Alvaro J. Meléndez

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EDUCATION

Massachusetts Institute of Technology *Undergraduate* - Cambridge, MA Sep 2015 – Present
Class of 2019 - Mechanical Engineering Major, Computer Science Minor
Relevant coursework: *Mechanics and Materials I & II, Dynamics and Control I, Numerical Computation for Mechanical Engineers, Electronics for Mechanical Systems, Toy Product Design, Fundamentals of Programming, Design and Manufacturing I*
Luis de Florez Award for Engineering Design 1st Place
MIT MOTORSPORTS SUB-TEAM LEAD

Academia Británica Cuscatleca *High School* - Santa Tecla, El Salvador Graduated June 2015

- IB Diploma Program, top 5% of class

PROFESSIONAL EXPERIENCE

OPTIMUS RIDE *Hardware Intern* – Boston, MA June 2017 – Aug 2017

- Designed autonomous-driving sensor mounts and covers that were serviceable for vehicle transport
- Designed the vehicle's new computing electronics enclosure with proper cooling and waterproofing
- Autonomous vehicle test engineer

LUCID MOTORS *Powertrain Intern* - Menlo Park, CA June 2016 – Aug 2016

- Responsible for managing battery pack mechanical testing, both at the cell and subunit level
- Designed fixtures for battery pack testing using Siemens NX
- Devised a rig that would reliably set cells into thermal runaway for testing purposes
- Prepared thermal tests for both cell level and subunit testing

PROJECT EXPERIENCE

MIT MOTORSPORTS (FORMULA SAE ELECTRIC) - Cambridge, MA Aug 2016 – Present
Enclosure and Harness Sub-team Lead

- Deliver an electrical harness and enclosures for all external PCBs, meeting the design requirements and mass allocation
- Responsible for addressing noise, EMI, waterproofing and vibration and ensuring the integrity of signals and the reliability of the electrical system

Battery Team Mechanical Engineer

- Battery pack made from 18650 Li-ion cells, custom-made polycarbonate cell holders, bus-bars, and individual fusing to prevent propagation of thermal-runaway
- Responsible for designing a fully serviceable, self-electrocution safe enclosure for accumulator HV electronics
- Adhesive and bus bar insert testing for accumulator, MATLAB fuse testing data processing and weight minimization
- Luis de Florez Award for Undergraduate Design 1st place winner

MIT Electric Vehicle Team *Mechanical Engineer* - Cambridge, MA Sep 2015 – May 2016

- Worked with the battery sub-team designing the frame of the car that along with the belly-pan of the car will hold the batteries
- Used FEA in SolidWorks simulation to analyze the battery enclosure to prevent failure

MIT Edgerton Center *Outreach Volunteer* - Cambridge, MA Sep 2015 – Present

- Teach and introduce younger students into the idea of engineering, art and science and assist them with their personal projects
- Designed a night-light to teach over 100 students about basic electronics, art and science in Beijing, China

MakerLodge *Mentor* – Cambridge, MA Sep 2016 – Jan 2017

- Trained freshmen on using basic makerspace tools like laser cutters, 3D printers and hand tools

LEADERSHIP

MakerSpace *Founder* Santa Tecla, El Salvador

- Started the first ever MakerSpace at my high-school to promote hands-on-learning.
- Installed Raspberry Pi's and Arduinos and taught students how to use them.

Electronics Club *Organizer* Santa Tecla, El Salvador

- Organized and lead an electronics club intended to teach younger students about basic electronics, soldering and designing PCBs.

SKILLS

Hardware: Mill, Lathe, Waterjet, Laser Cutter, 3D Printer
Software: SolidWorks, HSMworks (CAM), MATLAB, Basic ROS, Blender, Java, Arduino, Python