ALVARO J. MELENDEZ

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Self-motivated and proactive mechanical engineer with experience in EE & CS in a wide diversity of projects, with a passion for mechatronic systems and product development. Online portfolio: www.ajmel.me

EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY — Cambridge, MA
Candidate for B.S. in Mechanical Engineering — Expected June 2019

ACADEMIA BRITANICA CUSCATLECA Class of 2015 — Santa Tecla, El Salvador
IB Diploma Program — June 2015

RELEVANT EXPERIENCE

TALON (SAFETY UTILITY KNIFE) – *Mechanical Engineer Team Member*, Cambridge, MA — Sept. 2018-Present

- Led a team of 20+ students on the development of an innovative safety utility knife for construction workers that alleviates injuries by retracting the blade upon contact with the skin. Talon is now patent pending

CLEARMOTION – *Product Development Intern*, Woburn, MA — May-Aug. 2018

- Developed an active suspension system through design, simulation, testing and validation
- Analyzed and initiated PCB development through component R&D, thermal analysis, simulation, and debugging
- Created testing fixtures using professional drawings and effectively collaborated across multiple disciplines

MIT MOTORSPORTS (FORMULA SAE), Cambridge, MA

Controls Engineer — June 2018-Present

- Design and test controls algorithms for power limiting an electric racecar using C

Electrical Harness and Enclosure Lead — Aug. 2017-June 2018

- Designed and manufactured electrical harnesses and enclosures for PCBs, addressing noise, EMI, waterproofing and vibration, ensuring the integrity and reliability of the electrical system

Battery Team — Aug. 2016-June 2017

- Designed a custom in-house battery pack made from 18650 Li-ion cylindrical cells
- Analyzed and led the design of a fully serviceable, electrocution safe enclosure for high voltage electronics
- 1st place winner of the MIT Luis de Florez Award for Undergraduate Design

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

- Designed serviceable autonomous- driving sensor mounts and covers for vehicle transport
- Advanced a new computing electronics enclosure with proper cooling and waterproofing

LUCID MOTORS – *Powertrain Intern*, Newark, CA — June-Aug. 2016

- Led and managed battery pack mechanical testing, both at the cell and subunit level
- Devised a rig that would reliably set cells in thermal runaway for testing purposes

LEADERSHIP & PROJECTS

PAPPALARDO LABS – *Teaching Assistant*, Cambridge, MA — Feb. 2018-Present

- Teach and assist students through design, testing, and manufacturing their competition robots

RAMEN-STYLE YO-YO – *Mechanical Engineer*, Cambridge, MA — Sept.-Dec. 2018

- Led a team of 5 members to design, test, and manufacture 50 identical ramen-style yo-yo's

PHARMACY ON DEMAND – *Mechanical Engineer*, Cambridge, MA — Jan. 2018

- Developed a compact, portable pharmaceutical manufacturing system to produce drugs on demand

TECHNICAL SKILLS

Mechanical: Manual/CNC Mill and Lathe (ProtoTRAK, HAAS VF2); Waterjet (OMAX); Lasercutter (EPILOG, Universal); 3D Printing (Makerbot, Ultimaker, Stratasys, Dremel); Injection Molding (Engel); GD&T (ASME Y14.5-2009)

Hardware: CAM (MasterCAM, HSMWorks); National Instruments; Sensors; SolidWorks (CAD, Simulation, PDM); ANSYS; Arduino; Raspberry Pi

Software: C; Java; Python; MATLAB; ROS