Diego Salcedo

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Education

Massachusetts Institute of Technology Expected May 2029
B.S. in Mechanical Engineering (Course 2) *Cambridge, MA*

- GPA: **4.3/5.0**
- Relevant Coursework: Thermal-Fluids Engineering, Dynamics & Control, Numerical Computation, Mechanics & Materials

Engineering Experience

MIT Motorsports Sep 2025 – Present
Drivetrain & Cooling: MY27 Motor Cooling Sleeves *Cambridge, MA*

- Redesigning MY27 motor cooling for **1.45 kW/motor** heat rejection, driven by increased regenerative braking demands
- Developed **parametric Desmos models** to size channels for convective heat transfer and hydraulic losses; selected a **single helix with annular ends** to expand wetted motor area
- Modeled geometry in **Siemens NX/Teamcenter** and simulated in **ANSYS Fluent**; initial CFD predicted **30% lower pressure drop** (1.69 to 1.18 psi at 4 L/min) without a 180° return bend

Low-Voltage Systems: Boxen Battery Enclosure

- Designed Boxen's **first dedicated low-voltage battery enclosure**, incorporating a removable lid, LEMO connectors and sealing features around an IP68 design target
- Replaced conventional bolted mounting with **quick-release pins integrated into existing mounting tabs**, creating Boxen's first rapidly removable enclosure for battery servicing; system remains operational

FIRSTxMIT Oct 2025 – Present
Robot-in-3-Days (Ri3D) Hardware Captain *Cambridge, MA*

- Led hardware for **MIT's inaugural Robot-in-3-Days**, delivering a working robot in **72 hours vs. a six-week FRC build period**, with **$11k vs. $24k median FRC annual team budgets**
- Designed and built the **complete intake and deployment mechanism in Onshape** from scratch, solving packaging and actuation challenges; mechanism operated on the finished robot
- Planned procurement before kickoff to mitigate part shortages during the 72-hour build; coordinated laser-cut and waterjet fabrication and documented the build in **GitBook**

Tribe Robotics (FRC Team 4123) Jan 2022 – May 2025
Team Captain (2023–2025); Co-Captain (2022–2023) *Bellflower, CA*

- Led **30+ students across five technical subteams**; team reached its **first two regional finalist finishes** and ranked in the **top 12.2% worldwide** by Statbotics EPA in 2025
- Designed and integrated **separate coral and algae intake/outtake mechanisms** on a shared elevator, packaging four game-piece handling functions into one robot assembly for the 2025 season
- Managed robot-wide assemblies and production drawings in **Autodesk Inventor**, contributing CAD across subsystems and coordinating mechanical interfaces for system-level integration

Technical Skills

CAD & PLM: Siemens NX, Teamcenter, SolidWorks, Autodesk Inventor, Onshape

Analysis & Programming: ANSYS Fluent, MATLAB, Python, thermal-fluid modeling, pressure-drop analysis

Manufacturing: Manual mill and lathe, waterjet cutting, laser cutting, CNC routing, 3D printing

Other: Engineering drawings, GitBook; English and Spanish (native)