and Reverse Engineering." (Formal Methods)
- Advisor: Maciej Ciesielski

Zhejiang University City College, Hangzhou, China

B.S. Electrical Engineering

2013

EXPERIENCE HIGHLIGHTS

- **Research:** Published 18 journal articles, 60 peer-reviewed conference publications, 6 workshop papers, two books, and one book chapter. PI is committed to publish at top venues, e.g., DAC, ICCAD, DATE, ASPLOS, ICML, TCAD, Nature Computational Science, Nature Communications, etc. Multiple award-winning research outcomes at *top-tier venues in EDA/Computer System* have produced real-world impacts in chip design, with **Best Paper Awards** at ASPLOS'25 and DAC'23, and multiple **Best Paper Nominations** including DAC'25 and ICCAD'25.
- **Funding:** As **Lead/sole-PI**: share \$3.5 million out of \$5.6 million. **Total:** Share \$4 million out of \$6.9 million. Industrial grants include NVIDIA, AMD/Xilinx, Intel, Northrop Grumman,

Ampere computing.

- **Technology Transfer:** Collaborated with industries such as Synopsys/Intel/Google/Nvidia, leading to successful technology transfers. Produced three patents and hold Visiting Professorship at NVIDIA Research.
- **Open-source:** Long-term commitment to open-source and research reproducibility in hardware and software design infrastructures, including formal verification and synthesis, machine learning, and optical computing. GitHub: github.com/Yu-Maryland/
- **Teaching:** Teach fundamental core courses in digital design, formal methods, EDA and computer architecture, such as Digital System Design, Digital CAD, Computer Organization, Deep Learning Systems, etc.

SELECTED AWARDS

- Best Paper Nomination, ACM/IEEE Design Automation Conference (DAC 2025)
- Best Paper Nomination, ACM/IEEE International Conference on CAD (ICCAD 2025)
- Best Paper Award, Architectural Support for Programming Languages and Operating Systems (ASPLOS 2025)
- LLM4HW Contest Third Place (Team UMD, 3/70), ACM/IEEE International Conference on Computer-Aided Design (ICCAD 2024)
- Best Paper Award, ACM/IEEE Design Automation Conference (DAC 2023)
- American Physics Society (APS) - Division of Laser Science Poster Award (2022)
- NSF CAREER Award (2021)
- Best Paper Nomination, IEEE/ACM ASP-DAC (ASP-DAC 2017)
- ACM Doctoral Dissertation Award Nomination (by UMass Amherst)
- DAC Hack@DAC Security Contest - 1st Place (2017)
- ACM/IEEE IWLS IBM Student Grant (2017)
- IEEE TVLSI Travel Grant (2016)
- IEEE TCAD Best Paper Nomination (2016)