

Liam Smith

l.smith@columbia.edu | (404)-698-0410 | linkedin.com/in/liam-smith-766926305

Education

Columbia University - School of Engineering and Applied Sciences

Bachelor of Science - Mechanical Engineering

Expected May 2028 | GPA: 3.5/4.0

Projects

Micro-G NExT EVA Tool Design Competition

Sept. 2024 - June 2025

- Collaborated with an interdisciplinary team of ~15 people to design and manufacture a mechanical tool for orientation-preserving lunar regolith sampling as a part of NASA's Micro-G NExT EVA Tool Competition.
- Led the design of critical subcomponents and managed Solidworks file systems, ensuring integration of disparate components within the tool's main base for successful function under diverse operating conditions.
- Co-authored a selected proposal (1 of 6 teams selected), designed the basis of a testing plan executed in the National Buoyancy Laboratory, conducted compliance analysis to satisfy NASA requirements.
- Presented final design to NASA engineers and industry specialists and executed a finalized testing plan at the NBL with positive feedback to verify design and manufacturing choices.

Columbia Space Initiative CubeSAT

Jan. 2025 - Present

- Designed and rapidly prototyped deployable mechanisms and satellite housings in collaboration with external teams to ensure a successful satellite launch and deployment on May 1st, 2026, including antenna integration.
- Coordinated with CalPoly Pomona's Pleiades mission to keep structural components updated with latest overarching design changes and complete FCC- and NASA-compliant launch license documentation.
- Conducting thermal analyses using SOLIDWORKS, AutoCAD, and Ansys Thermal Desktop.

AIAA Design-Build-Fly Competition

Sept. 2024 - Present

- Conducting aerodynamic stability studies and CFD using SOLIDWORKS and MIT/Mark Drela's AVL software to describe aircraft stability, drag, and flight characteristics for a design report ranked 14th/112.
- Designing and prototyping wheel fairings and landing gear for 2026 competition plane, using Hyperworks CFD and SOLIDWORKS FEA to optimize strength, drag, and mass characteristics.

NASA Gateways to Blue Skies Forum

Sept. 2024 - June 2025

- Co-authored a NASA-selected (1 of 8 teams out of ~60) research proposal in the context of the NASA Gateways to Blue Skies Forum research and proposal challenge, regarding UAV- and AI-based solutions for sustainable pest control in agriculture, proposing a fully integrated solution based on pheromones.
- Presented technical and operational section to NASA and industry leaders, awarded \$9,000 for selection.

Skills

Language: English(Native), German(Native), French(B2)

CAD/CAE: SOLIDWORKS, Fusion 360, Onshape, AutoCAD

Programming: Python, Java, MATLAB, Raspberry Pi

Simulation: CFD(Fluent, Altair Hyperworks, MIT AVL, SOLIDWORKS), FEA(SOLIDWORKS), Thermal Analysis(ANSYS Thermal Desktop)

Manufacturing: 3D-Printing, Waterjet, Lasercutter, Soldering, Metalwork, Woodwork

Norms and Regulatory: GD&T, NASA Debris Assessment Software, Documentation, FCC

Leadership and Community Engagement

Columbia Student Council Engineering Student Groups Representative

Oct. 2025 - Present

Columbia Space Initiative Communications Chair

Apr. 2025 - Present

ASME Columbia Chapter Sophomore Class Representative

May 2025 - Present

Columbia Space Initiative Safety Officer/Responsible Person

Sept. 2025 - Present

SEDS-USA Fundraising and Logistics Volunteer

May 2025 - November 2025