Aditya Attrey

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Summary

Driven Honors Aerospace Engineering student at Virginia Tech with a focus on propulsion and avionics. Combines a strong foundation in mechanical systems and computational analysis with hands-on expertise in rapid prototyping, hardware design, and microcontroller integration (ESP32). Proven leader with experience guiding robotics teams (FTC) and leveraging CAD tools (Fusion360) and programming (MATLAB, C++) to solve complex problems. Seeking a technical role in a collaborative engineering environment to apply analytical problem-solving and multidisciplinary technical skills.

Education

Virginia Polytechnic Institute and State University (Virginia Tech) — Blacksburg, VA
Bachelor of Science in Aerospace Engineering, Minor in Physics
Expected Graduation: May 2028
GPA: 3.4 / 4.0

Triangle Match and Science High School — Apex, NC
High School Diploma, May 2024
GPA: 3.8 / 4.0
Honors: AP Scholar with Distinction
Activities: Robotics Club

Skills

- **Software & Programming: MATLAB, C++, Fusion360, 2D/3D CAD Tools**
- **Engineering & Hardware: Microcontroller Integration (ESP32), Circuit Analysis, Rapid Prototyping, Structural Mechanics, Cavitation, Advanced Mathematics**
- **Leadership & Soft Skills: Cross-functional Teamwork, Technical Communication, FTC Robotics Mentorship, Analytical Problem-Solving**

Experience

Undergraduate Research **Feb 2025 -- Present**

- Cavitation research under Dr. Delgosha.
- Helped assemble experimentation rig.
- Designed Mesh’s for experimentation using SolidWorks, to alter flow rate.
- Cavitation analysis in MATLAB of particle flows with variable flows.

Robo-Grinder VT **Sep 2024 - April 2025**

Mechanical Design Lead

- Designed structural components using advanced CAD tools to optimize strength-to-weight ratios for robust yet lightweight assemblies.
- Introduced and evaluated aluminum alloys and carbon fiber composites, conducting material assessments to inform design choices and performance outcomes.
- Produced detailed manufacturing drawings, bill of materials (BOM), and documentation, maintaining version control and traceability of design decisions.

FTC Robotics Club **Sep 2020 - April 2024**

Hardware Design Lead

- Design Lead, FTC Robotics Team — Directed all mechanical design efforts for the competition robot, including launcher mechanisms, scissor-lift subsystem, and all-wheel-drive (AWD) drive system.
- Managed full design lifecycle with CAD modeling, rapid prototyping, testing, and iterative refinement to meet performance and reliability goals.
- Mentored teammates in CAD (e.g., SolidWorks/Fusion 360), fabrication techniques, and best practices; promoted safety and reproducibility in all build processes, along with procuring sponsorship

PERSONAL PROJECTS

- Trained a large language model (LLM) using the LoRA fine-tuning framework
- Developed a TikTok-style news feed platform, serving 100+ campus users
- Designed and implemented an ESP-32-based wireless plant irrigation system (ongoing)
- Built a fully functional motorized bicycle from scratch

Hobbies / Interests

- Playing guitar,
- DIY electronics,
- Hiking