

# Asma Ansari

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Ithaca, NY 14850

## EDUCATION

**Cornell University** | *Bachelor of Science - Electrical and Computer Engineering* | GPA: 3.57 **May 2025**

## SKILLS

**Technical Skills:** C, Python, Java, Verilog, Assembly, Machine Learning, Data Analysis

**Tools:** VS Code, Git, COMSOL, L-Edit, LTSpice, Fusion 360, Quartus, Cadence, Altium

**Leadership Skills:** Entrepreneurship, Project Management, Technical Presentations

## EXPERIENCE

**AlgoLink** | Ithaca, NY | *Machine Learning Intern* **Jun. 2024 – Aug. 2024**

- Utilized prompt engineering to tune ChatGPT's Mini-4o model by sending requests through an API key such that the model can function as a grader for AlgoLink's technical courses
- Analyzed 1,000,000+ datapoints related to resumes, job listings, and skills to understand and simulate job-matching algorithms using Python's data analysis and machine learning libraries

**OrgoPhone** | Ithaca, NY | *Founder & CTO* **Mar. 2023 – May 2024**

- Developed a functional prototype for a sustainable and ethically produced smartphone using Raspberry Pi and WaveShare microcontrollers and other relevant components
- Secured \$3,000+ in non-dilutive funding to support the prototyping phase and product development
- Utilized Fusion 360 to create detailed designs for the smartphone prototype, incorporating CNC and laser-cutting techniques, to illustrate the final product's design
- Presented the prototype and business model to 50+ Ithaca community members and investors, receiving feedback from industry mentors during the 2023 cohort of Rev:Ithaca's Hardware Prototyping Accelerator

**CU Sustainable Design** | Ithaca, NY | *Currents Prediction Algorithm Sub-Team Lead* **Sep. 2022 – May 2024**

- Led a team of 5 engineers in developing predictive algorithms to reduce energy expenditure due to heating and cooling of single-occupancy rooms, such as dormitories and offices
- Developed an algorithm using LightGBM that increased energy-efficient temperature operating time from 8 to 12 hours, resulting in at least a 50% reduction in energy consumption
- Coordinated data collection efforts in one of Upson Hall's offices, managing sensor deployment and validation processes to ensure high-quality training datasets for machine learning models

## PROJECTS

**Grow A Plant!** | *ECE 4760 – Digital Systems Design Using Microcontrollers* **May 2025**

- Developed an interactive plant growth game using Pico, VGA display, and analog controls, implementing pseudo-fractal generation algorithms and real-time user input processing
- Engineered a memory-efficient node-based tree structure with custom memory pool management to overcome hardware limitations, supporting 1,750+ nodes while maintaining smooth 30 FPS animation
- Implemented multi-threaded architecture with 6 concurrent threads managing VGA graphics, ADC input processing, button handling, and physics-based rain/fertilizer animations using pthreads

**Hardware Neuron Simulation** | *ECE 4740 – Introduction to Digital/VLSI Design* **May 2025**

- Designed neuron circuit schematics in Cadence Virtuoso, implementing MAC unit with Wallace tree multiplier, ReLU activation function, and finite state machine for sequential input processing
- Validated schematic performance achieving 164 fJ energy consumption per computation with 1.7 ns propagation delay through transient simulation and functional verification testing
- Developed Python neural network simulation using hardware-derived performance characteristics to validate neuron functionality, successfully training a 5-neuron network to perform XOR classification