Jacob Mukobi

jmukobi@stanford.edu • LinkedIn • GitHub • 360.440.7271

Education

Stanford University, Aero/Astro M.S. (Sept. 2024 – Jun. 2025), Aero/Astro B.S. (Sept. 2020 – Jun. 2024)

Experience

Zipline, South San Francisco, CA

Safety Systems Engineer October 2024 – Present

- Define system-level requirements and lead technical development of cameras used for preflight checks of delivery drones, analyzing risk and creating mitigation strategies for an at-scale drone delivery system.

Starfish Space, Seattle, WA

Propulsion and Space Robotics Engineering Intern June 2024 – Sept 2024

- Designed xenon thruster routing system including architectural design, selecting 14 fluidic components, detailed CAD design, transient analysis, vendor coordination for $100,000+ of products, and procurement.
- Developed deployment mechanisms for articulating boom with detailed mechanical design in CAD, prototyping, analysis/simulation of static and dynamic stress, thermal, vacuum, radiation environments.

Systems Engineering Intern June 2022 – Sept 2022

- Architected 12 different boom-mounted thruster concepts and conducted trade studies to maximize ROI during satellite servicing missions, considering performance and mass.
- Created a satellite power model, used to plan the Otter Pup mission, successfully launched in 2023.
- Developed relative sun vector visualization tool for Monte Carlo simulations in satellite docking missions.

Coactum Space, Bex, Switzerland

Systems Engineering Intern June 2023 – Sept 2023

- Designed bipropellant vacuum engine routing system including architectural design, selecting 45 fluidic components, vendor coordination, and procurement.
- Created and maintained orbital transfer vehicle system budgets (power, link, mass, data).

Stanford Plasma Dynamics Modeling Lab, Stanford, CA

Research Intern June 2021 – Sept 2021

- Created multidimensional Poisson's equation solvers to calculate the electric field inside hall thrusters.
- Developed and analyzed particle-in-cell simulation models to better understand cross-field electron diffusion due to the coupling of drift-driven microinstabilities in hall thrusters.

Projects

Stanford Student Space Initiative Satellites Team Lead, Stanford, CA Sept 2020 – June 2024

- Led the system design and integration and built structures, electrical, and software for Sapling 1 and 2, 1U Earth-observing CubeSats, Stanford's first entirely undergraduate-built satellites, successfully launched in 2023.
- Managed team logistics including coordinating launches, sponsor relations, university faculty relations, $100,000+ team budget, new student recruiting and onboarding, project delegation, community-building, and conflict resolution.

Skills

- **Software:** Solidworks, NX, Ansys, Fusion 360, Inventor Pro, Onshape, STK, FreeFlyer
- **Programming:** Python, MATLAB, C/C++, HTML, CSS
- **Fabrication:** CNC mill, 3D printer, composite layup, lathe, milling machine, waterjet