ERIC D. DELGADO

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Education

Massachusetts Institute of Technology - Cambridge, MA — Expected Graduation: May 2026

- Candidate for Bachelors of Science in Mechanical Engineering

Relevant Experience

Undergraduate Researcher — Jan. 2024 – Present
MIT Media Lab - Biomechatronics Lab — Cambridge, MA

- Develop a humanoid walking plant model in Drake for integration with a Model Predictive Controller, optimizing the gait of an ankle-foot prosthetic based on specified mass and walking speed
- Use a closed form representation of human walking gait at different speeds to create a library of optimized trajectories to follow given an estimated state
- Implement "self-learning" using Bayesian optimization to tune the controller for unique individual walking gaits
- Assist supervisor in conducting walking trials with human subjects to validate results

Undergraduate Researcher — Sep. 2023 – Dec 2023
MIT Media Lab - Fluid Interfaces Lab — Cambridge, MA

- Processed EEG data into meaningful engagement and focus metrics, contributing to better understanding cognitive behaviors in subjects with neurological disabilities
- Redesigned and fabricated a pair of electroencephalograph glasses and companion haptic feedback bracelet for tracking attention and engagement patterns in individuals with neurological disabilities

Summer Research Intern — Jun. 2023 - Aug. 2023
Friedrich Alexander University - N^2 Lab — Erlangen, Germany

- Developed an actuation system with a 33% reduced number of motors while preserving all degrees of freedom for four fingers of a myoelectrically controlled bionic hand prosthetic
- Coded and implemented a CAN bus communication system facilitated by Arduino nodes to simultaneously and independently actuate tendons of a hand prosthetic
- Designed and fabricated a spring damper meant to simulate muscular stretch during flexion and extension of digits

Leadership

Front Suspension Lead — Sep. 2023 – Present
MIT Solar Electric Vehicle Team — Cambridge, MA

- Design and fabricate a solar powered vehicle that competes in prestigious national competitions (American Solar Challenge, Formula Sun Grand Prix)
- Lead weekly meetings to discuss design choices regarding the suspension system and its implications on the overall design of the solar car
- Develop and refine the suspension subsystem by CAD-ing, creating HAAS toolpaths, water jetting, and welding components for final vehicle assembly.

Gordon Engineering Leader — Sep. 2024-Present
Gordon-MIT Engineering Leadership Program — Cambridge, MA

- Participating in selective leader development program focused on being an effective member or leader of industry engineering teams
- Actively practicing leadership, teamwork, and communication skills in an engineering context; complementing MIT's technical coursework

Skills and Awards

Languages: English (native), Spanish (native), German (fluent),
Computer/Programming: Python, Java, MATLAB, Julia, C, Arduino, Fusion 360, SolidWorks
Awards/Honors: National German Exam Gold Medalist, Outstanding Achiever: DSSV German Essay Contest, National Hispanic Recognized Scholar, AP Distinguished Student