

Cormac J. Herbert

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EDUCATION

University of Southern California — Viterbi School of Engineering

Los Angeles, CA

B.S. in Aerospace Engineering • GPA: 3.06

Expected May 2028

- **Class standing:** Rising senior for Summer 2027; returning to USC for senior year afterward.
- **Relevant coursework:** Statics; Mechanics of Materials & Structures; Materials Science; Computational Methods in Engineering; Flight Mechanics; Physics I–III (Mechanics, Thermodynamics, E&M).

TECHNICAL EXPERIENCE

USC Rocket Propulsion Lab • Team Member

Jan 2025 – Present

Student-built rocketry team

Los Angeles, CA

- Design and detail rocket flight-hardware components in **Siemens NX**, producing fabrication-ready engineering drawings for the build team.
- Fabricate and modify parts using manual machining and shop power tools, iterating on fit and tolerance through build and integration.
- Size components against expected structural loads with first-principles hand calculations in MATLAB and Excel.

USC Aero Design Team • CAD Designer & Team Member

Sep 2024 – Dec 2024

Student competition aircraft

Los Angeles, CA

- Modeled aircraft structural components in **Onshape** and **Autodesk** for a student competition airframe.
- Fabricated carbon-composite structures (layout and finishing) and machined parts using shop tools.
- Supported aerodynamic analysis in MATLAB and validated design assumptions through wind-tunnel testing.

ENGINEERING PROJECTS

“Borealis” — Arctic STOL Twin-Turboprop • Conceptual Aircraft Design

Spring 2026

5-person team, AME 261, USC Viterbi

- Designed a 14 CFR Part 23-compliant twin-turboprop STOL aircraft with a 5-person team, meeting every RFP constraint including a ≤ 500 ft takeoff/landing over a 50 ft obstacle and 450 nmi range.
- Led fuselage geometry and the full-aircraft drag buildup from first principles (Reynolds-based skin friction, $Re \approx 1.3 \times 10^8$), yielding a parasite-drag coefficient of 0.0064 and a maximum L/D of 31.5.
- Built a MATLAB longitudinal stability model (neutral point, static margin, elevator trim) validated against a DC-8 baseline, and constructed the V-n diagram bounding the $+3.8/-1.5$ g structural envelope.

“Phoenix” — Glider Design & Flight-Test Campaign

Fall 2024

6-person team, USC Viterbi

- Designed and fabricated a 1.21 m-wingspan glider (NACA 6415, AR 5.63) to maximize range from a fixed-height launch.
- Executed a 7-flight instrumented test campaign, achieving a 29.5 m maximum range and an experimental $(L/D)_{\max}$ of 16.9.
- Traced a $2\times$ parasite-drag over-prediction by reconciling flight data against a MATLAB drag-buildup model, then iterated ballast and trim between launches to correct flight-path deviation.

LEADERSHIP & INITIATIVE

Pleasanton Quality Windows • Co-Founder

May 2026 – Present

Self-started residential services business

East Bay, CA

- Co-founded a door-to-door exterior-services business with two partners; sourced equipment, produced marketing materials, and delivered hands-on manual services (power washing, gutter and window cleaning) to local clients.

TECHNICAL SKILLS

CAD & Drafting: SolidWorks (CSWA certified), Siemens NX, Onshape, Autodesk, engineering drawings & drafting standards

Analysis & Test: MATLAB, statics / structural analysis, aerodynamic analysis, hardware test planning, wind-tunnel testing

Fabrication: precision machining, power tools, carbon-composite layout, 3D printing, soldering, electronics & sensor integration (motors, controllers, sensors)

Programming: Python, MATLAB, Robot C, Microsoft Excel

CERTIFICATIONS

SOLIDWORKS Certified Associate (CSWA) • **Google AI Essentials Specialization**