DRAKE RUNDELL

Aerospace Engineer/Student

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EXPERIENCE

Design Release Engineer - Air Delivery Systems

General Motors - Vehicle Manufacturer

July 2021 - Present Warren, MI

- Currently supporting production and future components with design/analysis study, managing supplier contact, overseeing validation to testing methods, and supporting cross functional communication to program teams.
- Ensure engine designs win in their market segment with the safest and highest quality air delivery components through execution to program teams.
- Conduct comprehensive benchmarking activities to execute launch excellence and deliver flawless launches, while creating leading edge designs that meet customer's expectations for safety, quality, cost & mass.

Advanced Manufacturing Engineer

Williams International - Small Gas Turbine Manufacturer

June 2020 - July 2021 Pontiac, MI

- Worked within the electrical manufacturing cell focusing on the development of tooling and fixtures for precision electromechanical assemblies.
- Assisted development of plastic additive area within cell that provides low-cost and rapid manufacturing of tooling using fused deposition modeling while progressing to producing production hardware using resin additives.
- Developed and revised tooling and process plans for low- and high-level assemblies to improve efficiency and reduce errors to assist with 6S continuous improvement effort.

Mechanical Engineer Internship

Falcon Stamping Inc. - Mfg. of Precision Stamped Busbars

June 2017 - August 2019 Howell, MI

- Constructed control systems with machined metals, automated mechanics and fused deposition modeling (FDM) technologies.

EDUCATION / COURSES

BSE in Aerospace Engineering

University of Michigan - Ann Arbor

Graduated May 2020 Ann Arbor, MI

- 3.43/4.0 Cumulative GPA
- Simulink/MATLAB used extensively during education.
- Undergraduate coursework in Aerodynamics, Aerospace Computational Methods, Controls, Propulsion, Structures, Systems/Design, Dynamics, Electrical Circuits, Materials & Manufacturing, Numerical Methods, Problem Solving and Programming, and Space Flight Mechanics

PROJECTS

Automated Busbar Insulator Assembly

- Designed and programmed entire 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.

Blockchain Project Website

- Part of a team working on a Blockchain project founded on charitable aspects - affordable housing & climate change relief.
- Responsible for interactive frontend in ReactJS to drive user engagement and visual appeal on project website.

Lunar Lander Truss Simulation

- Simulated a leg of a lunar lander using differential equations stemming from the physics of damped oscillations in stiff links connected to nodes to construct a truss.
- Determined stability regimes and convergence of the equations of motions for Forward Euler, Adams Bashforth, and Runge-Kutta numerical schemes.

Regenerative Nozzle Cooling Simulation

- Simulated the solution to the heat transfer equation using a finite-element solver on the three domains in order to display heat transfer in a regeneratively cooled nozzle.

SKILLS

Programming

- **LaTeX (4+ years)** ●●●●●
- **MATLAB (5+ years)** ●●●●○
- **Python (5+ years)** ●●●○○
- **C/C++ (3+ years)** ●●○○○
- **ReactJS (1+ years)** ●●○○○

Software/Productivity

AutoCAD	ANSYS	EAGLE
Fusion360	MATLAB	MS Office
NX	SAP	SIMULINK
SOLIDWORKS	TEAMCENTER	VSCODE

Technology

Arduino	Automation
Circuit Building	FDM Printing
Image Analysis	Process Development
Prototyping	Resin Additives