

# Wadih Pazos

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## EDUCATION

### Carnegie Mellon University

May 2025

B.S. Computer Science | Machine Learning Minor

**Relevant Coursework:** Advanced Deep Learning, Multimodal ML, Generative AI, Deep Reinforcement Learning, Algorithm Design and Analysis, Parallel Computer Architecture and Programming

## WORK EXPERIENCE

### Google

May 2024 – Aug 2024 | Sunnyvale, CA

Software Engineer Intern

- Developed an automated **prompt optimization** algorithm for internal LLM workflows, increasing performance by **10-18%**.
- Researched and implemented state of the art academic papers, including **Adversarial In-Context Learning (Adv-ICL)**.
- Benchmarked algorithm using **Big-Bench** and internal datasets.

### Advanced Optronics

May 2023 – Aug 2023 | Pittsburgh, PA

Software Engineer/Machine Learning Intern

- Engineered UI using React.js and Babylon.js to visualize 3D cochlear implant surgery simulations.
- Created **AWS** scripts to generate **1M+ data point hdf5 datasets** from simulation data, supporting ML model training.
- Trained feed-forward **neural network in TensorFlow** achieving **98% accuracy**, predicting electrode position, and other metrics from strain sensor data, revolutionizing the way surgeons can visualize and anticipate electrode placement during procedures.
- Contributed to securing a **\$650,000** National Science Foundation Convergence Accelerator Phase-1 grant.

### the402 (YC '22 Startup)

May 2022 – Aug 2022 | Miami, FL

Software Engineer Intern

- Worked on a **Web 3.0** content streaming app interacting with the Ethereum blockchain.
- Built smart contracts in Solidity encapsulating logic for publishing, minting, and transacting NFTs.
- Developed browser-based user experience with **React.js and Node.js** and the iOS native experience with **React Native**.
- Identified a need for, designed, and implemented the live streaming capability, leading to **greater platform adoption**.

## UNIVERSITY RESEARCH

### Recursive Vision Language Model (ReVL)

Feb 2024 – present

- Adding Recursive Inductive Bias to Large Visual Language Model to improve desktop control task.
- Fine-tuning the **QwenVL** Open Source Large Visual Language Model.
- Achieved **86%** performance of prior paper with **10%** of the data.

### Reinforcement Learning Car

Oct 2023 – present

- Integrating **DayDreamer** algorithm into remote controlled Raspberry Pi car.
- Deploying as a demonstration of Reinforcement Learning for students of 10-301/601 (Intro to ML).
- Attempting to train optimal agent in under **6 hours**.

## PROJECTS

### Athena

Feb 2024 – present

- Engineered an **autonomous GUI Agent** using **GPT-4o**, **CogAgent VLM**, and PyGUI.
- Integrated the **ScreenAgent** internal control pipeline to execute text instructions with the screen's current state as context.
- Executed short to medium horizon tasks across desktop and browser environments.

### GenStudio

Nov 2023

- Built an **LLM agent** DAW plugin to assist audio engineers in mixing and mastering, with **C++** and **JUCE**.
- Trained **neural network models** for text to effect parameters and leveraged **OpenAI's** Assistant API for planning and
- Integrated **MusicGen** for text-to-music generation, and **Demucs** for stem splitting.
- Accepted for **YCombinator** Interview.

## SKILLS

**Languages:** Python, JavaScript, C/C++, Java, HTML/CSS, LaTeX

**Technologies:** NumPy, PyTorch, Tensorflow, Hugging Face Transformers, SciPy, Sklearn, Pandas, Matplotlib, Weights and Biases, OpenAI API, LangChain, Pinecone, Node.js, React.js, MongoDB, Docker, Git, AWS, Azure, Unix Command Line