

ANTHONY BURDEN

Computer Engineering Student | AI & Robotics

Northern New Jersey | 848-234-3299 | anthonydavidburden@gmail.com

anthony-burden-portfolio.pages.dev | github.com/burdena0 | LinkedIn

EDUCATION

Rochester Institute of Technology

Expected May 2028

B.S. in Computer Engineering | **Mathematics Immersion**

Relevant coursework: Computer Vision in Robotics, Microcontroller Systems, Digital Systems Design, Circuits

TECHNICAL SKILLS

Programming & AI: Python, C/C++, VHDL, PyTorch, OpenCV, ONNX Runtime, NumPy, Ollama

Software: Git/GitHub, Linux, SQLite, asynchronous programming, Webots, MuJoCo

Embedded systems: ESP-IDF, FreeRTOS, PlatformIO, KiCad

SELECTED PROJECTS

Webots Neural Vision Robot

PyTorch | OpenCV | Webots | [GitHub](#)

- Trained a 1,460-parameter CNN on 3,000 labeled synthetic images for selectable red, blue and green targets; reached 98.13% macro mask IoU on 400 held-out scenes.
- Benchmarked against calibrated HSV on 3,600 fresh synthetic scenes and 108 paired Webots trials; measured segmentation, CPU latency and task completion, with 27 automated tests.

Neural Pan/Tilt Camera Tracker

PyTorch | MuJoCo | C/FreeRTOS | [GitHub](#)

- Trained day/night segmentation and classification CNNs; reduced nominal mean centering error from 44.40 to 2.04 px (95.4%) versus a fixed camera in CAD-based simulation.
- Integrated both-axis tracking, a co-moving spotlight, optical flow and guarded ESP32 serial control; evaluated 16 scenarios and passed 36 vision tests plus C protocol tests.

Local LLM Inference & Discord Bot

Python | Ollama | SQLite | [GitHub](#)

- Integrated streaming local inference, channel context and embedding-based conversation retrieval; added time-to-first-token and decode-speed instrumentation, model controls and permission checks.

Flesh and Blood Life Tracker

C++ | FreeRTOS | KiCad | [GitHub](#)

- Designed an ESP32-S3 life/resource counter and **70 x 80 mm PCB** with debounced inputs, undo/reset and multiplexed display output; verified game-state/shift-register logic with host tests and separate breadboard connectivity/pin mapping.

EXPERIENCE

Red Bank Sharpening | Founder & Owner

May 2026 - Present

Monmouth County, NJ | [redbanksharpening.com](#)

- Established Red Bank Sharpening as an LLC; manage mobile sharpening bookings, scheduling and the website.
- Used agent systems to manage and scale advertising and plan daily pickup and return routes from customer form requests, with Python/SQLite controls for human-reviewed drafts, duplicate-action prevention and capacity checks.

GRSG Company | Canvasser

Sep 2024 - Nov 2024

Rochester, NY

- Conducted door-to-door voter outreach in Rochester, consistently exceeding expected door-knocking targets.

LEADERSHIP

Vice President | Vintage Electronics and Computers Club (VECC)

Rochester Institute of Technology | Fall 2025

- Demonstrate networking and computing fundamentals in showcases of vintage computers and electronics.