# Kalei Chesney

Aerospace Engineer | Spacecraft Systems, Integration & Test | Verification & Validation
Palm Beach Gardens, FL · Open to Relocation · US & UK Citizen

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MEng aerospace engineer with hands-on experience in spacecraft systems, structural design, hardware integration, environmental testing, verification, mission analysis, and cross-functional project delivery. Led multidisciplinary engineering activities for a 1U CubeSat, with the project's research continuing through four accepted papers for the International Astronautical Congress (IAC) 2026. Focused on spacecraft systems, integration, test, verification, and the development of future space missions.

## ENGINEERING PROJECTS

**Green CubeSat Structure Design (GECo CubeSat)** — *Project Manager | Manufacturing & Testing Co-Lead | Sustainability Lead*
2024–2025 | Research continuing 2026

- Led 1U CubeSat structural development across requirements, design, manufacturing, hardware integration, verification, environmental testing, and technical documentation.
- Developed and executed structural verification activities including NASA GEVS random vibration testing, dimensional/deployer-fit verification, vacuum outgassing testing, and analytical-to-test correlation. Evaluated requirements against the ESA Vega-C launch environment.
- Led SOLIDWORKS CAD designs, ANSYS structural/thermal analysis, and ISO 14040/14044 life cycle assessment. Authored test procedures, acceptance criteria, and requirements traceability documentation.
- This research continues in 2026 through four accepted papers for IAC 2026, spanning sustainable spacecraft design, life cycle assessment, materials and manufacturing, and structural testing. Presenting the research at IAC 2026 in Antalya, Türkiye.

**Lunar Science Satellite** — *Mission Design Engineer* 2023 - 2024

- Designed lunar transfer trajectories in GMAT. Performed delta-V and mission trade studies and documented mission architecture and performance analysis, within a concurrent engineering design team.

**Human Factors in Women's Spaceflight** — *Independent Research* 2023 - 2024

- Investigated physiological, psychosocial, and organisational factors affecting women in spaceflight and implications for long-duration mission design, crew performance, and human-systems integration.

**Quad-Copter Design Project** — *Flight Systems Engineer* 2022 - 2023

- Designed and analyzed a 3-axis stabilized gimbal within mass and mechanical constraints. Evaluated stability, weight, and rigidity trade-offs and supported subsystem integration and assembly validation.

## PROFESSIONAL EXPERIENCE

**Project Coordinator**, Remote — *Dauntless Agency* MAY 2026 - Present

- Coordinate seven parallel workstreams on an enterprise transformation program for a North American infrastructure-services client, supporting delivery across executive, product, integration, infrastructure, and internal and external teams.
- Led operational user research and analysis of 45+ interviews, translating findings into a standardized operational model used to inform product strategy.
- Own weekly program governance reporting, consolidating status, RAID items, and change control for executive stakeholders, and produce client-facing documentation and presentations.

## EDUCATION

**University of Southampton**
Southampton, UK (2021 - 2025)
MEng Aeronautical and Astronautical Engineering, with Spacecraft Design
Grade: 2:1 | GPA equivalent: 3.6 / 4.0

## TECHNICAL SKILLS

**Verification & Testing:**

- NASA GEVS Random Vibration Testing
- Thermal Vacuum(TVAC) treatment
- Vacuum Outgassing / TML Verification
- Dimensional Compliance & Deployer Fit Checks
- Acceptance Criteria Definition
- Verification Matrix Development
- Requirements Traceability
- Hardware Integration
- Test Procedure Development

**Structural & Mechanical:**

- Dimensional & Tolerance Analysis
- GD&T Application
- Hardware Configuration Control
- Structural Deformation Analysis
- Launch Load Consideration & Equivalent Static Loads

**Engineering Tools:**

- ANSYS (FEA)
- SOLIDWORKS (CAD)
- MATLAB & Python
- GMAT
- Excel & Microsoft Office
- AI scripting, prompting, & coding

**Standards & Methods:**

- NASA GEVS (GSFC-STD-7000A)
- ESA SSMS Vega-C Launch Environment
- ISO 14040 / ISO 14044 LCA Framework
- TRACI Environmental Impact Assessment

## AWARDS & EXTRACURRICULAR

**Santander Just Transition Award** (2025) GECo CubeSat Design.
**International Volunteer Team Leader:** Coordinated teams across Romania, Ireland, the UK, and Florida.
**Rowing Athlete:** Competed in county and national regattas.