

Eli Lewis

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EDUCATION

University of Illinois at Urbana-Champaign

August 2023 - May 2027

Bachelor of Science in Aerospace Engineering — Minor in Astronomy

GPA: 4.00/4.00

Relevant Coursework: Orbital Mechanics, Aircraft Flight Mechanics, Spacecraft Rendezvous and Proximity Operations

Academic Honors: State Farm National Merit Scholarship, Engineering Visionary Scholarship, Dean's List (5 Semesters)

EXPERIENCE

Draper

Jan 2026 - June 2026

GNC Engineer Co-op

Cambridge, MA

- Co-developed Draper's in-house 6DOF GNC Simulink framework supporting air and space vehicle programs, implementing modular vehicle dynamics, actuator models, and sensor suites
- Created and validated various control schemes to improve vehicle performance and ensure mission success
- Synthesized control algorithms for non-linear flight regimes, optimizing for response time and maneuverability through iterative refinement
- Built high-fidelity vehicle dynamics models in MATLAB and Simulink to evaluate architecture performance and define system-level control requirements
- Architected Monte Carlo simulations to characterize component performance, deriving system-level GNC requirements

Scientific Machine Learning Reliability Research — Dept. of Aerospace Engineering

Jan 2025 – Dec 2025

Undergraduate Research Assistant

Champaign, IL

- Built and trained neural networks using PyTorch to output a prediction reliability metric for detecting anomalous data
- Integrated Soft-Checksums with uncertainty quantification to enhance reliability in critical engineering applications
- Evaluated detection effectiveness on various scientific regression problems; fabricated 2D toy dataset to visualize method
- Developed a composite loss function combining prediction accuracy and Soft-Checksum penalties to improve model calibration under distributional shift

City of Bloomington

May 2025 – August 2025

Engineering Intern

Bloomington, IL

- Developed the 2027 road resurfacing plans, detailing scope, material requirements, and utility coordination
- Created a city-wide crash report database in Microsoft Access to centralize historical crash data for all intersections

ACTIVITIES

Liquid Rocketry at Illinois

Aug 2024 – May 2025

Controls Sub-Team Lead

Champaign, IL

- Directed an interdisciplinary team in GNC software in Python and Simulink to regulate rocket roll rate
- Designed control surfaces to improve rocket stability and control authority
- Automated CFD workflow in ANSYS Fluent with Python, improving simulation repeatability and accuracy

Illinois Electric Motorsport (Formula SAE)

Aug 2023 – May 2024

Aerodynamics Team Member

Champaign, IL

- Created meshes of aerodynamic and structural parts in Star-CCM+; applied refinement tools to improve accuracy of mesh and CFD simulations
- Performed CFD sweeps in Star-CCM+ of diffuser designs; extrapolated results to determine optimal angle and sizing

SKILLS

Programming Languages: Python, PyTorch, MATLAB

Software & Tools: Simulink, ANSYS Fluent, Star-CCM+/CFD, Siemens NX, Creo, Microsoft Office

Technical Skills: Guidance Navigation and Control, Data Analysis, Systems Engineering, Machine Learning