

CARLOS G. LONGORIA

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EDUCATION

Massachusetts Institute of Technology (MIT)

B.S. in Mechanical Engineering

Biomedical Engineering Minor

Cambridge, MA

Expected June 2028

GPA 4.8/5.0

Relevant Coursework: Mechanics and Materials II; Dynamics and Control II; Thermal-Fluids Engineering I; Design and Manufacturing I; Numerical Computation; Introduction to Autonomous Machines. (change to semicolons)

SKILLS

Software: MATLAB; Java; Python; SolidWorks; OnShape; AutoCAD; Formlabs PreForm; Arduino.
Hardware: CNC and Manual Fabrication; LPKF Laser Fabrication; Instron Testing System; SLA Printing.
Professional: Leadership; Technical Communication; Project Development; Adaptability.
Languages: Spanish (Native); French and Italian (Proficient).

ENGINEERING RELATED EXPERIENCE

MIT Arcturus

Cambridge, MA

Mechanical Engineer

September 2025 – February 2026

- Designed and manufactured a pressurized ball launcher for the 2026 RoboBoat international competition.
- Developed MATLAB simulations to optimize size and weight constraints for launcher.
- Manufacturing incorporated pressurized gas canisters, 3D printed components, and Arduino electronics.

MIT Lincoln Laboratory

Cambridge, MA

Teaching Assistant – Microelectronics Course

July 2025 – August 2025

- Created descriptive lesson plans and lectured for 30+ students, breaking down complex electrical engineering concepts and introducing foundational electrical components.
- Presented students with design challenges and guided them through the engineering design process by providing constructive feedback, troubleshooting strategies, and presentation advice.

Maverick Arms Inc

Eagle Pass, TX

Manufacturing Engineer Intern

July 2024 – August 2024

- Designed precision fixtures using SolidWorks to optimize manufacturing processes by reducing assembly-line errors and preventing product damage.
- Incorporated direct feedback from assembly line operators to identify common areas of failure.
- Created a foundational plan to begin the integration of Yaskawa Motoman robots for automated production.

Junior Maintenance Mechanic

June 2024 – July 2024

- Diagnosed and repaired industrial machinery; identified common areas of mechanical failure and designed reinforcements to prevent assembly-line delays and product damage.

RESEARCH EXPERIENCE

MIT Laboratory for Translational Engineering (Traverso Lab)

Cambridge, MA

Undergraduate Researcher

June 2026 - Present

- Standardized manufacturing of thin-film devices utilizing LPKF R4 and U4 laser hardware.
- Optimized swelling rate of expandable capsule through quantitative analysis of perforation parameters.
- Conducted mechanical characterization of medical devices for gastrointestinal performance.

AWARDS

International Design Competition Award

May 2026

Awarded by the MIT Department of Mechanical Engineering “for the 2.007 Competition Robots that are Best and Most Innovatively Designed.”