

# Austin Wu

[linkedin.com/in/austin-wu/](https://www.linkedin.com/in/austin-wu/) | [github.com/Austin4705](https://github.com/Austin4705)

## EDUCATION

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### Cornell University

Ithaca, New York

*Dual Major: Bachelor of Science in Applied Physics*

*Graduation Date: May 2027*

Relevant Coursework: PHYS2217, PHYS2218, PHYS7687, MATH2230, MATH2240, MATH6302, AEP1100, AEP3610, AEP3200, AEP4200, AEP4500, CS4789, CS4999

**Awards:** USACO Platinum Competitor (Top  $\approx 150/30000$  the USA for Pre-collegiate Competitive Programming)

## EXPERIENCE

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### Researcher

April 2025 – Present

*Caltech, Ye Lab for Topological Materials*

*Pasadena, CA*

- Grew Kagome Crystals in order to experimentally measure them
- Created a novel shear-force mechanism to stretch Crystals at absolute temperatures to look for emergent Quantum Hall Phenomenon

### Founding Engineer

September 2024 – December 2024

*Deepsilicon (YC24)*

*Remote*

- Working on a custom TPU on a FPGA using a quantized 1.5bit architecture to achieve performance speedups.
- Implemented Berkeley Hardfloat with for high performance FPU operations
- Creating nontrivial optimizations like Chebyshev polynomial approximations for certain algorithms
- Set up the FPGA compilation build chain.

### Researcher

October 2023 – Present

*Cornell, Yasuda Lab for 2D Quantum Nanomaterials*

*Ithaca, NY*

- Exfoliated and stacked  $HBn$  in novel configurations to prove for ferroelectricity
- Built and utilized a novel experimental tool called a Quantum Twisting Microscope
- Designed and built the mechanisms for the dilution fridges that are used by the lab to experimentally measure devices
- Developed a full-stack web application using OpenCV, React, Flask, and MongoDB to automate the transfer station machine allowing for exponential speedup of device creation with nontrivial CV algorithms.

### Co Founder and Vice President

December 2023 – Present

*Quantum Computing Association at Cornell*

*Ithaca, NY*

- Leading a team advised by Professor Or Katz that is creating a novel Quantum Memory System to break the record on room temperature quantum information storage by 100x
- Created complicated thermal simulations in COMSOL to verify a heating and nonmagnetic enclosure
- Created a simulator for parameter optimization of the system and designed the optical table layout for the system

### Developer

January 2024 – May 2024

*Cornell, Ken Birman Lab of Distributed Systems*

*Ithaca, NY*

- Ran internal experimentation using CUDA to optimize caching for large scale matrix multiplication.
- Contributed to the Cascade Project by developing a fast vector database using FUSE for RAG.

## TECHNICAL SKILLS

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**Languages:** C/C++, Python, JavaScript/HTML/CSS, Java, C#, Rust, Verilog, SystemVerilog

**Frameworks:** CUDA, React/Next, Node.js, Express, MongoDB, Flask, Django, Tailwind

**Developer Tools:** Git, Docker, AWS, Jenkins, Vim

**Libraries:** Pandas, NumPy, Matplotlib, OpenCV, PyTorch, Sci-Kit, TensorFlow

**Tools:** Solidworks, Fusion360, COSMOL, Ansys, Vivado