Karis Hu

U.S. Citizen ♦ karishu@umich.edu ♦ Ann Arbor, MI ♦ https://www.linkedin.com/in/karis-hu ♦ Cell: 512-757-6868

Education

University of Michigan at Ann Arbor April 2026
Aerospace Engineering, B.S.E GPA 3.927

Professional Experience

University of Michigan Robotics Department ***May 2023 – present***
Engineering 100: Robotics Mechanisms Instructional Assistant ***August 2023 - present***

- Managed laboratory equipment and operations including electromechanical system assembly and debugging
- Currently developing an entry-level avionics lab that introduces students to basic sensing and control principles

University of Michigan & Air Force Research Laboratory Research Assistant ***May 2023 - present***

- Planned, revised, and integrated an automated system to accurately detect minute pressure differentials generated in a wind tunnel environment, testing airflow patterns around subsonic airfoils for a quadrotor biplane tail-sitter vehicle
- Developing a custom flight controller for a compound wing and multi-rotor configuration for cruise-to-hover transitions by integrating inertial and pressure-based flow sensing modules over serial communication

University of Michigan Summer Undergraduate Research in Engineering ***May 2023 - August 2023***
Aerospace Engineering Intern

- Supported development of trajectory optimization and vehicular kinematics coursework by conducting literature review/preliminary studies of CARLA autonomous vehicle simulations and validation

NASA STEM Enhancement in Earth Science Program, Austin, TX ***June 2020 - August 2020***
Research Intern

- Ground-truthed 36 sites to evaluate land cover composition in established satellite blind spots, leading to publication in *Frontiers in Climate* and topical eBook *Open Citizen Science Data and Methods*

Project Experience

Michigan Aeronautical Science Association, Aerodynamics and Recovery Subteam ***September 2022 - present***
Composites Project Lead, Aerodynamics and Recovery System ***May 2023 - present***

- Performed trade-studies and cost analyses of composite procedures to eliminate weaknesses in the layup procedures, ensuring aerodynamic efficiency in generating a Von Karman Ogive nose cone and reducing approximate costs by 35%

DEI and Outreach Chair ***April 2023 - present***

- Coordinated plans with faculty and organizational leads to address constructive advice regarding team culture and revamped the reporting infrastructure to ensure a supportive working environment
- Organized and led outreach efforts to spur K-12 interest in MASA and in the University of Michigan, offering tours and remaining in contact with high school rocketry teams to answer lingering questions
- Acted as a point of contact with internationally-recognized organizations, including the Society of Women Engineers (SWE), Women of Aeronautics and Astronautics (WAA), and the National Society of Black Engineers (NSBE)

Clementine Rocket Launch Personnel ***April 2023 - May 2023***

- Amassed intricate knowledge regarding the assembly and operation of Clementine, the most powerful collegiate liquid bipropellant rocket ever launched in the U.S., cultivating an understanding of systematic interactions throughout the rocket
- Ensured the smooth progression of the launch procedure within a week-long timeline as a hand-picked member of the crew

Black Powder Recovery Project Lead, Aerodynamics and Recovery Subteam ***January 2023 - April 2023***

- Executed and compiled months of testing and separation mechanism designs, validating shearing calculations to develop a black powder recovery system capable of shearing 6 shear pins with a minimum operating force of 68 lbf per pin at an altitude of 10,000 feet above ground level

UARTS FEAST Program, Evaluating Invasive Species and Determining Tree Cover ***June 2022 - present***
Logistical Coordinator and Member

- Performed extensive research on conducting forest spectral imagery via RGB, multispectral, and hyperspectral sensors
- Determined nominal specifications for UAV mechanical design, construction, and flight to achieve validation of ground-truthing in a wetland environment

---

Skills

- *Software*: Siemens NX, ANSYS, Microsoft Word, PowerPoint, Excel
- *Software Languages:* C, C++, Python, MATLAB, Arduino
- *Hardware*: Arduino UNO, Arduino Leonardo, Arduino MEGA, ESP32, Arduino Teensy
- *Languages:* English (Fluent), Mandarin (Proficient)

Honors, Awards, Scholarships and Other Related Experience

- 2023 Tau Beta Pi Electee
- 2022 & 2023 Women of AT&T Austin Scholarship Recipient
- 2022 & 2023 Dean's Honor List Student - University of Michigan
- 2022 Branstrom Freshman Prize Recipient - University of Michigan