David Krupp

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Education

University of Georgia Athens, GA
Master of Science: Engineering - Electromechanical Systems Emphasis May 2026
Bachelor of Science: Mechanical Engineering, GPA: 3.5 May 2025

Honors and Accomplishments: 2025 UGA CURO Symposium Best Research Design/Presentation Award (publication in progress), Passed Fundamentals of Engineering Exam; Qualifying for the Engineer-in-Training Certification, Gulfstream Dan Nale Scholarship Recipient (2021-2025), University of Georgia Research Grant; studying Neural Radience Field (NeRF) satellite system integration.

Professional Experience

University of Georgia Athens, GA
Mission Specialist - Center for Geospatial Research May 2025 - August 2025

- Operated as the primary contact between the Small Satellite Research Lab, Center for Geospatial Research, and the Regenerative Bioscience Center at the University of Georgia in designing NeuroCube, our NASA-backed space biology experiment.
- Designed the main bodies of the experimental platform and the 6U CubeSat platform that will carry and control the setup in Low Earth Orbit.
- Designed and fabricated a 3D Clinostat to support early microgravity testing of neuronal cultures while simultaneously performing calcium imaging (more in Projects section).

GE Vernova Atlanta, GA
Analytics Intern May 2024 – August 2024

- Created Python programming responsible for GE gas-powered turbines' performance and safe operation.
- Maintained outdated code/software that triggers alarms in response to unusual combustion chamber behaviors, i.e., significant pressure, temperature, or thrust fluctuations.
- Developed code that monitors oscillating vibrations within turbines and flags the unit for a shutdown if such vibrations exceed value and persistence tolerances.
- Completed numerous pieces of training in industry standards, code standards/format, data science techniques, and Python-specific packages and extensions.

Gulfstream Aerospace Savannah, GA
Innovation, Engineering, and Flight Co-Op January 2022 – May 2023

- Operated as a Flight Test Engineer within the instrumentation team, designing mechanical components that assist in the production and test of experimental aircraft, and overseeing the fabrication of designs through means of additive manufacturing and in-house machine shop.
- Researched alternative methods of flyover noise data collection for the FAA; designed multiple assemblies and oversaw equipment manufacturing used in the updated process.
- Completed various training courses/certifications, including CATIA v5, SmarTeam, Sheet Metal Design, Tubing Design, Manufacturability, and Lean Six Sigma.
- Partnered with multi-disciplinary teams to deliver prototypes within tight deadlines, ensuring adherence to Gulfstream’s industry standards and performance metrics.

Leadership & Extracurricular

UGA Small Satellite Research Lab Athens, GA
Research & Development Team Lead November 2023 – Present

- Designed the instrumentation and experimental setup for a miniaturized LiDAR satellite (12U) similar to NASA's ICEsat-2 in functionality, intended to monitor the health of coastal wetlands.
- Created a new Neural Radiance Field (NeRF) variant tailored to Satellite mission applications. This variant improves output quality while maintaining a low calculation threshold; publication is pending.
- Led the R&D Team's main research focuses and proposal targets, assigned tasks, and maintained membership organization.

NASA L'SPACE
Proposal Writing and Evaluation Experience Academy (NPWEE)

- Led the propulsion team in formulating a new concept for small satellite electrospray ion thrusters for Earth Orbit payload transfer.

Skills & Interests

Technical: Highly proficient in CATIA v5, SolidWorks, SpaceClaim, Python, and MATLAB. Somewhat proficient in Inventor, Ansys CFD, and FreeFlyer.
Language: Fluent in English, Basic understanding of Spanish and Italian.
Laboratory: Research experience under Dr. Deepak Mishra of the Center for Geospatial Research at the University of Georgia. Research topics primarily involve neural radiance fields (NeRF) and how models may be integrated onboard satellite missions and contribute to remote sensing applications on Earth and abroad.
Interests: Satellite and spacecraft design, state-of-the-art aerospace propulsion systems, remote sensing techniques, and additive manufacturing processes.

Projects

3D Clinostat Design: Designed and fabricated a tabletop 3D Clinostat (Microstat) for microgravity experimentation using standard off-the-shelf mechanical and electronics components. Once the final product took shape, all documentation, code, components, and processes were made open-source and posted to GitHub. You may access everything here: https://github.com/david-a-krupp/3D-Microstat
Space-Rated BioChamber Design: Designed and prototyped a small (13 x 13 x 8 cm) biological enclosure for cell culture housing in Low Earth Orbit. This project is related to the broader NeuroCube mission taken on my the Small Satellite Research lab and includes a 2D gantry system design for moving a Miniscope (LFOV) around the BioChamber for observing 25 individual cell cultures.