

Bo Gardner

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Education

Harvard College

Intended S.B. in Mechanical Engineering; Expected May 2030

Cambridge, MA

September 2026 – Present

Saint Ann's School

High School Diploma; ACT Composite: 36

Brooklyn, NY

2022 – 2026

Engineering Experience

North Brooklyn Aerospace

Co-Founder

New York, NY

2024 – Present

- Designed, built, and launched at Friends of Amateur Rocketry (FAR) a two-stage 54 mm minimum-diameter high-power rocket targeting more than 55,000 ft AGL; final RASAero simulation updated for the as-built vehicle predicted approximately 65,000 ft using L1000 and K455 motors.
- Designed and 3D-printed compact avionics and dual-deployment housings; selected recovery hardware and deployment parameters, ground-tested black-powder ejection charges, and fabricated fiberglass/carbon-fiber vehicle components.
- Designed and bench-tested an active airbrake for apogee control, iterating through approximately 30 FDM prototypes to refine materials, clearances, lubrication, sliding geometry, and reliable single-servo actuation.

Harvard Undergraduate Aerospace Collective (HUAC)

IREC Rocket Design Team

Cambridge, MA

2026 – Present

- Designing the mechanical dual-deployment system for a 10,000-ft IREC rocket carrying a payload, including recovery-hardware selection, component packaging, attachment methods, ejection-charge sizing, and serviceable assembly interfaces for safe vehicle and payload recovery.

Independent Wind-Tunnel Project

Designer and Builder

New York, NY

2023 – 2026

- Designed and built an 8-ft open-circuit subsonic wind tunnel with an approximately 9 in × 9 in × 15 in acrylic test section, 12-in RC-aircraft propeller, brushless motor, flow-straightening mesh, and 3D-printed transition geometry.

Research & Technical Projects

Wingtip Pressure Research

Independent Student Researcher

New York, NY

2023 – 2024

- Used Python and scikit-learn with NASA wind-tunnel data to model static pressure near a NACA 0012 wingtip; published *Utilizing Machine Learning to Predict Static Pressure Over a Wingtip*, Journal of Student Research 13(4), DOI: 10.47611/jsrshs.v13i4.7744.

Columbia Engineering SHAPE

Engineering Student

New York, NY

Summer 2024

- Designed, fabricated, and tested a four-legged walking robot in a team-based mechanical prototyping program.

Leadership & Additional Experience

The Cohetes Program

Founder

Santa Maria de Jesus, Guatemala

2024 – Present

- Created and taught a hands-on rocketry and physics program for approximately 60 students across grades 5–8 using student-built water rockets.

From Houses to Homes

Volunteer Builder

Guatemala

2011 – Present

- Helped construct 15+ concrete-block homes, including mixing concrete, laying block, painting, and site work.

Technical Skills

CAD / Simulation: Onshape, OpenRocket, RASAero

Fabrication / Hardware: FDM 3D printing (PLA, PETG, ASA, TPU), fiberglass drilling/finishing, carbon-fiber cutting, structural epoxy bonding, soldering, basic electronics, high-power rocketry, recovery systems

Programming / Data: Python, scikit-learn, Google Colab, machine learning

Certification: NAR Level 1 High Power Rocketry