

Fiona Mackenzie

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289-885-6039



SKILLS

CAD/3D Modeling: Proficient in SolidWorks for design and simulation.

- Used in Torsional Stiffness Improvements on 4x Rowing Hulls Project

CFD and Simulations: Experience using ANSYS Fluent for computational fluid dynamics and fluid flow simulations.

- Used in Leaning Tower of Pisa Project

MATLAB Software: Numerical Analysis.

Microsoft Excel: Data Organization and Analysis.

Communication: Ability to work well in a team, sharing ideas, listening and collaborating.

Problem Solving: Problem Identification and the organization of steps towards a solution.

EDUCATION

Bachelor of Science in Mechanical and Materials Engineering (BEng.)

September 2021 – June 2025

Relevant Coursework: Fluid Mechanics, Thermodynamics, Heat Transfer, Materials, Mechanical design, Engineering Mathematics, Electrical Engineering, and Reverse Engineering.

EXPERIENCE

Linde Canada Inc., Mississauga Ontario

May - August 2022

Mechanical Engineering Summer Student Co-op, Customer Service Department

- Reviewed and updated cryogenic equipment asset information in the Enterprise Asset Management system (EAM).
- Reviewed and verified Canadian Registration Numbers (CRN) for pressure retaining components listed on Linde standard drawings; obtaining copies of applicable statutory declarations from vendors as required.
- Identified gaps/opportunities between the existing Linde standard maintenance program for cryogenic systems and industry best practice.

- All tank information organized using Microsoft Excel.

Urban Life Solutions, Mount Albert

May - August 2024

- Landscaping, property planning and design.
- Environmental and safety implications.
- Operating motorized tools (Trimmer, Blower, Mowers, etc.).
- Driving box pickup truck to various sites in the GTA.

PROJECTS

Tortional Stiffness Improvements on 4x Rowing Hulls – Fluidesign

2025

- Increasing tortional and lateral stiffness, by altering dimensions and materials used on boats. Vibration testing, SolidWorks design and simulations, material three-point bend tests.

Leaning Tower of Pisa – Advanced CAE Computational Heat and Fluid Flow

2024

- Analysing air flow around the Tower of Pisa, using Ansys Fluent simulations.
- Setting up geometry of domain, determining mesh properties and size, performing simulations.

Green Hydrogen for Transportation - Research Project

2022

- Exploring the future of green hydrogen vehicles (Hydrogen fuel cells).
- Researched green hydrogen as a sustainable alternative fuel for transportation.
- Analyzed its zero-emission production via renewable-powered electrolysis.
- Evaluated challenges in onboard storage and vehicle integration.

CERTIFICATES

- SolidWorks Additive Manufacturing Associate – 2024
- SolidWorks Surfacing Professional – 2024
- SolidWorks Simulation Associate – 2024
- SolidWorks CAD Design Associate (CSWA) – 2022
- CPR Certificate – 2023