

# Anthony Bynum

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## Education

### Harvard University

Cambridge, MA

Bachelor of Science: Mechanical Engineering. GPA: 3.625

May 2028

Relevant Coursework: Computer-Aided Machine Design, Intro to Electrical Engineering, Thermodynamics, Digital Fabrication, and Humanitarian Design Projects.

### Hilton Head Island High School

Hilton Head Island, SC

International Baccalaureate Diploma. Weighted GPA: 5.276; Unweighted GPA: 4.0

June 2024

## Engineering Experience

### Harvard School of Engineering and Applied Sciences

Feb 2025 – May 2025

Teaching Assistant for ES51: Computer-Aided Machine Design

- Introduced 40+ students to topics such as CAD, 3D printing, GD&T, technical drawings, and machining (CNC and manual).
- Facilitated hands-on learning in weekly labs, provided office hours, and graded homework, design notebooks, and projects.

## Engineering Projects and Clubs

### Harvard Rocket Propulsion Group

Propulsion Team

Sep 2024 – present

- Constructing a high-power, liquid-bipropellant rocket, using CAD, machining tools, and 3D printing.
- Co-designed a liquid rocket injector in SolidWorks, incorporating CFD analysis results to enhance combustion efficiency.

### Engineers Without Borders

Kenya Project

Sep 2025 – present

- Contribute to Engineers Without Borders' Kenya project by using Revit to design and model two new water kiosks, supporting the team's goal of improving clean water accessibility in remote villages.

### Harvard Undergraduate Automotive Society

Brake Pedal Team

Sep 2024 – Sep 2025

- Designed the brake pedal system for a Formula SAE car in SolidWorks, balancing space limits with comfort and safety.

### Harvard Society of Black Scientists and Engineers

Mentorship Chair

May 2025 – present

- Facilitating mentorship and engagement among students by coordinating bonding and peer advising programs.

### Course Projects

Sep 2024 – present

- Competition Robot: Spearheaded the design and prototyping of a competition robot, utilizing CAD, 3D printing, and laser cutting to achieve a top 3 finish in the course competition.
- Bionic Hand: Led circuit design and troubleshooting for a myoelectric prosthetic hand using EMG signals, with analog filtering, amplification, and Arduino-based gesture control.

## Research Work

### MIT Department of Aeronautics and Astronautics

Sep 2025 – present

- Conducted wind-tunnel experiments and aerodynamic analysis of solar panel geometries to optimize passive dust-mitigation designs for off-grid PV systems.
- Implemented API calls, completed the user registration system, and advanced the frontend for the Ashesi Solar Monitoring Network (ASMONET) to support expanded solar and weather data collection and analysis in Ghana.

### International Baccalaureate Extended Essay

Sep 2023 – Apr 2024

Conducted independent aerodynamics research, analyzing the impact of airfoil angle of attack on lift and drag forces, modeling the airfoil after a Piper PA-28 aircraft.

## Skills and Relevant Courses

**Technical:** CAD SolidWorks Design Associate (CSWA), Revit, Python, HTML, CSS, and PHP.

**Machine Shop:** 3D printer, laser cutter, soldering, mill, lathe, drill press, bandsaw, most power tools.

**Languages:** English (fluent), Arabic (advanced), Spanish (intermediate).