

Liam Robinson

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EDUCATION

Purdue University – West Lafayette, IN	Jan 2024 – Present
PhD Aeronautics and Astronautics – 4.0 GPA	Jan 2023 – Dec 2023
MS Aeronautics and Astronautics – 4.0 GPA	Aug 2019 – Dec 2022

EMPLOYMENT

Space Information Dynamics Group – NDSEG Fellow & Graduate Research Assistant	Oct 2021 – Present
• Designing novel space object characterization algorithms with Dr. Carolin Frueh's Space Information Dynamics group, estimating shape and orientation of human-made space objects from unresolved optical observations	
• Introduced new light curve inversion algorithms to estimate non-convex shapes and complex spin profiles	
• Collaborated with PhD students on relative pose estimation and filter design for attitude estimation	
• Primary operator of the Purdue Optical Ground Station telescope for optical image collection and processing	
Astronomical Institute, University of Bern, Switzerland – Visiting PhD Student	May 2024 – Aug 2024
• Worked with Dr. Thomas Schildknecht's group on image acquisition and processing for satellite characterization	
The Aerospace Corporation – Graduate Astrodynamics Intern	May 2023 – Aug 2023
• Designed novel cis-lunar formation flight strategies for quasi-periodic orbits in the CR3BP	
Katalyst Space Technologies – Guidance, Navigation, and Control Intern	May 2022 – Aug 2022
• Architected trade study framework for early subsystem validation of novel on-orbit servicing concept	
Analytical Graphics, Inc. – Systems Engineering Intern	Jan 2021 – May 2021
• Supported 130 engineers in academia, government, and the defense industry with mission analysis in STK and ODTK	

AWARDS & FELLOWSHIPS

• Best graduate presentation – <i>Purdue Aeronautics and Astronautics Symposium</i>	2025
• National Defense Science and Engineering Graduate Fellowship (NDSEG) - \$142,000	2023
• NSF Graduate Research Fellowship (GRFP) - \$111,000	2023
• NASA National Space Technology Graduate Research Opportunity Fellowship (NSTGRO) - \$150,000	2023
• Third place graduate presentation – <i>Purdue Aeronautics and Astronautics Symposium</i>	2023
• Best research talk, interdisciplinary research – <i>Undergraduate Research Conference</i>	2022
• Best undergraduate presentation – <i>Purdue Aeronautics and Astronautics Symposium</i>	2022

SELECTED FIRST-AUTHOR PUBLICATIONS

- L. Robinson & C. Frueh, "A CCD/CMOS Telescope Digital Twin for Space Situational Awareness", In: Advances in Space Research, 2025
- L. Robinson & C. Frueh, "Optimal Light Curve Attitude Inversion with Measurement Noise: Two Case Studies", In: Proceedings of the 9th European Conference on Space Debris, 2025
- L. Robinson, "Light Curve Simulation and Shape Inversion for Human-Made Space Objects", Master's Thesis, 2023
- L. Robinson & C. Frueh, "Light Curve Inversion for Reliable Shape Reconstruction of Human-Made Space Objects", In: Proceedings of the 32nd AIAA/AAS Astrodynamics Specialist Conference, 2022

RELEVANT EXPERIENCE

Founder of Boilerexams.com	Nov 2019 – Present
• Developed website used by ~10,000 Purdue students per semester to study for exams in 20 STEM courses	
• Built and managed team of 50, providing students studying insights with 9,400,000 questions studied to date	
• Interfaced with the College of Engineering administrators, Vice Provosts, and members of Board of Trustees	

TECHNICAL SKILLS

Algorithms: Single/multi-target Kalman filters, batch estimation, catalog association, optical photometry/astrometry
Languages: Python, C/C++, Rust, MATLAB, SQL, GLSL | **Technologies:** Git, Linux, Sphinx, Polars, Docker