

Alexander R. Saltmarsh

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EDUCATION

Stanford University

M.S. in Aeronautics & Astronautics, Dept. of Aeronautics & Astronautics

GPA: 4.00

09/25 - 03/27

University of California, San Diego

B.S. in Aerospace Engineering, Dept. of Mech. & Aero. Engineering

GPA: 3.94

09/21 - 06/25

SKILLS

- **Design & Analysis:** Creo Parametric & Simulate, Siemens NX & Fibersim, ANSYS, SolidWorks, Fusion 360, CAD, DFM
- **Computational Tools:** MATLAB & Simulink, Python (data processing & automation), CFD, Nuclear Reactor Simulation
- **Manufacturing & Lab:** GD&T, Manual & CNC Machining, MIG Welding, Waterjetting, Composites, SCUBA Certified

EXPERIENCE

General Atomics Aeronautical Systems, *Aerostructures Design Yearly Intern*

06/24 - 08/25

- Redesigned the MQ-9B "SkyGuardian" UAV engine bay structure, delivering full fireproof sealing and FAA compliance while simplifying metallic interfaces to improve manufacturability
- Designed and fabricated a composite panel fixture for lightning strike qualification testing of MQ-9B access panels
- Produced 25 PTC Creo engineering drawings to ASME Y14.5 GD&T standards and authored release packages, expediting production of 10 new components including a housing unit for the ground communications radar on the MQ-9B
- Partnered with manufacturing and quality teams to prototype and iteratively improve structural designs using additive technologies, accelerating hardware availability and test capability for critical rework projects

General Atomics Aeronautical Systems, *Quality Engineering Intern*

06/23 - 09/23

- Optimized composite fastener placement on the MQ-9B "SkyGuardian" UAV airframe, eliminating a recurring defect source and improving the airframe manufacturing process (resulted in increased first-pass yield)
- Reorganized the system integration workflow on MQ-9B electro-explosive de-icing system, preventing wire punctures and preserving FAA certifiability
- Conducted root-cause failure analyses on scrapped components and recommended process improvements which successfully reduced rework time and scrap rates

National Security Innovation Network, *Project Management Intern*

06/22 - 09/22

- Coordinated defense modernization projects (F-35 mission systems, F-16 international logistics, C-37 digital twins) by aligning USAF Contracting Officers and industry partners on scheduled deliverables and project milestones
- Spearheaded startup outreach for U.S. Navy autonomous inspection robotics program, responsible for sourcing 5 finalists
- Acted as liaison for 5 South Pacific projects, facilitating communication between federal clients and contractors

RESEARCH

Dr. Prasad Gudem's Aerodynamics Lab, *Student Researcher*

01/23 - 05/25

- Led a 2-person sub-team studying wingtip configurations and their effect on boomerang flight trajectory and layover
- Prototyped flight hardware, wrote closed-loop flight simulation algorithms in MATLAB, designed and performed in-the-loop testing with hardware and sensors (IMU) for data acquisition of flight trajectories
- Processed flight data with MATLAB and Python, improving trajectory models and using data review to find key aero trends
- Created and modified test sequences, analyzed the resultant data, used these test results to improve flight hardware

NASA L'SPACE Academy, *Flight Vehicle Systems Researcher*

09/23 - 12/23

- Researched zero-G additive manufacturing in Low Earth Orbit, wrote a NASA technology readiness report using my findings
- Produced a design proposal for a deployable satellite with additive capabilities, placed 2nd in NASA's proposal competition

PROJECTS

UCSD Rocket Propulsion Laboratory, *Structural Engineering Lead*

09/22 - 06/25

- Designed and welded a propulsion test stand, used stand to test a liquid bipropellant rocket to assess engine performance
- Provided technical support to 7 students working on structural projects, taught manufacturing skills in the machine shop
- Designed and constructed the thrust chamber assembly for UCSD's "M" class rocket, launched and recovered the rocket
- Created a variable thrust chamber design capable of housing "M" through "Q" class motors

UCSD Human Powered Submarine, *Hull Construction*

09/21 - 06/23

- Created external fiberglass structure of a racing submarine via molds and layups, raced in the 2024 NAVSEA submarine race