# Teja Koduru

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## EDUCATION

**University of Michigan** — Ann Arbor, MI
*Computer Engineering - Math - Aerospace Engineering | GPA 3.9, Dean's List* — *Expected 2026*

**Thomas Jefferson High School for Science and Technology** — Alexandria, VA
*U.S Presidential Scholar '23 | 1600 SAT | 36 ACT | 4.4/4.0 GPA*

## WORK EXPERIENCE

**MIT** — May 2025 - Present
*Software Intern | Lincoln Labs* — *Boston, MA*
- Developing C and ROS-based software suite to track occluded vehicles by predicting future trajectories; implemented real-time path prediction tools, sensor data fusion, and asynchronous message handling.
- Building a C-based software suite to actively control the polarization of light in optical systems, with real-time data collection, storage, and analysis through SQL and React; applications in fiber-optic comms, imaging, and sensing.

**SpaceX** — January 2025 - May 2025
*Software Intern | Falcon 9* — *Hawthorne, CA*
- Shipped a new frontend feature to an internal Angular + TypeScript dashboard; leveraged REST APIs and Redux for efficient state management & Jest for testing, leading to 1k+ visits in 2 days across 25+ teams and 3 vehicles
- Built an automated RF mask updater with JavaScript + Python using signal reflection mapping; integrated with AWS S3 and Lambda for scalable data processing and reduced error rate by 20%.
- Designed and deployed a Raspberry Pi-based monitoring network; implemented image analysis and alerting pipeline with Python and OpenCV; deployed via Docker with Grafana for live dashboards.
- Created a post-flight data review tool using SQL, Python, and React, highlighting 6 critical issues with ground stations over 2 months

**Kitware** — June 2024 - September 2024
*Software Intern* — *Greensboro, NC*
- Designed novel, highly accurate (> 93%) computer vision pipeline for the Air Force Research Laboratory, utilizing vision transformer models and sklearn to identify threats in long-range, low-resolution imagery (< 100px x 100px).
- Introduced first-of-its-kind system to automate data gathering for internal projects by using segment anything models in conjunction with a custom image classifier based on OpenAI's CLIP, saving > $10k in webscraper fees.

## ADDITIONAL EXPERIENCES

**M-Fly - Autonomous Systems Director** | *Michigan AUVSI SUAS Team* — August 2023 – Present
- Oversee the hardware and software teams for UMich's autonomous plane team, redesigned hardware system.
- Written 10+ scripts with ROS, CPP, and Python, including those for autonomous control, custom computer vision pipelines with a 95% accuracy rating, and 3 new intro training tutorials for new members

**MASA - Avionics Project Lead** | *Michigan Aeronautical Science Association* — August 2023 – Present
- Designed 3 custom PCBs for UMich's rocketry team, including a fight data recorder and live camera feed. Taught 10+ new members about PCB design and firmware development
- Developed embedded firmware in C/C++ for STM32 microcontrollers; implemented I2C/SPI protocols and state machines for telemetry, with unit tests and version control in Git.

**LATTICE - Researcher** | *UAS Research Laboratory* — August 2023 - Present
- Modeled multi-agent path-planning as a k-armed bandits problem; implemented with Python and NumPy, and benchmarked against baseline algorithms to improve flight efficiency by 20%; Paper submitted to AIAA

## TECHNICAL SKILLS

**Languages**: Python, Java, C++, C, Rust, TypeScript, SQL, JavaScript, MATLAB, Verilog, Node.js
**Frameworks & Tools**: React.js, Angular, Flask, Express.js, Next.js, Docker, Git, ROS, Firebase, MongoDB
**Cloud/Infra**: AWS (EC2, S3, Lambda), GCP, Linux, Terraform, Kubernetes, CI/CD