

LUKE R. HORTON

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EDUCATION

Aerospace Engineering, B.S. | San Diego State University **Aug. 2022 - May 2026**

- **Coursework:** Aerospace Structural Dynamics, Aerospace Structural Mechanics and Materials, Spacecraft Attitude Dynamics and Control, Rocket and Space Propulsion, Feedback Flight Control, Aircraft Stability and Control, Astrodynamics, Aircraft Propulsion Systems, Low and High Speed Aerodynamics, Programming and Numerical Methods in Aerospace
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EXPERIENCE

Ground Effect Vehicle (GEV) **San Diego State University, Senior Design**

Project Manager (Avionics & Systems Lead) *Spring 2026*

- Managing a 4-person team building an RC-scale GEV prototype with 3D-printed airframe, FX 63-137 high-lift airfoil, and a distributed 4-motor propulsion system to capture in- vs. out-of-ground-effect performance data (speed, ride height, power). Project documented at barrelborne.co
- Owned avionics integration as Systems Lead: configured a Pixhawk 6C flight controller running ArduPilot Plane firmware, mapped 5 servo channels through a PM07 power module, integrated a TFmini-S lidar for terrain-following altitude hold, and validated the full system in SITL (Software In The Loop) simulation before hardware testing.

Next-Generation Carrier-Based Strike Fighter **San Diego State University, Senior Capstone**

Performance Lead & Systems Engineer *Fall 2025 - Spring 2026*

- Led performance and test-planning analysis for a conceptual Navy carrier-based strike fighter: translated mission/carrier requirements into verification-style metrics, owned weight estimation, wing sizing, and takeoff/landing analyses, and coordinated with subsystem leads to deliver technical memos.
- Built and validated physics-based sizing/performance models (drag polar, T/W–W/S trades, takeoff/landing constraint sets), ran structured parametric sweeps and sensitivity checks to quantify carrier-suitability margins and drive configuration trade decisions.

SDSU Rocket Project **San Diego State University**

External Structures Engineer *Fall 2023 - Fall 2024*

- Performed structural analysis and iterative testing on rocket launch lugs, refining SolidWorks CAD/drawings for manufacturability and subsystem integration while collaborating in cross-team design reviews to meet structural and schedule constraints.

DMG Corporation **San Diego, CA**

Inside Sales Engineer Intern *Sept. 2025 - Present*

- Provide operational support to outside sales engineers by generating quotes, securing vendor pricing, processing sales orders and POs, coordinating with manufacturers, and communicating status updates.

San Diego Sales Engineers (NSSE) **San Diego State University**

President *Fall 2025 - Present*

- Led networking events and technical workshops; competed at NSEC 2024 and won the 2025 National Sales Engineering Conference (NSEC) competition.
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PERSONAL PROJECTS

Software & Web Development *2025 - Present*

- Built a real-time multiplayer mobile app (React Native, Firebase), a portfolio website (HTML/CSS/JS, GitHub Pages), and a remote server dashboard (Node.js) on a DigitalOcean VPS.

Stage Fabrication Projects *Fall 2022 & Fall 2023*

- Co-designed and fabricated custom event stages, including an 800 lb welded steel stage (SolidWorks, MIG/TIG) and a 700 ft² modular system with interchangeable components.
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LEADERSHIP

President, Kappa Alpha Order *2024*

- Led a 170+ member chapter, directing an executive board and 20+ chairs while managing a \$200K+ budget and chapter operations; earned IFC Most Improved Chapter (2024) for measurable gains in membership, engagement, and overall performance.
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SKILLS

CAD & Design: SolidWorks, GD&T, Design for Manufacturability, Rapid Prototyping

Simulation & Analysis: ANSYS, NX Nastran (FEA), MATLAB, Simulink, XFLR5, ArduPilot SITL

Programming & Automation: Python, Git/GitHub, HTML/CSS/JS, React Native, Node.js, Firebase, Bash/CLI

Documentation & Tools: LaTeX, Bluebeam Revu, Microsoft Office Suite, Google Suite

Manufacturing & Fabrication: 3D Printing, welding, machining, woodworking, prototype build & assembly