

Aadam Awad

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EDUCATION

Columbia University – B.S. Mechanical Engineering; Minors in Aerospace and Computer Science, 3.7 GPA May 2026

RELEVANT EXPERIENCE

Rockets Co-Lead – Columbia Space Initiative Rockets Mission, New York, NY June 2025 – Present
Leading an undergraduate team of 60 students to build and launch a LOX-Paraffin hybrid rocket to 50,000 ft.

Fluids Design Engineering Intern – Blue Origin, Kent, WA May 2025 – August 2025
New Glenn Second Stage (GS2) ambient Helium system design and analysis.

- Implemented design-for-test fluids upgrades, reducing GS2 build by 1 week and saving \$1m per vehicle.
- Utilized ASME Y14.5 GD&T to release tubing, weldment manifolds, and sheet metal components.
- Designed conceptual fluids routes in Creo Parametric for an upgraded GS2.
- Developed first-principles analysis for flight brackets, implemented at-rate solutions for GS2 production.

Propulsion Fluids Co-Lead – Columbia Space Initiative Rockets Mission, New York, NY June 2023 – June 2025
Designed, manufactured, and launched a liquid oxygen feed system and nitrogen pressurization system in a single year. First U.S. student-led team to launch a LOX-Paraffin hybrid rocket, responsible for all propulsion system analysis and integrated vehicle performance. Previously developed and launched two Nitrous-Paraffin fluid systems.

- Built three custom coaxial and poppet-style cryogenic high pressure valves for liquid and gaseous oxygen.
- Developed numerical hybrid simulation package in Python, including compressible flow analysis, shifting CG, and chemical equilibrium analysis of fuel regression used to parameterize the 2024-25 LOX-paraffin motor.
- Fluid system design and analysis for a 4,350 psi nitrogen regulated pressure system and 700 psi pilot lines.
- 6061-T6 aluminum weld qualification for cryogenic pressure vessels, demonstrated 2.25x burst factor.
- On console for all fluids testing in 2023, 2024, 2025; enabled rapid iterative development and high test cadence.

Propulsion Intern – Astranis Space Technologies, San Francisco, CA May – August 2024
• Responsible engineer for geostationary satellite pressurant system, performed trade studies for lifetime optimization, designed and procured components, and ensured SSCMAN 91-710 compliance.
• Developed product lifecycle management, orbital tube welding DFM, and CAD skills.
• Designed and executed acceptance tests for steady-state and transient flow in monopropellant flow components.

ADDITIONAL EXPERIENCE

Aerospace Program Co-Lead – Columbia Engineering, New York, NY May 2025 – Present
Leading the student development for an aerospace engineering program at Columbia through direct collaboration with Professor Mike Massimino and engineering leadership. Supported adding four new courses for Fall 2025: Propulsion, Spaceflight Mechanics, Foundations of Aerospace Engineering, and Aerospace Engineering Design.

Superuser – Columbia Makerspace, New York, NY February 2024 – Present
Responsible for operation, tooling, and maintenance of a Haas ST-20Y 4-axis lathe and Haas 3-axis Mini Mill.

Entrepreneur – Ubix LLC, San Diego, CA January 2021 – September 2023
Founded and operated an e-commerce app. The Ubix platform provided a rental marketplace for students.

PROJECTS

High-Powered Rocket

Max apogee of 3200' recorded. Certified NAR Level 1 and 2. Custom fiberglass airframe and avionics test platform.

SKILLS

Design: Creo Parametric, SolidWorks, Fusion 360, ASME Y14.5 GD&T

Simulation and Analysis: Ansys Fluent, SolidWorks FEA

Manufacturing: 4-axis and 3-axis CNC machining, Fusion 360 CAM, Waterjet, Laser cutter, 3D Printing

Coding: Python, MATLAB, C, Java, Swift, HTML