

Yosef Mimarbasi

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EDUCATION

Cornell University

May 2028

B.S. in Electrical and Computer Engineering, Minor in Entrepreneurship

Ithaca, NY

- **Bridges Scholar:** Selected as one of 25 first-generation students from 12,128 first-gen Cornell applicants (~0.2%)
- **Relevant Coursework:** Multivariable Calculus, Differential Equations, Linear Algebra, Digital Logic and Computer Organization, Embedded Systems, Intro to Machine Learning, Data Science, Machine Shop Training
- **Activities:** Institute for Electrical and Electronics Engineers (IEEE) | Society of Asian Scientists & Engineers (SASE) | Cornell Maker Club | Cornell Japan-U.S. Student Association | Cornell Matcha Club | Cornell Roundnet

EXPERIENCE

AI Trainer - Paid Fellowship

March 2026 – Present

Handshake

Ithaca, NY

- Evaluated 2,400+ multimodal LLM outputs (GPT, Claude, Gemini) on technical diagrams, charts, and equations; identified systematic hallucinations and reasoning gaps across visual interpretation and multi-step deduction.
- Engineered 300+ adversarial test cases targeting failure modes; created labeled datasets that informed model refinement, increasing visual reasoning accuracy by ~12% on technical-diagram interpretation tasks.

Web Developer

November 2024 – August 2025

Read and Give Project | React, TypeScript, Tailwind CSS

Lindenhurst, NY

- Designed, built, and deployed the full-stack public web application for a youth-led literacy nonprofit (\$310,000+ in books distributed across 15+ countries), centralizing all its donation drives, events, and distribution workflows.
- Increased outreach by approximately 10% by re-architecting the site with reusable and animated UI components.

Interior Firefighter

October 2024 – Present

Port Jefferson Fire Department, Hook & Ladder Co. 1

Port Jefferson, NY

- Respond 24/7 to ~530 emergency incidents per year—fire, medical, hazmat, and rescues—under high-pressure, life-critical conditions; NFPA 1001 (Firefighter I) and American Red Cross (ARC) First Aid/CPR/AED certified.

PROJECTS

Spectre

March 2026

MediaPipe, FastAPI, React, TypeScript, PixiJS, Rust, Claude API

- Built a real-time 1v1 browser boxing game where players throw real punches at phone cameras while pose-tracked silhouettes battle in a shared overlay, streaming pose keypoints from phone clients to the server over WebSockets.
- Engineered the real-time stack—in-browser MediaPipe pose tracking, a FastAPI server with game physics and 60 Hz hit detection, and a PixiJS overlay—integrating Claude and ElevenLabs APIs for live AI commentary.

Alpha Accelerator

April 2026 – Present

SystemVerilog, FPGA, Rust, RTL Design

- Architecting FPGA-based algorithmic-trading smart NIC which parses live market data and executes orders entirely in hardware, achieving a 650 ns tick-to-trade latency (CPU bypass, fully deterministic pipeline).
- Designed and optimized low-latency RTL in SystemVerilog for BTC perpetuals trading: order decoder, signal evaluation, order execution; synthesized at 250 MHz with 31% LUT utilization; verified via ModelSim.

RecAicle

May 2024 – April 2026

Python, TensorFlow, OpenCV, Flask, AWS

- Engineered and deployed a full-stack TensorFlow computer-vision web app on AWS where users could upload a photo of electronic or household waste and receive location-specific disposal and recycling guidance.
- Trained the underlying CNN on a large custom labeled image dataset, iterating activation functions from step and sigmoid to ReLU to resolve training failures, raise classification accuracy, and reduce model uncertainty.

TECHNICAL SKILLS

Languages: Python, C, C++, Java, TypeScript/JavaScript, Bash/Shell

Full-Stack Web & Cloud: React, Tailwind CSS, FastAPI, Flask, AWS (EC2/S3), Docker, Git/GitHub, Vercel, Linux

Hardware & FPGA Design: SystemVerilog, Verilog, RTL Optimization, Quartus Prime, ModelSim, Place-and-Route

ML & Computer Vision: TensorFlow, scikit-learn, OpenCV, NumPy, Pandas, Jupyter, Matplotlib, MATLAB

APIs & Real-Time Systems: WebSockets, MediaPipe, ElevenLabs, Market Data Feeds (FIX protocol), FastAPI