Miguel Talamantez

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Education

Massachusetts Institute of Technology (MIT) — Cambridge, MA
Bachelor of Science in Mechanical Engineering — *Aug. 2021 – May 2025*
with a concentration in Hardware, Electronics, and Embedded Systems — *GPA: 4.2/5*

Experience

Cybertruck Battery Cell Process/Controls Engineering Intern — May 2024 – August 2024
Tesla Cell Manufacturing — *Austin, TX*
- Developed, tested, and implemented manufacturing controls logic on production machines for manufacturing 4680 battery cells
- Led a high-priority project to improve cell production yield through mechanical redesign and SQL database improvements

Biomimetics Lab Researcher — May 2023 – May 2024
Massachusetts Institute of Technology — *Cambridge, MA*
- Contributed to the development of MIT's Humanoid Robot by conducting Electrochemical Impedance Spectroscopy (EIS) testing to create advanced battery cell models, optimizing energy utilization and enhancing overall robot performance

Battery Subteam Lead — Feb 2023 – August 2024
MIT Electric Vehicle Team (EVT) (evt.mit.edu) — *Cambridge, MA*
- Designed, fabricated, and integrated a custom battery used for a Hydrogen Fuel Cell Electric Vehicle (FCEV) motorcycle
- During a crash while testing, battery sustained no damage due to protective mounting I designed
- Primary team TIG/MIG welder and welding instructor

Bionic Leg Battery Design Researcher — Oct 2022 – August 2023
MIT Media Lab Biomechatronics Lab — *Cambridge, MA*
- Designed a small-scale custom battery for a prosthetic leg under Hugh Herr's Bionic Limb program

Sales and Marketing Intern — May 2022 – August 2022
Scaled Robotics / NASKA.AI — *Barcelona, Spain*
- Migrated and organized sales/marketing data at a robotics startup

MIT Motorsports Team Member — Aug 2021 – Jan 2023
MIT Formula SAE (Society of Automotive Engineers) — *Cambridge, MA*
- Redesigned high voltage and low voltage PCB through Altium
- Contributed to designing, assembling, and implementing 300V racecar accumulator

Projects

Digitized Theremin Final Project | *Assembly, C++, PSoC, Circuit Design* — April 2024 – May 2024
- Used a PSoC (Programmable System on Chip) to imitate a traditionally analog circuit instrument digitally. Designed custom circuitry to play music influenced by capacitive sensing from a person's hand. Using a copper pipe as an antenna, measured frequency of oscillation and produced audio via the PSoC.

Prof-E-Mon, Embedded Systems and IoT Final Project | *Git, SQL, C++* — May 2018 – May 2020
- In a team of 5, designed and implemented a custom PokemonGO-inspired game using an ESP32, Google APIs, SQL Databases, and Wifi-location tracking. Project had a TFT display, motion sensing used to "throw" game objects, and a real-time satellite map view of user location.

Technical Skills

Languages: Assembly, Python, C/C++, SQL, Beckhoff, MATLAB
Mechanical: SolidWorks, Welding and Steel-work, General Machining and Fabrication, Product design
Electrical: Altium PCB Design, Power Electronics, Embedded Sytems (8051, STM32, ESP32), Battery Design
Spoken Languages: English (Native), Spanish (Native), Portuguese (Intermediate), Japanese (Beginner)