

Ava Alton

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EDUCATION

Saint Louis University

Bachelor of Science in Aerospace Engineering, Minor in Anthropology

St. Louis, MO

Aug. 2023 – May 2027

TECHNICAL EXPERIENCE/PROJECTS

Undergraduate Research Assistant

Project BALEEN

August 2024 – Present

Saint Louis University

- Designed a 3D-printable airframe and high-pressure electronics enclosure rated up to 80 meters; conducted controlled flow-rate field and lab testing of microplastic particles to optimize BALEEN filter intake geometry.
- Developed a space vehicle proposal adapting CleanCurrent for extraterrestrial ocean exploration, specifically modeling vehicle viability for biomarker and microorganism detection in the subsurface seas of Jupiter's moon, Europa.
- Analyzed structural design approaches and specialized manufacturing techniques required to sustain extreme aquatic and extraterrestrial environments, establishing a proof-of-concept framework for future space missions.

Chief Engineer

NOVA: SLU Rocket Propulsion Lab

August 2025 – May 2026

Saint Louis University

- Led a multidisciplinary engineering team in the design, development, and research of a high-performance vehicle evaluating additive manufacturing viability for future aerospace systems.
- Spearheaded structural design for a 38-inch airframe, achieving over 90 percent in-house 3D-printed and custom-manufactured components while strategically integrating minimal off-the-shelf housing to guarantee seamless avionics telemetry.
- Performed flight trajectory simulations verifying a projected apogee of 5,920 feet while maintaining full compliance with strict NASA safety and structural requirements.

Payload Lead

Starlance: SLU Rocket Propulsion Lab

August 2024 – June 2025

Saint Louis University

- Led the payload sub-team through a nine-month development timeline, overseeing design, manufacturing, and integration for a 12-foot high-power rocket powered by a custom M-class SRAD motor.
- Engineered a 4.4-lb Seebeck-effect recovery payload using Peltier modules to harvest waste heat, establishing a proof-of-concept for extending avionics battery life in flight.
- Performed extensive structural analysis to optimize vehicle stability and target a precise apogee of 10,000 feet.
- Achieved 4th place in the SRAD category following a successful launch to 9,597 feet and full recovery; verified post-mission structural integrity to maintain immediate flight-ready status.

Boeing Mentee

Partnered with employee to view insights of the field of engineering. Attended workshops to strengthen resume, interview process and post graduate life.

November 2023- May 2024

PUBLICATIONS

Project CleanCurrent: <https://www.slsc.org/join-give/newscience/>

Saint Louis Science Center Magazine (pp. 6–7) Featured research detailing microplastic mitigation in St. Louis County waterways and autonomous underwater vehicle (AUV) design.

GroundBreaker: <https://doi.org/10.2514/6.2025-1094>

AIAA Aerospace Sciences Meeting Paper. Published research paper detailing scientific payload development and atmospheric sampling results.

CERTIFICATIONS

Level 1 High Propulsion Rocket

International Traffic in Arms Regulations

November 2023

October 2024