Sebastián Arrazola

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Education

Michigan State University College of Engineering **Nov 2020**
Professional Certificate, Full-stack web dev GPA 4.0
• MSU's full-stack web development Bootcamp offered an intense educational program, requiring 40+ hours per week for 24 weeks.
• Course highlights: Learned to work with Git, Git Bash, HTML, CSS, JavaScript, jQuery, Bootstrap, Node.js, Express.js, Express-session, Express-handlebars, React.js, Database Theory, MySQL, Sequelize, NoSQL, MongoDB & working in an agile-based team environments.

A. James Clark School of Engineering, University of Maryland **May 2016**
B.S. Mechanical Engineering GPA 3.1
• Dean's List: Fall 2015, Spring 2016
• Course highlights: Computer-Aided Design, Heat Transfer, Electronics & Instrumentation, Vibrations & Controls, Automotive Design Theory, Vehicle Dynamics, and Fundamentals of Internal Combustion Engines

Skills

Computer: Git, Git Bash, HTML, CSS, JavaScript, jQuery, Bootstrap, Node.js, Express.js, Express-session, Express-handlebars, React.js, Database Theory, MySQL, Sequelize, NoSQL, MongoDB, MERN stack, Agile, Assembly, C, C++
Engineering: ATI Vision, HORIBA Vets Emissions Analyser, ANSYS, Arduino, Autodesk Inventor, Catia, Creo Parametric, EES, Matlab, Processing 3 (Java), PSpice, Siemens NX, SolidWorks
Laboratory: 3D Printing Rapid Prototyping, Control Systems Building, Circuit Board Prototyping, Lathe, Flight Control, LabVIEW, LCR & DC Leakage Electrical Measurements for Capacitors, Mill, Programmable Logic Boards, Ricardo WAVE 1-D engine/ gas dynamics simulation, Robotics, Simulink
Other: Fluent in Spanish

Relevant Experience

Intro to Microprocessors & Embedded Systems, University of Michigan **Jan. 2017—Aug. 2017**
Electrical Engineering Masters Course Dearborn, MI
• Introduced to modern digital computer logic, numerical/ coding systems, combinational/ sequential logic design, and simple machine language programming.
• Learned microprocessors-programming, input/output, interrupts, and operating system design.
• Coding skills acquired include Assembly, C/C+ programming language, and fundamentals of OS architecture.

Center for Advanced Life Cycle Engineering **Jan. 2016—Aug. 2016**
Research Intern College Park, MD
• Analyzed degradation of tantalum capacitors due to humidity and thermal exposure.
• Manually collected LCR and DC Leakage electrical measurements routinely and logged them in excel for examination.
• Aided in streamlining (automating) test data acquisition via implementation of LabVIEW controlled multiplexers connected to the LCR and DCL measurement devices, as well as Thermocouples and humidity sensors inside of test chambers which continuously stressed hundreds of tantalum capacitors.

Work Experience

Ford Motor Company **Sept. 2016—Present**
Hybrid Powertrain Calibration Engineer Dearborn, MI
• Participate in a cross-functional team to release calibration software that will support new product releases and updates to those products over time.
• Work toward developing calibrations in our hybrid control system that improve our gas emissions, while making sure to maximize hybrid range and meet customer drivability requirements.
• Collect data with ATI in our emissions lab to confirm if projected effects on emissions and derivability are represented, after making changes in the powertrain control system.
• Validate vehicle powertrain control system changes in different weather conditions on public road, and proving grounds around the country.
• Train rotational program employees that are new to the team, with respect to hybrid powertrain calibration and administer tasks for them to help me with my objectives while also allowing them exposure.

Herson's Honda **July 2011—January 2013**
Mechanic Technician Rockville, MD
• Automotive Repair & Service
• Light manufacturing experience

Red Lobster **July 2010—Aug. 2016**
Server Gaithersburg, MD
• Fast-paced work environment, work 20 hours per week while attending school

Additional Technical Experience

Formula SAE **Sep. 2015—May 2016**

Powertrain Team Member College Park, MD

• Calibrated fuel map on the ECU (PE3) tuning software to best suit the driver's required engine response.
• Reverse Engineered the current "Honda CBR-600RR" engine by disassembling and reconstructing the power plant, while documenting an engine rebuild manual, highlighting material concerning the team.
• Designed Oil pan for better manufacturability, serviceability, and performance. New single piece design maintains the manufacturer's suggested flow rate, while offering a 30% weight reduction and 20% cost reduction per unit, since it requires less processes.
• Evaluated the structural integrity of the motor support links on the oil pan using FEA suite on SolidWorks
• Researched new gasket material that can be laser cut for ease of manufacturing and designed a gasket that would substitute the current liquid sealing compound used on the oil pan.

Tabletop Electronic HVAC Project **April 2015**

Project Designer and Developer College Park, MD

• Independent research and design of Thermocouple HVAC system for electronics & instrumentation class.
• Designed electronic circuitry on PSpice.
• Built device housing out of sheet metal and AC rectifying circuit for DC power supply to the Peltier Thermocouples.
• Executed an Arduino program that actuated Peltier modules to heat or cool, controlled fans speed, and acquired temperature data using thermistors to maintain a user defined temperature.

Electronics & Instrumentation Manual **April 2015**

Co-Creator & Writer College Park, MD

• Collaborated with Mpambara-Cox Foundation, an organization that specializes in intercultural and educational development in Uganda.
• Taught students fundamental physics and mathematics to understand basics of electronic components in circuits through the interactive manual.

Membership & Affiliations

• **Ford Hispanic Network**—*Active Member* **Spring 2017—Present**
• **Society of Automotive Engineers**—*Active Member* **Fall 2015—Present**
• **American Society of Mechanical Engineers**—*Lounge Manager* **Spring 2015—Aug. 2016**
• **Society of Hispanic Professional Engineers**—*Active Member* **Fall 2015—May 2016**