Andrew Mogge

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Education

Georgia Institute of Technology — Atlanta, GA

Bachelor of Science in Mechanical Engineering, Minor in Aerospace Engineering — *Expected Dec 2027*

- Cumulative GPA: 3.93 / 4.00

Experience

Sandia National Laboratories — May 2026 – Present

R&D Engineering Intern – UAS Laboratory — *Albuquerque, NM*

- Executed end-to-end mechanical design, rapid prototyping, and structural fabrication for kinetic intercept drone platforms; served as primary flight test pilot evaluating vehicle handling and intercept dynamics.
- Processed and analyzed flight test sensor data using MATLAB to evaluate trajectory tracking, control loop responses, and structural performance under operational conditions.
- Designed a Raspberry Pi-controlled multi-axis camera gimbal payload for deployable reconnaissance, enabling secure remote video streaming for field operations.
- Engineered dynamic, high-strength SolidWorks enclosures for hydraulic cam-driven robotic arms, designed to protect sensitive electronics while withstanding high-force mechanical loads.

Aerial Robotics and Experimental Autonomy Lab (AREAL) — Aug 2025 – Present

Undergraduate Research Assistant, Georgia Tech — *Atlanta, GA*

- Constructed a 6' wingspan aircraft (Max take of weight of 7.75 lbs) for marine monitoring utilizing 3D-printed aero-composites.
- Modeled a lightweight, long-endurance seaplane airframe in Autodesk Inventor, optimizing internal volume and structural rigidity for maritime deployment.
- Utilized custom Python scripts to analyze hull geometry, confirming buoyancy and self-righting moments for seaplane stability.
- Install autonomous Pixhawk flight controller for maritime navigation, takeoff, and landing while serving as primary flight test pilot.

Design Build Fly — Aug 2024 – Present

Electrical Lead | Georgia Tech — *Atlanta, GA*

- Led electrical development of an autonomous 3.5 lb tri-copter for the Society of Automotive Engineers (SAE) Aero Design competition.
- Tuned ArduPilot PID control loops as flight test pilot to stabilize vertical flight and optimize tilt-motor flight transitions.
- Fabricated balsa and MonoKote airframes to minimize dry weight and maximize payload capacity.

Projects

Clemson University Rocketry Project | *Farm Surveying Payload* — Jan 2024 – Jun 2024

- Designed and built a rocketry payload utilizing deployable stabilization fins and an onboard imaging system.
- Programmed an Arduino microcontroller to measure altimeter, pressure, temperature, and onboard imaging data.

Aquabots VIP (MicroFloat) | *Mechanical Sub-Team Lead* — Jan 2025 – Jun 2025

- Redesigned submersible frame in SolidWorks, enhancing modularity and cutting maintenance time by 20%.
- Configured tubing for buoyancy control using an external ballast system to achieve alterable depths for probing.

ME 2110 Robotic Design Competition — Aug 2025 – Dec 2025

- Designed and built an autonomous competition robot in SolidWorks using mechatronics and Arduino IDE control, fabricated with 3D-printed and laser-cut elements.
- Utilized design techniques including House of Quality, specification sheets, and function trees in product ideation.

Technical Skills

Fabrication: CNC Routing, 3D Printing, Waterjet, Laser Cutter, Soldering Iron, Mill, Lathe, Multimeter
Programming Languages: MATLAB, Python, C/C++ (Arduino IDE)
Programs & Tools: SolidWorks, Fusion 360, Inventor, OpenVSP, Ardupilot, Bambu Studio, LightBurn
Certifications & Flight: AMA Certified RC Pilot (12+ Years Aircraft Flight & Construction Experience)