

EDUCATION

- **University of California, Santa Cruz** Santa Cruz, CA
PhD student in Computer Science *GPA: 3.80/4.0; Anticipated **June 2030***
- **Cornell University** Ithaca, NY
Master of Science in Computer Science *GPA: 3.76/4.0; Aug 2023 - May 2025*
- **Cornell University** Ithaca, NY
Bachelor of Science in Computer Science and Environmental Engineering ***Magna Cum Laude***

RESEARCH EXPERIENCE

- **Graduate Researcher** Sep 2025 - Present
UC Santa Cruz *MASC* Group, led by José Renau
 - Building an AI agent system for hardware design - RTL code generation, synthesis, verification, PnR, debugging, and tapeout; including agent harness and more efficient EDA tools
- **Graduate Researcher** Sep 2023 - May 2025
Cornell *Capra* Group, led by Adrian Sampson
 - Built and optimized a PyTorch-to-FPGA compiler flow on MLIR, achieving $1.7\times$ performance over AMD Vitis
- **Undergraduate Researcher** Nov 2021 - May 2023
Cornell *PEESE* Group, led by Fengqi You
 - Built and evaluated an attention-based multi-agent deep reinforcement learning model for smart-city energy management using OpenAI Gym simulation and real-world data.

PUBLICATIONS AND TALKS

1. **Xie, J.**, Garg, S., Renau, J. “Are Skills Enough? An Agentic Frequency Optimization View for Large Chips.” Accepted at *IEEE International Conference on LLM-Aided Design, 2026*. Paper
2. **Xie, J.**, Williams, E., Sampson, A. “From PyTorch to Calyx: An Open-Source Compiler Toolchain for ML Accelerators.” Presented at *7th C4ML Workshop, CGO 2026* and *8th Workshop on Accelerated Machine Learning, HiPEAC 2026*. Paper — C4ML Workshop and HiPEAC Workshop
3. “Global Instruction Selection for Scalable Vectors.” Student Technical Talk, LLVM Developer Conference 2024
4. **Xie, J.**, Ajagekar, A., You, F. “Multi-Agent Attention-Based Deep Reinforcement Learning for Demand Response in Grid-Responsive Buildings.” *Applied Energy, 2023*. Paper

INTERNSHIP EXPERIENCE

- **ASIC Design Engineer (Silicon Photonics, Physical Design)** Jun 2026 - Present
Ayar Labs San Jose, CA
 - Developed an AI-assisted automatic photonic-routing framework for co-packaged optics
 - Built physical-design backend automation for ASIC implementation and power-integrity analysis
- **Machine Learning Compiler Engineer (PyTorch, MLIR, MoE)** Jun 2025 - Sep 2025
Cerebras Systems Sunnyvale, CA
 - Applied liveness analysis and profiling tools to optimize memory scheduling and visualization on Perfetto
 - Built a two-pass compile workflow to reduce wafer layout selection optimization process for LLM MoE models
- **Software Engineer (Backend, Database Design)** Jun 2023 - Aug 2023
Orenda Power Inc. New York City, NY
 - Built a power grid database with real-time processing and designed APIs for IoT control operations
- **Machine Learning Research Engineer (PyTorch, TensorFlow, JAX)** May 2022 - Aug 2022
Deep Ivy Inc. Remote
 - Developed framework converters and a graph compiler to accelerate ML model transformations

TECHNICAL SKILLS

- C++, Python, PyTorch, SystemVerilog, OpenROAD, Linux

AWARDS

- Member of Sigma Xi, The Scientific Research Honor Society