Drake Rundell

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Experience

General Motors | Full-Stack Software/System Engineer - SDV Embedded Platforms | *WFH* Feb. 2023 – Present

- Standing up fullstack web application for network graph analysis supported by newly constructed relational & graph databases to track dependencies, change management, and status of systems in new and legacy electrical architectures.
- Design and implement complex data models using Neo4j graph database and PostgreSQL, optimizing the application's performance and enabling advanced data querying capabilities.
- Support redefinement of Systems Engineering at GM through decomposition and hierachy redefintion of functional features and systems to align with agile software development teams and MBSE methodology.
- Develop innovative tools and dashboards to aid in productivity and knowledge transfer to all levels of the company, including the generation of system controls requirements as system architect liason to SW and controls teams.

General Motors | Design Release Engineer - Air Delivery | *Warren, MI* July 2021 – Feb. 2023

- First named author on two granted patents (*US Patent No. 11,933,256 & 11,852,109*) concerning novel approaches to vehicle gas distribution techniques into intake manifold runners.
- Supported production and future components through innovative design/analysis studies, management of supplier contact, validation to testing methods, and cross functional communication to engine and vehicle program teams with focus in intake manifolds and engine covers.

Williams International | Advanced Manufacturing Engineer | *Pontiac, MI* June 2020 – July 2021

- Worked within the electrical manufacturing cell focusing on the development of tooling, fixtures, additive manufacturing and process plans for precision electromechanical assemblies.
- Lead development of plastic additive area within cell to provide low-cost and rapid manufacturing of tooling, while progressing to production hardware using resin additives.

Projects

IoT Connected NHL Goal Horn | *Python, AWS, ESP32, C, C++, Git, PCB Design*

- Embedded real-time system with custom designed PCB supporting an ESP32 connected to AWS with less than 3 second response to a National Hockey League API endpoint event.

Blockchain Project Website | *HTML/CSS, AWS, ETH, ReactJS*

- Responsible for back-end and interactive front-end in ReactJS to drive user engagement and visual appeal on project website founded on charitable aspects - affordable housing & climate change relief.

Automated Busbar Insulator Assembly | *C, C++, MATLAB, Python, 3D Printing, Controls*

- Designed and programmed control system in C/C++, with data analysis completed in MATLAB, that interfaces with hardware components used to snap plastic covers on precision stamped busbars.

Education

Georgia Institute of Technology - OMSCS August 2022 - Present

MSE Computer Science - Computing Systems

- Completed Courses:
  Advanced Internet Systems & Applications, Graduate Operating Systems, Information Security, Machine Learning for Trading, Computer Networks

University of Michigan - Ann Arbor Grad. May 2020

BSE Aerospace Engineering

Skills

Languages: C, C++, Python, Java, Typescript, HTML/CSS, LaTeX, VBA

Tools: AutoCAD, NX, Fusion360, EAGLE, Teamcenter, Unix Shell, MATLAB, MS Office, PowerBI, VS Code, IntelliJ CLion/PyCharm, PlatformIO, ESP-IDF

Frameworks/Data Management: React, Node.js, Flask, Material-UI, Neo4J, NoSQL, SQLite