ALVARO J. MELENDEZ HASBUN

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Self-motivated and proactive mechanical engineer that performs exceptionally well in teams, experienced in ME, EE, & CS with a passion for electro-mechanical systems and product development. Complete project portfolio: www.ajmel.me

EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Cambridge, MA

B.S. in Mechanical Engineering – *Product Engineering Processes, Mechanics and Materials I & II, Design and Manufacturing I & II, Design of Feedback Control, Thermodynamics, Circuits & Electronics* June 2019

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

RELEVANT EXPERIENCE

TALON – *Mechanical Engineer*, 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
- Responsible for developing and testing the mechanical assembly of the device to a response time of 24 ms

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

- Developed an active suspension system through design, simulation, testing and validation of PCBs through component R&D, thermal analysis, simulation, and root-cause analysis
- Led HALT testing by writing test plans and designing testing fixtures using professional drawings
- Supported DFA by creating prototypes to measure new product performance

MIT MOTORSPORTS (FORMULA SAE) Cambridge, MA

Controls Engineer June 2018-Present

- Development and testing of 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 waterproof computing electronics enclosure by reducing its size by 50%

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

- Led and managed battery pack mechanical and adhesive testing to conform to automotive standards
- Devised a rig that would reliably set cells in thermal runaway for testing purposes, cutting testing time by 40%

LEADERSHIP & PROJECTS

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

- Teach and assist students through design, testing, and manufacturing of 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: DFA, DFM, Manual/CNC Mill and Lathe; Waterjet; Laser cutter; 3D Printing; Injection Molding; Sand Casting; Rapid Prototyping; Testing; Mechanical Design & Validation; GD&T (ASME Y14.5-2009)

Hardware: National Instruments; Sensors; Harnessing; Arduino; Raspberry Pi

Software: SolidWorks (CAD, FEA); NX; CAM; ANSYS; C; Java; Python; MATLAB; ROS