

Oluwalonimi Ajayi

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Education

University of Manitoba | Winnipeg, MB

Expected May 2025

Bachelor of Science in Mechanical Engineering- Co-op/IIP Option

Experience

Elmer's Manufacturing

May 2023 – December 2023

Manufacturing Engineer (Student)

Altona, MB

- Revamped a paint-line fixture for harrow sections with a boltless design and aligned the fixture rotation axis with the section center of gravity, leading to a 30% and 87% reduction in assembly and dismantle time respectively
- Generated 3D models of a cobot, small scale robots and a FANUC dual arm welding robot, including their anticipated shop area, to assess environmental interactions and validate proper selection prior to procurement
- Designed, built and tested a custom brake tool to bend metal brackets that were formerly outsourced, in-house
- Redesigned two mobile storage racks with Autodesk Inventor, cutting the average cost and weight by 42% and 15% respectively while maintaining the necessary payload using FEA and hand calculations to validate analysis
- Developed new balance weight procedure for auger flighting using scrap material, aiming to reduce costs by 95%
- Created design specifications by contacting stakeholders and maintained constant communication to ensure that the final product exceeds all initial expectations while adhering to all company safety and quality standards

Extracurriculars & Projects

University of Manitoba SAE Baja Manufacturing Lead

January 2023 – Present

- Managed the manufacturing of 200+ metal parts in a team of 30+ student engineers
- Reviewed DFM/A across various systems and gave feedback to enhance manufacturing quality and speed

University of Manitoba SAE Baja Testing Lead

June 2023 – Present

- Organized system/component testing for all sections of the vehicle to gather data for loading conditions, validate analysis, measure progress and properly tune all off the shelf parts for the vehicle
- Conducted analysis on various permanent and non-permanent joints and their weight to stiffness ratio to aid the team in the set goal to drop the car weight by 15%
- Worked with sponsors and industry partners to design, adapt and source testing equipment

University of Manitoba SAE Baja Powertrain Co-lead

July 2022 – June 2023

- Co-led a sub team in a 40-member organization to secure 24th place among 86 universities, completing 23 laps with an average lap time of 11:17.26 in the BAJA SAE 4-hour endurance race by designing a Powertrain system for a 650lb vehicle, outperforming despite exceeding the average Baja weight by about 150 lbs
- Designed battery mounts and safety guards for all rotating components using SolidWorks, sheet metal and 3D printed parts to ensure the safety of the driver and anyone working on the car
- Reduced assembly time by substituting unique fasteners with common alternatives while ensuring rule compliance
- Created powertrain design presentation slides for team sponsors and the Baja SAE Oregon event, effectively communicating technical details and project progress
- Organized weekly meeting to ensure that all section members were assigned tasks and kept up to date

RC_Camera_Mover

March 2023 – Present

- Designed a 3D printed attachment used with any camera/tripod stand to enable remote control of a camera's yaw using IR sensors and an Arduino
- Built a program to automatically track and center a presenter within the frame using the Simulink CV toolbox

Solar Panel Cleaning Drone

May 2023 – October 2023

- Conducted FEA on the drone under various loads to identify possible failure modes and used root cause analysis after the first crash to redesign the mount to reduce the tilt motor vibration and improve stability

Skills

Software: SolidWorks, CATIA V6, AutoCAD, Autodesk Inventor Pro., MATLAB, Python, Arduino, ANSYS, Simulink

Prototyping: Machining (Lathes, Brake, Hand Tools), 3D printing, Sheet Metal, Laser cutting, MIG welding

Other Technical Knowledge: Control Theory, PLC, Design for Manufacturing and Assembly, Topology Optimization