

# Michael Chu

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## EDUCATION

### University of California - San Diego

San Diego, CA

*Cognitive Science B.S. w/ Specialization in Machine Learning and Neural Computation  
Computer Science*

Sep. 2023 – Jun 2025

**Relevant Courses:** Artificial Intelligence Algorithms, Supervised Machine Learning, Parallel Computing, Deep Learning, Software Engineering

### University of California - Santa Cruz

Santa Cruz, CA

*Computer Engineering B.S.*

Sep 2021 – Jun 2023

**Relevant Courses:** Data Structures and Algorithms, Computer Systems

## TECHNICAL SKILLS

**Languages:** Python, Javascript, C/C++, HTML, CSS, RISC-V, OpenCL, CUDA, TypeScript

**Frameworks/Libraries:** OpenCL, PyTorch, NumPy, Matplotlib, Torchvision, Express.js

**Developer Tools:** Git, Docker, Jira, Visual Studio Code, Kaggle Datasets

## EXPERIENCE

### Software Development Intern

Mar 2024 – Sep 2024

*FarmX*

*San Rafael, CA*

- Collaborated within a 2-person team to develop a curse-based CLI that reduced robot testing time by 30%
- Implemented a Python script execution CLI for saving output directories, streamlining field testing by 20%
- Developed a Linux background service to parse 100+ line PoE log files, increasing troubleshooting speed by 30%
- Contributed to the early-stage development of a ROS2 node that subscribes to a topic for real-time actions
- Refactored existing ROS2 node logic to optimize subscription speed and reduce latency
- Participated in Agile sprints, including code reviews and feature planning, to enhance collaboration

### E-commerce Software Development Intern

Jun 2023 – Aug 2023

*Tavisdor*

*Shenzhen, China*

- Developed an automated payroll application for 20+ employees, cutting errors by 95% and processing time by 40%
- Built logic for handling pay structures, including overtime, bonuses, and deductions, enhancing efficiency
- Implemented a trade analysis tool for Alibaba Incoterms, optimizing cost efficiency by 20%
- Analyzed web analytics and keyword performance, building a database of 100+ optimized search terms
- Improved product listing visibility, leading to a 50% increase in click-throughs and conversions
- Created structured technical reports on manufacturing processes and operational efficiency improvements

## PROJECTS

### “YOLO Like” Object Detection Model | PyTorch, Torchvision, Kaggle, Deep Learning Jan 2025 – Mar 2025

- Converted 10K+ JSON annotations to YOLO format, filtering for car, traffic sign, and traffic light classes
- Developed a custom PyTorch Dataset class with on-the-fly image resizing (416×416) and augmentation techniques, including horizontal flipping (p=0.5), increasing training data diversity by approximately 50%
- Trained over 5 epochs (12.5K+ batches), reducing average loss from 48.2 to 15.7 (67.4% improvement)
- Visualized predictions vs. ground truth on 50+ validation images, showing box accuracy and classification

### RealMoonLanders | PyTorch, MuJoCo, Agent-based Reinforcement Learning

Jan 2025 – Mar 2025

- Collaborated in a group of 3 to design and implement RL solutions for the HalfCheetah MuJoCo environment
- Developed a customized TD3 reinforcement learning agent that successfully solved the environment
- Built a TD3 backbone from scratch using PyTorch-based Actor-Critic neural network class structures
- Tuned critical hyperparameters to consistently achieve over 8000 reward per training episode

### TritonFit | React, Express.js, MongoDB, Google Auth, Typescript, CSS, Git

Sep 2024 – Dec 2024

- Built a React-based web app from scratch over 8 weeks, progressing through stake holders, design docs, to product
- Collaborated with a team of 5, following Agile methodologies for efficient development and sprint planning
- Created interactive views for 20+ mock users with workout preferences, enhancing navigation and interface clarity
- Developed a scalable backend with Express.js and MongoDB to manage user records and streamline data retrieval