Brandon Manley

Upon request brm2495@gmail.com linkedin.com/in/BrandonManley

Skills Summary

Software: SolidWorks, Creo, Siemens NX, ANSYS Workbench, MATLAB, Calibry Nest, MS Office Suite

Simulation: Static/Transient Thermal, CFD Flow, Static Structural FEA, Ansys Composites Prep/Post

Technical: Circuit wiring, Pump and fluid system troubleshooting, 3D scanning, Technical documentation

Languages: MATLAB, C, C++, Java, Arduino

Experience

CanEV & University of Victoria — Sept 2024 - Dec 2024

- Developed a MATLAB tool for static and transient thermal analysis of bus bars, optimizing cross-sectional design under continuous current.
- Modeled and simulated bus bar geometries in SolidWorks and ANSYS Workbench, validating designs to meet minimum SF of 2.
- Generated full-scale chassis renders by stitching 3D point cloud data using Calibry Nest, increasing preliminary design output by 25%.
- Developed an integrated sensor circuit for 6-axis accelerometers, enabling data acquisition on vehicle dynamics under real time load testing.

WiserTech Marine Solutions — May 2023 - Aug 2023

- Programmed and calibrated an open source irrigation system using CNC-based robotics to control water output and crop diagnostics.
- Maintained and repaired pump components, mechanical linkages, and gantry tracks, ensuring uninterrupted operation and achieving 90% accuracy.
- Delivered concise technical documentation to cross functional teams, improving maintenance reliability and communication component efficiency.

Ballard Power Systems Inc. — Sep 2021 - April 2022

- Conducted fluid flow analysis of hydrogen fuel cell coolant subsystems using hand calculations and SolidWorks Flow Simulation.
- Identified pressure drop zones and proposed design modifications that improved system performance.
- Generated GD&T compliant manufacturing drawings and collaborated with machinists to ensure tolerance adherence and production quality.
- Participated in cross functional team reviews to support smooth handover of design changes into manufacturing and validation stages.

Clubs / Extracurricular

WEC Western Engineering Competition: Senior Design — Jan 2024

- Designed and built a mechanical 4-bar linkage system to collect scattered objects, achieving an 80% success rate.
- Programmed RGB sensors to distinguish debris and obstacles based on refracted light values.
- Communicated complex technical concepts to judges and team members in a time sensitive, high pressure environment.

UVic Formula Hybrid — July 2024 - June 2025

- Applied DFM principles to design, simulate, and manufacture safety critical composite components including the driver's seat and aerodynamic side pods.
- Utilized ANSYS Composite Pre/Post ACP to validate design requirements and led hands on fabrication using vacuum resin infusion to manufacture high precision aero components.
- Validated physical test results against FEA simulations, confirming digital analysis accuracy.

UVic Formula SAE — May 2021 - Apr 2022

- Designed and installed low-profile oil pan baffles to mitigate fluid surging during high G cornering.
- Performed wheel alignment and calibration to improve vehicle cornering performance, demonstrating practical problem solving in dynamic environments.

Education

University of Victoria — **Sept 2020 - Dec 2024**

Bachelor of Engineering - Mechanical Engineering — *Victoria, B.C*

Camosun College — **Sept 2019 - May 2020**

Engineering Transfer Certificate — *Victoria, B.C*