

APOORVA SAURAV

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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY

B.S. Mechanical Engineering | GPA: 4.0/4.0

Atlanta, GA

May 2028

DEEP RUN HIGH SCHOOL (GPA: 4.7; Rank: 2 / 458)

Glen Allen, VA

RESEARCH EXPERIENCE

LAB FOR INTELLIGENT DESIGN AND AUTONOMOUS ROBOTS, GEORGIA TECH

Atlanta, GA

Undergraduate Research Assistant

Sep 2025 – Present

- Designed crank-slider four-bar robotic gripper, replacing rack-and-pinion design; did torque calculations to meet force targets.
- Identified backlash, manufacturability, range-of-motion limitations in prior design; improved each through mechanism choice.
- Integrating compliant magnet-embedded tactile sensor pads into gripper fingers; assembling magnetometer PCBs via reflow.
- Fabricated and assembled XT30 power and CAN wiring harnesses for robotic arm, including wire routing and soldering.
- Supported humanoid calibration and motion validation, assisting with positioning, zeroing, and hardware setup during testing.

AEROSPACE ROBOTICS LAB, GEORGIA TECH

Atlanta, GA

Undergraduate Research Assistant

Sep 2025 – Nov 2025

- Redesigned lunar rover holonomic drive module from 2 L-brackets to 1 shell structure, improving maintainability, modularity.
- Designed a custom camera mount to evaluate vision sensor placement and alignment using a passive robotic arm test fixture.

AUTOMATION IN ADDITIVE MANUFACTURING LAB, VCU

Richmond, VA

Research Assistant

Jun 2023 – Sep 2024

- Developed A*-based path-planning algorithms for robotic metal 3D printing, optimized paths by directional weighting.
- Ran conjugate heat transfer simulations in Ansys to validate thermal design of magnetic end effector for DED printing.
- Self-taught magnetics, thermal analysis to replicate analytical cases, validate simulation results, and guide system design.

WORK EXPERIENCE

J.D. LEWIS CONSTRUCTION MANAGEMENT, LLC

Richmond, VA

Technical Infrastructure Intern

Jun 2025 – Jul 2025

- Automated internal workflows using Google Cloud Platform, AppsScript to reduce repetitive data entry and manual overhead.
- Designed file access and backup for local server, using NTFS permissions and PowerShell scripts for user management.

SPANALYTICS LLC

Innsbrook, VA

Cybersecurity Intern / Part-Time Employee

Jun 2024 – Mar 2025

- Built Python tool to fingerprint WiFi devices from encrypted traffic via 802.11 management frames.
- Researched in-house Wi-Fi HaLow sniffer development and implemented proof-of-concept WiFi attacks in Python.
- Self-taught 802.11 protocol via technical docs/experimentation to identify fingerprinting signals in encrypted payloads.

ACTIVITIES

HYTECH RACING

Atlanta, GA

Powertrain Engineer

Aug 2025 – Present

- Assembled custom planetary drive gearboxes, checking tolerances, alignment, and gear mesh during drivetrain integration.
- Completed CATIA V6 and SIMULIA training (CAD, FEA); onboarding in Altium PCB design and waterjet operation.
- Developed Python telemetry analysis tools to process MCAP logs and estimate brake thermal loads for temperature modeling.

FIRST ROBOTICS TEAM 1086, BLUE CHEESE ROBOTICS

Glen Allen, VA

Captain (2025), Design Lead (2023-2024)

Sep 2021 – May 2025

- Led 75+ member team through iterative robot development, mentored underclassmen in mechanical design and controls.
- Directed mechanical design of all projects, from concept to parametric CAD, DFX for CNC/sheet metal workflows.
- Led turnaround to 95th percentile in 2 years, with first Worlds bid in 6 years and first Quality Award since 2010.

ADDITIONAL

Mechanical: CATIA, Onshape, SolidWorks, ANSYS Mechanical/Fluent, 3D Printing, Sheet Metal Design, DFA/DFM, Altium

Programming: Python, MATLAB, Java, Arduino (C/C++), Bash, Unix, Git, Docker, PowerShell, SQL, Wireshark

Training: Certified Onshape Associate, GIAC Security Essentials, Cornell ENGR2000X: Intro to Engineering Simulations