

Princeton University  
Department of Electrical and Computer Engineering

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## Education

<b>Princeton University</b>	2020 - 2025 (Expected)
Ph.D., Electrical and Computer Engineering	
M.A., Electrical and Computer Engineering	2022
Advisor: Prof. David Wentzlaff	
<b>Duke University</b>	2020
B.S.E., Electrical and Computer Engineering	
B.S., Computer Science	
<i>Magna Cum Laude</i> , Graduated with ECE Distinction	
Advisor: Prof. Krishnendu Chakrabarty	

## Research

**Research Interests:** Computer Architecture under Economic/Future Trends,  
Chiplet Architectures/Systems, Sustainability, Chip Tapeouts

<b>AMD Research</b>	Summer 2023
Research Intern - Bellevue, WA	
Reported to Yasuko Eckert	
CPU/GPU profiling and optimization for large language model workloads	
<b>Princeton Parallel Group</b>	2021 - Present
Post-Moore's Law computer architectures	
Focusing on evaluation metrics and architectures beyond power, performance, and area (PPA)	
<b>Chakrabarty Lab</b>	2018 - 2020
VLSI testing for deep learning hardware and Carbon Nanotube FETs	
Undergrad Thesis: Automating Path Generation for Variation-Aware Delay Fault Testing	
<b>TU Dortmund Department of High Voltage Technology</b>	Summer 2018
Advisor: Prof. Frank Jenau	
High voltage cable technologies and measurement systems	
Supported by DAAD RISE Germany Scholarship	

## Publications

7. Hengrui Zhang, August Ning, Rohan Baskar Prabhakar, and David Wentzlaff. "LLMCompass: Enabling Efficient Hardware Design for Large Language Model Inference". In: *2024 ACM/IEEE 51st Annual International Symposium on Computer Architecture (ISCA)*. 2024, pp. 1080–1096. doi: [10.1109/ISCA59077.2024.00082](https://doi.org/10.1109/ISCA59077.2024.00082)
6. Ang Li, Ting-Jung Chang, Fei Gao, Tuan Ta, Georgios Tziantzioulis, Yanghui Ou, Moyang Wang, Jinzheng Tu, Kaifeng Xu, Paul Jackson, August Ning, Grigory Chirkov, Marcelo Orenes-Vera, Shady Agwa, Xiaoyu Yan, Eric Tang, Jonathan Balkind, Christopher Batten, and David Wentzlaff. "CIFER:

- A Cache-Coherent 12nm 16mm<sup>2</sup> SoC With Four 64-Bit RISC-V Application Cores, 18 32-Bit RISC-V Compute Cores, and a 1541 LUT6/mm<sup>2</sup> Synthesizable eFPGA”. in: *IEEE Solid-State Circuits Letters* (2023). DOI: [10.1109/LSSC.2023.3303111](https://doi.org/10.1109/LSSC.2023.3303111)
5. August Ning, Georgios Tziantzioulis, and David Wentzlaff. “Supply Chain Aware Computer Architecture”. In: *Proceedings of the 50th Annual International Symposium on Computer Architecture (ISCA)*. 2023. DOI: [10.1145/3579371.3589052](https://doi.org/10.1145/3579371.3589052)
  4. Ting-Jung Chang\*, Ang Li\*, Fei Gao, Tuan Ta, Georgios Tziantzioulis, Yanghui Ou, Moyang Wang, Jinzheng Tu, Kaifeng Xu, Paul J. Jackson, August Ning, Grigory Chirkov, Marcelo Orenes-Vera, Shady Agwa, Xiaoyu Yan, Eric Tang, Jonathan Balkind, Christopher Batten, and David Wentzlaff. “CIFER: A 12nm, 16mm<sup>2</sup>, 22-Core SoC with a 1541 LUT6/mm<sup>2</sup>, 1.92 MOPS/LUT, Fully Synthesizable, Cache-Coherent, Embedded FPGA”. in: *2023 IEEE Custom Integrated Circuits Conference (CICC)*. 2023. DOI: [10.1109/CICC57935.2023.10121294](https://doi.org/10.1109/CICC57935.2023.10121294)
  3. Fei Gao, Ting-Jung Chang, Ang Li, Marcelo Orenes-Vera, Davide Giri, Paul Jackson, August Ning, Georgios Tziantzioulis, Joseph Zuckerman, Jinzheng Tu, Kaifeng Xu, Grigory Chirkov, Gabriele Tombesi, Jonathan Balkind, Margaret Martonosi, Luca Carloni, and David Wentzlaff. “DECADES: A 67mm<sup>2</sup>, 1.46TOPS, 55 Giga Cache-Coherent 64-bit RISC-V Instructions per second, Heterogeneous Manycore SoC with 109 Tiles including Accelerators, Intelligent Storage, and eFPGA in 12nm FinFET”. in: *2023 IEEE Custom Integrated Circuits Conference (CICC)*. 2023. DOI: [10.1109/CICC57935.2023.10121257](https://doi.org/10.1109/CICC57935.2023.10121257)
  2. Ang Li, August Ning, and David Wentzlaff. “Duet: Creating Harmony between Processors and Embedded FPGAs”. In: *2023 IEEE International Symposium on High-Performance Computer Architecture (HPCA)*. 2023. DOI: [10.1109/HPCA56546.2023.10070989](https://doi.org/10.1109/HPCA56546.2023.10070989)
  1. Sanmitra Banerjee, Arjun Chaudhuri, August Ning, and Krishnendu Chakrabarty. “Variation-Aware Delay Fault Testing for Carbon-Nanotube FET Circuits”. In: *IEEE Transactions on Very Large Scale Integration (VLSI) Systems* 29.2 (2021), pp. 409–422. DOI: [10.1109/TVLSI.2020.3045417](https://doi.org/10.1109/TVLSI.2020.3045417)

