

JONATHAN MA

(510) 364-9318 • jonathanjma03@gmail.com • jonathanjma.com • linkedin.com/in/jonathan-ma3 • github.com/jonathanjma

Passionate CS student with 5+ years of experience in software development. Proven leader and collaborator who is quick to learn new technologies and thrives in dynamic, interdisciplinary environments.

Education

Cornell University, College of Engineering (Ithaca, NY)

Anticipated Graduation December 2025

- Computer Science (BS), GPA: 4.0, Dean's List (4 semesters)
- Selected Coursework: Java & Data Structures, Computer Vision, Machine Learning, Systems Programming, Analysis of Algorithms, Intro to Robotics & Robot Reinforcement Learning (Fall 2024)
- TA for Computer Organization and Systems (C, Assembly) and Functional Programming (OCaml) classes

Technical Skills

- Languages (Proficient): Python, Java, C/C++, JavaScript, TypeScript, HTML/CSS, OCaml, PostgreSQL
- Frameworks: Flask, React, Arduino, ROS, OpenCV, NumPy, Pandas, JavaFX, Flutter, Angular, Firebase
- Tools: Git, Jupyter, Docker, Linux, Bash, PlatformIO, Ansible, Elasticsearch, Kibana, Jira, CI/CD

Experience

Cornell Space Systems Design Studio: Alpha CubeSat Flight Software Co-Lead

Oct 2022 - Present

- Promoted to co-lead (2024) for exemplary performance and taking initiative to learn, leading 5 person team
- Using C++ to build [embedded flight software](#) for CubeSat and light sail payload in Low Earth Orbit
- Developing code for memory constrained embedded systems to interface GPS, IMU, and telemetry
- Conducting extensive hardware-in-the-loop integration tests to ensure mission readiness for April 2025 launch
- Built & deployed [full-stack ground station](#) with intuitive React/Bootstrap control UI, Elasticsearch/Kibana dashboards for mission critical telemetry data, and Nginx reverse proxy
- Converted backend from Clojure to Python Flask to improve maintainability, achieving 40% code reduction

RTX Collins Aerospace: Systems Engineering Intern (SEPP)

Summer 2024

- Collaborated with group of highly-selective interns to conduct research studies with Raspberry Pi fleet utilizing Ansible & Wireshark and extended 50K line open-source C++ codebase to support network persistency
- Evaluated feasibility of heterogeneous Information Centric Routing over IP using Named Data Networking
- Presented and demoed final work to 500+ audience of interns, managers, and executives

Johns Hopkins University Applied Physics Lab: Ground Software Engineering Intern

Summer 2023

- Led team of interns through design/creation of Angular and Java EE based web app for parsing spacecraft command and telemetry packets for NASA's IMAP and Dragonfly missions, used by 50+ employees
- Applied Agile methodologies and solicited feedback from project leads throughout project duration
- Utilized Playwright to automate system tests + improve reliability for dept. wide app used by 400+ employees

CognoTrain, Inc: Software Engineering Intern

Summer 2022

- Pioneered patent pending cognitive training app to improve memory of Alzheimer's patients in startup setting
- Utilized Flutter to build a personalized & accessible app, APIs to securely integrate backend user data and login

First Tech Challenge Robotics Team #7303: Robot Automation Lead

Aug 2019 - June 2022

- Won Maryland Tech Invite out of top 32 teams globally, Control Award for most innovative control/automation
- Collaborated with team to implement OpenCV object detection, odometry localization, FSMs, & PIDF control
- Created JavaFX simulator for path planning and replaying robot actions for testing without robot hardware

Programming Projects

- [Happiness App](#), Social journaling app for users to track their mood and connect with friends. Created Flask, SQLAlchemy & PostgreSQL backend REST API, React & Tailwind frontend UI (100+ users)
 - Implemented end-to-end encryption, token-based auth, Redis job queue, comprehensive unit tests/docs
- [Rubik's Cube Solving Robot](#), Arduino powered robot optimized to solve a Rubik's Cube in 3-4 seconds
- [Infinite Campus Grades++](#) (JS, HTML), Chrome extension to revamp high school grades UI (4K users)
- [Breadboard Simulator](#) (Python), 2020 Silicon Valley Hackathon: Best Beginner Hack (out of 60 projects)