Michael Li

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EDUCATION

Carnegie Mellon University *Expected Graduation: May 2026*

- **B.S in Computer Science, Statistics & Machine Learning**
- **Coursework:** Parallel & Sequential Data Structures and Algorithms, Imperative Programming, Functional Programming, Linear Algebra, Discrete Math, Artificial Intelligence, Natural Language Processing, Machine Learning, Probability Theory

SKILLS

- **Languages:** Python, C/C++, Java, Haskell, C#, Javascript, HTML, CSS, SQL, R
- **Frameworks/Libraries/Tools:** React, TypeScript, Flask, TensorFlow, PyTorch, Keras, Django, Node.js, Express.js, PostgreSQL, Docker, Git, Figma, Postman, Postico, Unity

EXPERIENCE

Software Engineering Intern, Epirus *Los Angeles, CA* • June 2024 - August 2024

- Built a modular drone swarm simulation in **Python** with 2D/3D rendering using **Matplotlib** and **OpenGL**, adopted by the mission modeling team for high-fidelity scenario visualizations.
- Developed a reinforcement learning agent using Proximal Policy Optimization (PPO) in PyTorch with custom network architectures, alongside scalable training infrastructure with parallelization, achieving a 10x speed-up in performance.

Software Development Engineering Intern, Beaver Health *Palo Alto, CA* • May 2023 - August 2023

- Developed scalable GPT-4 dialogue framework with **React** and **Typescript** to digitize evidence-based health interventions
- Deployed on **Google App Engine** with **Express.js**, optimizing infrastructure to reduce latency by 30%
- Backed by National Institute on Aging & Harvard Innovation Labs

Researcher, University of Victoria *Remote* • July 2022 - May 2023

- Coded, trained, and evaluated **Temporal Convolutional Networks** (TCN), **CNNs**, and **LSTMs** using **Keras** and **Tensorflow** to predict COVID outcomes based on U.S. county demographic data
- TCN model outperformed the Center for Disease Control's (CDC) ensemble model by a statistically significant difference
- Published findings as first author in the Journal of Global Health

Creator & Software Developer, COVIDCatcher *Pleasanton, CA* • December 2021 – May 2023

- Implemented a low-cost, multimodal ML-based web app to detect COVID-19 symptoms and coughs using **VGG-19** and **XGBoost** with **Python, PyTorch** and **Tensorflow** (over 10,000 lifetime page visits)
- Developed a COVID-19 forecasting dashboard using **React, Flask** and **AWS,** providing real-time data for 3,143 counties in the United States

Software Developer, Amador Valley Robotics (AVBotz) *Pleasanton, CA* • August 2018 – May 2022

- Developed real-time **OpenCV**/**C++** object detection pipelines integrated with **ROS**, improving detection speed by 40%
- Designed **YOLOv5** and **DetNet** workflows using **PyTorch** to automate image annotation (100+ hours of labor saved)

PROJECTS

- **Shipworthy** Engineered a real-time ship simulator using **OpenCV** and **XQuartz**, extracted key data points from video feed to have real steering wheel manipulate physics and movement in Unity.
- **Stance** Created full-stack web application using **Python, Flask, scikit-learn, LIME** to detect online hate speech. Developed an NLP classification model and used Shapley values to provide interpretable classifications.
- **Ad Lunam** Engineered immersive **VR** space exploration game using **C#** and **Unity** with procedurally generated planets and asteroid fields. Implemented physics-based flight mechanics and planetary orbits through extensive scripting.
- **The Roast** Built a daily personalized newsletter generator using **React, Python, Flask** and **PostgreSQL** to automatically curate and summarize content from list of sources.

AWARDS & RECOGNITION

- **Hackathons: Cal Hacks 11.0** 1st Place, **HackItShipIt** 1st Place (Shipworthy), **To the Moon and Hack** 3rd Place (Ad Lunam)**, Data Day Grind** Best Data Visualization (Stance)
- **2021 & 2022 California Science and Engineering Fair Poster Presenter** (COVIDCatcher)
- **2021 & 2022 Alameda County Science and Engineering Fair First Place in Computer Science** (COVIDCatcher)
- **2021 & 2022 United States Open Music Competition Showcase Gold Medalist** (Piano)