Taha Benmoussa

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Objective

Full-time Job related to Computer / Mechanical Engineering after May 2025 building off my experience in the automotive industry.

Education

Bachelor of Science | Computer Engineering | May 2025
Rose-Hulman Institute of Technology, Terre Haute, IN
Minors: Spanish & Computer Science
Relevant Classes: Power Electronics, Vehicle System Modeling, Electric Machinery, Robotics, Embedded Systems, Operating Systems

Skills & Abilities

Technical: Python, Java Script, C, Arduino, MATLAB, Verilog, SolidWorks, Atlassian Suite (Jira, Confluence, Bitbucket), RISC-V, PCB Design (Altium), MoTeC Programming (PDM Manager, M1 Build & Tune), CANalyzer, Oscilloscope, RapidHarness
Professional: Leadership and Project Management
Language: English, French, Arabic, Spanish

Experience

Product Team Engineering Intern | BorgWarner, Noblesville, IN | May 2024 - August 2024
Designed a durability profile generator utilizing MATLAB, dyne and inverter limitation and EM Models to accurately determine the testing procedure to verify life expectancy of electric motors
Designed a durability live hours estimator using MATLAB & Python in conjunction to monitor current durability testing progress and estimate remaining testing according to the progress
Designed a rotor telemetry system testing plan by setting mechanical and data acquisition standards
Reported progress using Atlassian Suite (JIRA, Bitbucket...)

Sensor Engineering Intern | Cummins, Columbus, IN | June 2023 - August 2023
Designed and validated 3D printed sensor housing for prototype sensor.
Created sensor boss models intended to reduce thermal conductivity.
Coordinated different chemical sensor validation plans with different teams.
Led Design Review for Sensor Release to P-Phase.

Powertrain Lead | Rose GPE (FSAE EV), Terre Haute, IN | May 2024 - Present
Leading the team's first design and implementation of an electric powertrain
Making sure the proper progress & documentation of the team using Atlassian Suite (JIRA, Bitbucket & Confluence)
Modeling the powertrain (motor, inverter and accumulator) on a MATLAB simulation script to predict performance
Designing and building the team's first high-voltage accumulator.
Integrating the powertrain with the rest of the system by accomplishing the following: CANBUS design, VCU programming using Simulink & MATLAB, inverter and motor programming and integration, & HV Cabling Design & Integration

Electrical Team Lead | Rose GPE (FSAE IC), Terre Haute, IN | May 2023 – May 2024
Managed a team of 10 members to build the electrical system efficiently and conform to industry standards.
Designed the Data Acquisition System on the vehicle.
Designing and implementing the electrical systems for this year's car (Harness, Electronic Throttle Control) improving serviceability, reliability, and cost.

Electrical Team Member | Rose GPE (FSAE IC), Terre Haute, IN | September 2021 – May 2023
Collaborated with other team members to build the vehicle's harness.
Designed and implemented the CAN Protocol on the car and integrated the systems related to it by programming the ECU, Power Distribution Module, and Dash.
Worked closely with other mechanical sub teams to tailor the ECU package to their needs, and to conform regulations (implementation of Electronic Throttle Control).
Design custom sensors (IR Temperature Sensor & IMU) by designing PCB and programming MCU to communicate with the ECU.

Assistant | Athletic Training Room, Rose-Hulman Institute of Technology | September 2021 - Present
Assist with athletic events and arrange athletic training room properties.

Projects

Tire Temperature Sensor | Rose GPE (FSAE), Terre Haute, IN | September 2022 – November 2023
Designed a few iterations of the PCB with a custom power supply that will be mounted near each tire and brake rotor to monitor a range of temperature using an infrared thermal sensor array that uses I2C and which its data will be transferred to the vehicle's CAN bus.

Activities and Leadership

- **Rose-Hulman International Student Association:** *President & Former Vice-President*
- **Pi Kappa Alpha Fraternity:** Member