Casey Keymolen

South Bend, IN | (847) 971–2058 | caseykeymo@gmail.com | LinkedIn

Noise & Vibration Engineer | Aerospace Engineering | Artificial Intelligence

Vehicle NVH testing and analysis, aircraft design, controls, and hands-on fabrication. AIAA-winning team lead and aerospace engineering graduate pursuing an M.Eng. in Artificial Intelligence.

PROFESSIONAL EXPERIENCE

International Motors | Noise & Vibration (NVH) Engineer Aug 2026–Present
New Carlisle, IN

- Conduct interior and pass-by noise testing at the company's vehicle proving grounds.
- Analyze interior and pass-by NVH data using Siemens Simcenter Testlab Neo.
- Use microphones, binaural microphone headsets, accelerometers, tachometers, and CAN data.

University of Illinois Urbana-Champaign | AE 353 Course Assistant Fall 2025

- Guided students in aerospace control theory, system modeling, and MATLAB-based simulation.
- Held office hours, graded assignments, and supported in-class learning activities.

Audio Visual One | AV Technician / Part-Time Manager May 2020–July 2026

- Configured and troubleshot audiovisual systems for live events under tight deadlines.
- Worked directly with customers to meet event requirements and handled management duties as needed.

Campus Ink | Student Sales & Merchandise Designer 2023–2026

- Translated customer ideas into merchandise designs and coordinated orders to ensure quality.

ENGINEERING PROJECTS & RESEARCH

Kestrel Aircraft Design | Team Lead, Monkey's Fist 2025–2026

- **Won 1st place in the 2025–2026 AIAA Undergraduate Team Aircraft Design Competition.**
- Led an eight-person team; delegated technical work, set deadlines, and integrated design reports.
- Coordinated aircraft configuration, tail-sizing tradeoffs, and certification requirements across disciplines.

UIUC Astronaut VR Research | Primary Simulation Developer, AE 298 Spring 2026

- Built the primary Unity simulation and integrated Meta Quest hardware for immersive astronaut scenarios.
- Simulated extreme spacecraft events to support research on astronaut stress and emergency response.
- Confirmed coauthor on a research manuscript in preparation for submission.

Experimental Vibration & Modal Analysis | AE 461 Spring 2026

- Conducted shaker and roving impact-hammer tests at 17 locations using a Spider analyzer and EDM-Modal.
- Analyzed frequency response functions; identified five modes from 24–1,379 Hz and damping below 1%.

Autonomous Payload Delivery | AE 483 Fall 2025

- Developed a Crazyflie payload-delivery project with A* path planning and Qualisys motion capture.
- Applied feedback control and obstacle-clearance constraints to indoor drone navigation.

EDUCATION

University of Illinois Chicago Expected July 2028
Master of Engineering in Artificial Intelligence — in progress

University of Illinois Urbana-Champaign 2026
B.S. in Aerospace Engineering, Grainger College of Engineering

TECHNICAL SKILLS & PROFESSIONAL DEVELOPMENT

Programming: Python (NumPy, SciPy, pandas, Matplotlib), MATLAB, Jupyter, Excel
VR Development: Unity, Meta Quest integration, immersive emergency simulations
Testing & Analysis: Interior/pass-by noise testing, modal analysis, frequency response, feedback control
Design & Manufacturing: Siemens NX, CAD, 3D printing, CNC fabrication, mass properties
Siemens Training: Acoustic and Sound Quality Seminar — in progress, September 2026
Class A CDL School: Scheduled September 21–October 9, 2026
Certification: Google Cybersecurity Professional Certificate

LEADERSHIP & INVOLVEMENT

Illini Network Technologies (INet) Robotics | Vice President — Undergraduate leadership

- Led mechanical prototyping and CAD design reviews; supported member training and robotics testing.

Society of Hispanic Professional Engineers (SHPE) | Technical Team & Outreach