Jason Mema

301-906-9548 • jtm2226@columbia.edu • Bethesda, Maryland
Active Secret Clearance

EDUCATION

Columbia University   May 2026
Bachelors of Science in Mechanical Engineering: GPA 3.76

American University   May 2024
Bachelors of Science in Applied Mathematics: GPA 3.84

EXPERIENCE

Columbia University Airplane Club, Aero Subteam, *Columbia University, New York, NY*   September 2025 – Present
- Designed, manufactured, and tested a custom empennage for an AAIC competition aircraft, incorporating structural and aerodynamic considerations.
- Conducted an engineering trade study comparing candidate airplane banner materials, evaluating weight and drag to support data-driven selection.

Mechanical Engineering Lab Super User, *Columbia University, New York, NY*   September 2024 – Present
- Managed after-hours machine shop operations, ensuring safe equipment use and adherence to laboratory protocols.
- Assisted laboratory staff and students with manufacturing work, course project setup, and operational needs.
- Designed custom organization solutions for laboratory storage needs.
- Performs maintenance on machining and laboratory equipment

Naval Engineer Intern (NREIP), *NSWC Carderock, Bethesda, MD*   May 2025 – August 2025
- Iterated the design of an underwater motion capture wand and set up the motion capture system for the International Submarine Races.
- Analyzed data from underwater tests in the circulating water channel to evaluate fin performance.
- Designed and manufactured LED lighting mounts for ROV and camera mounts for motion capture calibration.
- Presented project work to cohort and a large audience of naval and industry engineers (100+ attendees).

Formula FSAE Dynamics Subteam, *Columbia University, New York, NY*   September 2024 – May 2025
- Designed and tested an alignment tool for toe, camber, and caster that replaced guess-and-check methods, replacing iterative guess-and-check methods with a precise, repeatable setup process.
- Developed procedure for press fitting bearings into wheel hub

Undergraduate Researcher, *American University, Washington, DC*   May 2023 – January 2024
Project: Simulation and Control of Inverted Pendulum
- Conducted research on control theory and Lagrangian mechanics, focusing on inverted pendulum systems, and utilized mathematical modeling and simulations to analyze control strategies.
- Presented findings at a research conference and received Best Physical Science Poster Award.

Physics Teaching Assistant, *American University, Washington, DC*   August 2023 – December 2023
- Conducted review sessions to reinforce key concepts, clarify concerns, and provide support to 50+ students.
- Assisted in grading assignments and laboratory reports, providing feedback to enhance student understanding.

Math & Stats Lab Tutor, *American University, Washington, DC*   January 2024 – June 2024
- Conducted one-on-one tutoring sessions for college-level students in subjects such as algebra, calculus, geometry, and statistics.

Skills

Engineering: SolidWorks, MATLAB, Python, Ansys STK, Mathematica, machining, rapid prototyping, laser cutting, 3D printing, experimental data analysis, design validation
Core Strengths: Technical communication, team leadership, analytical problem solving, interdisciplinary collaboration