Jay Rao

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EDUCATION

Northwestern University | Evanston, IL — Candidate, June 2028
Bachelor's Degree in Computer Science — Concentration in Artificial Intelligence | Minor in Entrepreneurship

SKILLS

Programming Languages: Python, JavaScript, C, C++, HTML/CSS, MATLAB, Racket
Tools: Office 365, Jupyter Notebook, Onshape, scikit-learn, FastAPI, Docker, React Native, Expo, Render

PROJECTS

Trading Bot | *Python, JavaScript, scikit-learn, XGBoost, FastAPI, Docker, React Native, Expo* — Mar. 2025 - Present

- Building a full-stack algorithmic trading platform in **Python** that trains machine learning models on 10+ years of historical stock data to predict buy/sell signals
- Integrating Polygon.io for historical and real-time data ingestion, and using **scikit-learn** and **XGBoost** to train and update predictive models daily
- Executing automatic paper and live trades through Alpaca API, based on model-generated buy/sell signals
- Architecting a **FastAPI** backend, containerizing with **Docker**, and deploying via **Render** to the cloud
- Developing a cross-platform mobile app using **JavaScript, React Native** and **Expo**, featuring an intuitive UI that allows users to track performance and receive real-time trade alerts

Adaptive Microwave Interface | *MicroPython, Raspberry Pi, Onshape* — Sep. 2024 - Dec. 2024

- Collaborated in a four-person team to design an accessible microwave interface for individuals with special needs at North Center Community Day Service
- Designed and constructed a tactile dial and surrounding food icons using **Onshape**
- Programmed and wired a Raspberry Pi Pico using **MicroPython** to announce selected food options by speaker, indicate the microwave's power through an LED strip, and implement custom start/+10s buttons
- Led **user-centered design** efforts: conducted research, observed client interactions, developed multiple mockups, and coordinated user testing to align the product with client needs

Robot Dog Training | *MATLAB, Simulink* — March. 2024 - May 2024

- Developed a reinforcement learning framework in **MATLAB** and **Simulink** to train two quadruped robot dogs to walk autonomously
- Created a **neural network**-based reward function to optimize gait patterns through simulated trial-and-error learning, ultimately achieving stable physical movement after extensive training

EXPERIENCE

Head Counselor — **Camp Argo** — Jun. 2024 - Aug. 2024

- Supervised and engaged school-aged children of all abilities through games, songs, and activities
- Fostered a safe, supportive environment for all campers under my supervision

VA Ambassador — **U.S Department of Veteran Affairs** — Sep. 2022 - Sep. 2023

- Coordinated transportation for elderly and low-mobility patients to ensure timely medical care
- Supported hospital operations by guiding patients, answering inquiries, and assisting with on-site logistics

LEADERSHIP

Tinkerer | The Garage @ Northwestern University — 2024 - present
Analyst | Northwestern Investment Management Club — 2024 - present
Software Developer | Northwestern Develop + Innovate for Social Change — 2025 - Present
Forward | Northwestern Men's Rugby — 2024 - Present