

JONATHAN MA

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Passionate CS student with 5+ years of experience in software development and strong interest in engineering complex systems. Proven leader and collaborator who is a fast learner and thrives in dynamic, interdisciplinary environments.

Education

Cornell University, College of Engineering (Ithaca, NY)

Master of Engineering, Computer Science

Anticipated December 2026

Bachelor of Science, Computer Science (GPA 3.99, Dean's List)

Anticipated May 2026

- Selected Coursework: Computer Vision, Machine Learning, Systems/OS Programming, Algorithms
- TA for Computer Organization and Systems (C, Assembly), OCaml Programming, and Intro to Robotics classes

Technical Skills

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

Experience

SpaceX: Software Engineering Intern (Starshield)

Summer 2025

- Architected multi-system flight software and ground topology solution to deconflict satellite operations
- Organized design review and collaborated with 10+ stakeholders across teams to develop robust solution + tests
- Overhauled satellite integration and testing Python script to increase modularity and testability, taking ownership to drastically reduce risk for critical path test campaign while saving 1000s of engineering hours

Cornell Space Systems Design Studio: Alpha CubeSat Software Lead

Oct 2022 - Present

- Promoted to lead of 5 person team after 2 yrs for exemplary performance and initiative to learn/solve problems
- 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 with GPS, IMU, and telemetry
- Conducting extensive hardware-in-the-loop integration tests to ensure mission readiness for Sept 2025 launch
- Built and 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

Johns Hopkins University Applied Physics Lab: Software Engineering Intern

Summer 2023

- Led team of interns through design and 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 and improve reliability for dept wide app used by 400+ employees

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 and C powered robot optimized to solve Rubik's Cube in 3-4 seconds
 - Created OpenCV pipeline to scan cube and generate custom Rubik's cube mosaic art
- [Windows-iOS Clipboard](#), Universal clipboard to copy/paste text and files between different operating systems, uses Firebase stack for REST API & database and Python/iOS clients