BEN HALAMBECK

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EDUCATION

Virginia Tech GPA: 3.75
Bachelor of Science in Aerospace Engineering, Focus: Vehicle and Systems Design Obtained May 2025
Master of Science in Business Administration (MSBA) Expected May 2026

EXPERIENCE

Spacecraft Development - Engineering Intern, True Anomaly May 2025 – Present

- Built a custom data processing tool to clean and restructure raw DAQ output, enabling magnitudes greater fidelity of analysis for the Structures team.
- Reduced data processing time by 40% through automation, improving turnaround for mission-critical decisions.
- Designed and fabricated mechanical components now integrated into operational spacecraft.
- Performed test article vibration table setups: instrumentation planning, hardware integration, and test analysis.
- Executed enveloped stress analysis for two missions to validate design safety margins for major defense program's critical design review.

R&D Engineering Intern, Collins Aerospace May 2024 – Aug 2024

- Led the validation of aerospace-grade components using SolidWorks, additive manufacturing, and FEA.
- Assisted with system integration, calibration, and test rig setup in an R&D hardware environment.
- Created test planning reviews and structural configuration discussions with cross-functional teams.

Mechanical Engineering, BWX Technologies Jan 2023 – May 2023

- Designed mechanical tooling and fixtures for manufacturing of nuclear reactor components under rigorous QA/QC standards.
- Conducted FEA simulations in ANSYS and SolidWorks Simulation to validate thermal and structural behavior of welded and machined components.
- Created detailed technical drawings and process documentation for fabrication and inspection teams.

RESEARCH & PROJECT LEADERSHIP

Air Vehicle Design Team Lead, Virginia Tech 2024-2025

- Led a 9-member interdisciplinary team for the Homeland Defense Interceptor RFP.
- Oversaw concept development, design integration, and performance optimization within budget constraints.
- Delivered technical reviews, trade studies, and MATLAB-based propulsion, flight, and structural analysis.

Supersonic Wing Circulation Control - Team Lead, Senior Capstone, Virginia Tech 2024–2025

- Designed and executed wind tunnel tests to study discrete normal injection on an airfoil at Mach 1.75.
- Built an instrumented test rig with strain gauges for high-speed force and pressure data collection.
- Conducted structural stress analysis, sensor calibration, and flow regime characterization.

Algorithmic Drone Design Optimization Team Lead 2024–2025

- Built evolutionary and STD algorithms to identify optimal drone configurations.
- Analyzed performance tradeoffs between noise, energy, range, and payload.

TECHNICAL SKILLS

Software & Tools: MATLAB, Python, SolidWorks, LabVIEW, NI DAQ, OpenVSP, SQL, Microsoft 365, ANSYS, SolidWorks Simulation, Spark, LaTeX, Excel, C++, NASTRAN

Technical Domains: Propulsion Systems, Systems Integration, Structures Testing, FEA, DAQ Instrumentation, Thermal Analysis, Flight Simulation, High-Speed Aerodynamics, Cost Optimization, Project Management, Data Analysis, ML (intermediate) **Relevant Coursework:** Aerothermo Propulsion, Experimental Methods, Engineering Design Optimization,
Air Vehicle Design, Special Topics in Propulsion, Aerospace Structures