

Joshua Jordan Kraus

Location: Bridgewater, NJ 08807 | **Phone:** (732)-515-1549 | **Email:** jik226@lehigh.edu | **Portfolio:** Joshuakraus.com
Citizenship: U.S. | **Willing to relocate** to CA/TX/FL/WA/AL | **Full-time** onsite availability May - Aug 2026

EDUCATION

Lehigh University, Bethlehem, Pennsylvania

Bachelor of Science in Integrated Engineering and Social Sciences (Graduation: May 2027)

GPA: 3.91

Honors: Integrated Engineering Arts and Science Honors Program (IDEAS); Dean's list: All Semesters

PROJECTS

Autonomous Emergency Thermal High Elevation Reconnaissance Drone ("AETHER") –

Personal/Student Project

May 2024 - Present

- Developed a reconnaissance UAV capable of streaming optical and thermal data to firefighters in the field.
- Designed Beyond Visual Line of Sight avionics architecture. Built a 3G/4G LTE enabled and encrypted control system. Integrated computers via UART. Developed a low cost thermal & optical payload using Open CV.
- Recruited and managed a team of 4 student engineers. Consulted with avionics/UAV subject matter experts and first responders to maximize real-world utility and project scope/feasibility (e.g. cost, engineering, timelines).
- Awarded Lehigh University research grant by developing a proof-of-concept vehicle and authoring a detailed basis of design, engineering requirements, timeline, and funding proposal.
- Obtained FAA Part 107 Remote Pilot certification to enable test flights in controlled airspace.

Robotic Surveyor Dog – Lead Payload Engineer, Lehigh Rocketry Team

Feb 2025 - Present

- Developing a 12-DOF robotic quadruped "LAIKA" and fiberglass-composite launch vehicle payload bay.
- Fabricating 40+ components in a manufacturing environment for sensor integration & deployment hardware.
- Refined ROS2 control loops in Python. Bench testing payload state estimators & gathering kinetic data.
- Performing load factor verification of payload bay structures and components via experimental analysis and FEA (NX, Fusion 360). Defining payload & bay factors of safety and tuning design based on real world outcomes.

Piezoelectric Cryogenic Swimmer – Lead Systems Engineer,

NASA L'SPACE Proposal Writing and Evaluation Experience Academy

May 2025 - Present

- Co-authored a technical proposal for an undulation-propelled swimming drone capable of navigating and exploring Titan's low density cryogenic methane seas.
- Collaborated with Subject Matter Experts in robotics, swarm simulation, piezoelectrics, and cryogenic testing.
- Completed a 14 Week virtual NASA workforce development program in researching, writing and evaluating technical proposals in response to solicitation.
- Served as Chair and as a Secondary Reviewer on a NASA panel, evaluating solicitation responses. Applied formal procurement rubrics to ensure traceable, protest-resilient scoring and evaluation.

WORK EXPERIENCE

Teaching Assistant – Department of Engineering, Lehigh University

Aug 2024 - Present

- Administering introductory Raspberry Pi and Python-based mechatronics labs weekly for 80+ students.
(Moving to a head TA position beginning August 2025)

Student Consultant – Department of Engineering, Lehigh University

June 2025 - Present

- Developing an engineering module and accompanying project to teach first year students practices of solicitation response, design intent, fabrication, open programming, and project management approaches.

Tutor – Department of Chemistry, Lehigh University

Dec 2023 - May 2024

- Tutored Inorganic Chemistry for various STEM majors in individual and group sessions.

SKILLS & CERTIFICATIONS

Computer Aided Design – Proficient in Siemens NX and Fusion 360.

Programming – Proficient in Python, Java, ROS2, Git, Github, Unix, Raspbian.

Technical Writing – Proposals, Engineering Documentation, Engineering Feasibility, Grants; LaTeX proficient.

Leadership and Team Management – PI, Lead Engineer, Project Manager, Team Care and Internal Communication.

Fabrication Skills – 3D Printing, CNC Milling, Composite Layup, Laser Cutting, Water Jet, Soldering, Circuitry.

Certifications – NASA Open Science 101, FAA 107 Remote Pilot, National Association of Rocketry HPR Level 1, Siemens NX Xcelerator Associate (expected Sep 2025), FAA Private Pilot (expected Jun 2026).