

# MOKSH SHAH

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## Education

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- Texas A&M University**, College Station, Texas May 2027
- Bachelor of Science in Aerospace Engineering, Minor in **Computer Science** GPA: **3.96**
  - Relevant Skills: Python | C++ | ROS 2 | Git | Linux | Jira | MATLAB | NASA Trick | Systems Engineering
  - Relevant Coursework: Data Structures and Algorithms, Digital Electronics, Linear Algebra, OOP

## Technical Experience

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**NASA/CACI** May 2025 – Aug 2025

*Modeling and Simulation Intern*

- Modeled the Trace Contaminant Control System in the Artemis Gateway IHAB module using GUNNS and NASA Trick Software to simulate removal of 5+ hazardous cabin air compounds over time.
- Resolved 25+ errors from Python input data files and C++ source/header files by tracing code, debugging segmentation faults, invalid pointers, memory leaks, and logic bugs to stabilize the simulation.
- Collaborated in an **Agile GitLab workflow environment in Linux** working with advanced source control features, using **Jira and CI/CD pipeline** for asynchronous software development.
- Analyzed 100,000+ simulation data points using Python and Excel, determining 94% contaminant removal efficiency meeting vendor requirements.

**SpaceCRAFT VR Lab - Texas A&M Dept. of Aerospace Engineering** Jan 2026 – Present

*AI/ML Developer*

- Developed reinforcement learning pipelines by integrating NVIDIA Cosmos simulation environments with ROS2-based robotic systems for end-to-end policy training.
- Built scalable data generation workflows producing ~50,000 synthetic simulation samples for training and validating autonomous control models.
- Implemented and optimized machine learning training pipelines in Python (NumPy, PyTorch), improving convergence speed and policy stability by ~25%.

**Mars Autonomous Rover Competition** Sept 2025 – Dec 2025

*GNC Software Engineer – project team member*

- Developed ROS2-based autonomous navigation architecture in Python for a simulated Mars rover in SpaceTeams PRO, traversing waypoints across hazardous terrain and dynamic environmental conditions.
- Implemented global path planning with the Held-Karp algorithm, reducing total traversal distance by 18% compared to baseline waypoint sequencing, integrating D\* Lite for local obstacle avoidance.
- Designed and built a multi-node ROS2 system (7 nodes) for navigation and control, enabling real-time communication between planning algorithms and actuator command execution.
- Led GNC software development by defining system architecture, creating codebase structure, and implementing navigation logic for waypoint tracking and adaptive rerouting.

## Leadership Experience

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**NASA L'Space Mission Concept Academy** May 2024 – Aug 2024

*Team Lead for Team Luna*

- Managed a science team of 4 within an 11-member simulated NASA mission, using Notion as a project management platform to monitor task ownership and ensure on-time completion of deliverables.
- Translated the mission Request for Proposal into 9 actionable Science Objectives, then deriving 12 quantifiable functional Payload Subsystem requirements with appropriate traceability and V&V methods.
- Delegated weekly tasks to 4 subteam members, carefully balancing workloads, aligning assignments with individual interests, and mediating interpersonal conflicts to maintain team cohesion.