

SANTHOSH SANKAR

(734) 846-5255 | ssankar@umich.edu | [Linkedin: https://www.linkedin.com/in/santhosh-sankar-3241521b8/](https://www.linkedin.com/in/santhosh-sankar-3241521b8/)

Citizen of The United States of America

Education

University of Michigan, Ann Arbor

August 2021- August 2024

Bachelor of Engineering - Aerospace Engineering Major

Relevant courses: Aerodynamics, Spacecraft Dynamics, Model-based Systems Engineering, Propulsion, Controls of Systems

Western Michigan University

August 2021- August 2022

Bachelor of Engineering - Aerospace Engineering Major

- Placed on the Dean's List

Experience

CubeSat Flight Lab – University of Michigan

August 2023 - August 2024

Systems Engineer

- Designed, built, tested, and launched Michigan's next research spacecraft carrying out 3 different research experiments, working alongside a class of 36 interdisciplinary majors.
- Created a series of 6 prototypes such as FlatSats and StratoSats to integrate Quad Magnetometers and Organic Photo Voltaic cells using the Systems V design process to prove the viability and feasibility of the Michigan Cubed 10 Spacecraft.
- Integrated a Raspberry Pi-based flight computer and payloads with an in-house EPS system to be mounted onto the 3D-printed structure for StratoSat Prototypes.
- Conducted detailed testing and integration of Communications, Ground Station, GPS, and Structures.
- Incorporated a Ground Plane for GPS to reduce system noise and receive a GPS lock on our patch antenna.
- Created Project Timelines, Risk Management documents, Gantt charts, and Interface Control documents.
- Developed a Flight Termination Unit for High-Altitude Balloon Flights to ensure mission safety and recovery.
- Designed a Flight Termination unit using an RP2040 microcontroller, LoRa SX1276, and a u-blox NEO-M9N GPS module to track and command flight termination.

Human Powered Submarine – University of Michigan

August 2023 – July 2024

- Built, tested, and innovated a human-powered submarine to compete at the European International Submarine Race in Gosport, England in June of 2024.
- Designed and sourced parts with the Propulsion team to CAD an efficient and powerful propeller for the pedal-based propulsion design including the addition and creation of a tensioner for easy access to calibrate the timing belt which optimized the efficiency of the propeller.
- Manufactured numerous components by Mill and fiberglass layups to ensure the engine blocks fit properly for ease of access underwater as well as to ensure moving components are not affected by environmental change.

Michigan Aeronautical Science Association (MASA) – University of Michigan

- Developed MASA's largest collegiate liquid bi-propellant rocket, Clementine, and solid rocket project, Lonely Mission.

Marketing Sub-Team Lead

April 2023 – June 2023

- Developed 20 creative posts of content over 4 social media platforms (LinkedIn, X, Instagram, Facebook, YouTube) including video resources for MASA to increase awareness of our team for sponsorships and recruiting outreach.
- Resulted in 130% increase in LinkedIn views, 305% increase in Facebook, 46.9% increase in Instagram, and 18% increase for X.

Aerodynamics and Recovery Sub-Team Lead

November 2022 – April 2023

- Responsible for all aerodynamic analysis and recovery of Clementine.
- MBSE developed of a solid rocket technology demonstrator, Lonely Mission, as an R&D project for use of Rollersons to reduce the failure point of roll coupling in future liquid rockets within the Tangerine Space Machine series of liquid rockets.

Project lead for Fins, Separation Deployment, Composites

April 2022 – November 2022

- Directed a complete redesign of the Separation Deployment mechanism from a pyrotechnic system to a pneumatic system to deploy chutes to reduce safety calculation uncertainty and reduce the risk of creating fractures and stresses in the fiberglass composite airframe.
- Ran simulations using in-house MATLAB-developed software, Mastran, as well as simulations in FEA, Open Rocket, and CFD to determine fin and fin can design to ensure aerodynamic stability and determine launch radius.
- Completed production of fins and fin can using laser cutters, mills, lathes, and lead over 10 composite fiberglass layups.
- Leak-checked fluid systems on the assembly, test, and launch operation team during cold flows to ensure proper and safe fuel distribution throughout the system.

Skills

- Familiar software: Siemens Star CCM and NX, Solid Works, MATLAB and Simulink by Mathworks, MS Office, Python (micropython and circuitpython), and C/C++
- Technical proficiency includes hands-on experience with milling, laser cutting, and lathe operations, as well as expertise in CAD design and various applications of composite layups, acquired through collaboration with diverse project teams.
- Ability to work with large teams with good communication, collaboration, and leadership skills