## Workshop Presentations

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2. August Ning and David Wentzlaff. “Computer Architectures for Chip Surplus”. In: *ACM Student Research Competition at MICRO 2022* (2022)
1. August Ning, Georgios Tziantzioulis, and David Wentzlaff. “Supply Chain Aware Chip Architecture”. In: *The Fourth Young Architect Workshop at ASPLOS 2022* (2022)

## Talks

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Berkeley SLICE Lab All-Hands - ”Architectural Implications of Advanced Computing Sanctions”	2024
Stanford Computer Architecture Reading Group - ”Architectural Implications of Advanced Computing Sanctions”	2024
NYU Computer Architecture Day - ”Chip Architectures Under Advanced Computing Sanctions”	2024
Princeton ACM - ”Should You go to Grad School?”	2024
AMD Research - ”Supply Chain Aware Computer Architecture”	2023
Princeton Graduate Fellowship Panel, Panelist	2022
Princeton EGR 152 - ”Spotlight on Engineering”	2022

## Professional and Academic Service

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ISCA 2024 - Artifact Evaluation Committee	2024
ISCA 2023 - Undergrad Architecture Mentoring (uArch) Workshop Mentor	2023
ASPLOS 2023 Social Co-Chair	2023
Computer Architecture Student Association (CASA) Steering Committee	2022 - Present

## Princeton

Whitman College - Resident Graduate Student	2023 - Present
Princeton ACM - Graduate Student Liaison	2023 - Present
ECE Department Graduate Committee	2022 - Present
Princeton-Intel REU Program - Graduate Research Mentor	Summer 2022, Summer 2024
Princeton Graduate Student Government	2021 - Present
GSG Social Committee Member	
Electrical and Computer Engineering Assembly Representative	

## Duke

Duke IEEE – Student Branch	2016 - 2020
Vice President (2017) and President (2018-2020)	
Tau Beta Pi (NC Gamma) - Treasurer	2019 - 2020
Engineering World Health Tanzania - Volunteer BMET	Summer 2017

## Teaching and Mentoring

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### Princeton

Graduate Teaching Assistant - grading, office hours, recitations	
ECE/COS 475/575: Computer Architecture	Spring 2022
Prof. David Wentzlaff	
Princeton-Intel REU Program	
Dara Oseyemi (Summer 2022)	
Mukund Ramakrishnan (Summer 2022)	
Manya Zhu (Summer 2022)	
Jeremy Hui (Summer 2024)	
Nikhil Sampath (Summer 2024)	

### Duke

Undergraduate Teaching Assistant - grading, office hours, lab instruction	
ECE 110: Fundamentals of ECE	Fall 2018, Spring 2018, 2019, 2020
Prof. Stacy Tantum	
ECE 230: Microelectronic Devices and Circuits	Fall 2018
Prof. Aaron Franklin	
ECE 350: Digital Systems	Fall 2019, Spring 2019, 2020
Prof. Rabih Younes, Prof. John Board	

## Non Research Experience

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### Microsoft

Software Engineering Intern – Redmond, WA (Remote)	Summer 2020
Azure hardware acceleration. Project implemented in C/C++	

### Burns & McDonnell

Electrical Engineering Summer Analyst – Chicago, IL	Summer 2019
Substation design (physical and wiring diagrams) contracts for ComEd and LGE-KU	

## Honors

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Princeton - ECE Graduate Student Award for Excellence in Service	2023
Princeton - Gordon Y. S. Wu Fellowship	2020
National Science Foundation – Graduate Research Fellowship	2020

Otto Meier Jr. Tau Beta Pi Award	2020
Chief Student Marshal	2019
IEEE Eta Kappa Nu	2019
Tau Beta Pi	2019
DAAD RISE Germany Scholarship	2018
Bingle Family Scholarship	2017
Travel Grants: ASPLOS 2022 (YArch), MICRO 2022 (SRC), HPCA 2023, ASPLOS 2023, ISCA 2023, ISCA 2024	

## Miscellaneous

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**Languages:** Fluent in English, Mandarin Chinese, proficient in German, Spanish, Swahili

**Hobbies:** House Plants, Gardening, Day Hiking, Cooking

**Nationality:** USA

Last updated: 07 August 2024