

Joshua Gibson

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EDUCATION

University of Alabama in Huntsville

- *Bachelor of Science in Embedded Systems Engineering* | GPA: 3.6/4.0 | Graduation: May 2026
- Dean's List x3, President's List x1, UAH Merit Scholar, Alpha Pi Mu Honor Society
- American Legion Scholar, Alpha Lambda Delta Honor Society, Boeing Business Scholar

University of Alabama in Huntsville

- *Master of Science in Systems Engineering & Engineering Management* | Graduation: August 2026
- JUMP Program Participant, Beacon Fellowship Nominee, UAH Merit Scholar

TECHNICAL SKILLS

- **Programming & CAD:** Python (OpenCV, NumPy, Pandas, QT5), C++, MATLAB, Fusion 360, Catia V5, NX
- **Tools:** Keras, ROS Noetic, Simulink, Siemen's Teamcenter, G-Suite, Atlassian Tool Suite (Git, Jenkins, Jira)
- **Systems Modeling:** Systems Modeling Language (MagicDraw, Groovy), Unified Modeling Language (UML)
- **Specialties:** Prototype Design, Model-based Systems Engineering, R&D, Embedded Software Engineering

WORK EXPERIENCE

Aerospace Systems Engineering Intern

May 2024 – Present | Full Time | *Mission Driven Research Inc.*

- Spearheaded software & systems engineering efforts (8 engineers involved) for unmanned aerial vehicle prototypes.
- Applied Failure Mode & Effects Analysis (FMEA) methodologies to identify and mitigate potential failure modes in networking and software systems, resulting in a 30% improvement in UAV reliability and operational safety.
- Engineered a communication subsystem for a tethered drone using robot operating system (ROS Noetic), enabling the motor to autonomously reel the tether in or out based on real-time telemetry data sent from the UAV.
- Developed flight control software & embedded software for UAV prototypes and ran simulations using ROS Noetic to confirm the accuracy of flight dynamics and performance algorithms of 3 UAVs before conducting field testing.
- Utilized MBSE principals to effectively map system interfaces and interactions, streamlining the integration process and reducing the risk of interface conflicts by 20%.

Undergraduate Research Assistant IV, S1 Rotorcraft

November 2023 – Present | Part Time | *Autonomous Aerospace Research (A2R RSESC)*

- Provided product lifecycle management (PLM) support to Boeing through collaboration with 20 A2R employees from Huntsville and 20 contractors from Houston, while employed by the University of Alabama in Huntsville.
- Collaborated with mechanical & electrical sub teams to define requirements for C-17 Globemaster III components.
- Converted technical drawings made by Boeing's engineers into 2D and 3D CAD models using Catia V5, achieving the highest completion rate among UAH personnel for 4 out of 6 of the assigned technical drawings.
- Identified error rates of ~30% on Boeing's ECAD models through cross-referencing with Siemen's Teamcenter.

Optical Systems Engineering Intern

July 2023 – December 2023 | Part Time | *GoCheck Kids*

- Led design prototyping (4 engineers involved) for projects involving standalone photo screener models.
 - Created optical systems for 4 prototypes through collaboration with electrical & mechanical sub teams.
 - Solved challenges involving pupil constraint through implementing attachable filters to prototypes capable of adjusting the wavelengths of projected light, resulting in a 50% reduction in pupil dilation.
 - Optimized and automated crescent measurement process by developing Python scripts to evaluate images and assign Ametropia values, resulting in a 90% reduction in the time required to perform calculations.
 - Conducted Failure Modes & Effects Analysis (FMEA) on key components of prototypes, identifying critical vulnerabilities and implementing design improvements that increased system reliability by 25%.
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