

Sophia Ize-Iyamu

Mechanical Engineer | CAD, Robotics, Thermofluids, AI & Data | Engineer & MBA | Python, SQL, SolidWorks, MATLAB

Canada and U.S. work-eligible | Open to relocate

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SUMMARY

Mechanical engineer who takes a system from CAD and analysis through fabrication and test, across robotics, machine design, thermofluids, data, and applied AI. Fluent in SolidWorks, Fusion 360, CATIA, and AutoCAD, and in Python, SQL, MATLAB, and Arduino. At Imperial Oil I turned production data from a 200,000 barrel-per-day asset into a \$60.6M opportunity, and across school and research I've built an autonomous maze rover, a four-axis CNC machine, and applied machine-learning and data tools. Engineer and Rotman MBA, CFA Level I candidate.

SKILLS

- **CAD & Design:** SolidWorks, Fusion 360, CATIA, AutoCAD, Engineering design and drawings, Materials and equipment selection, Manufacturing and prototyping
- **Programming, AI & Data:** Python, SQL, pandas, scikit-learn, statsmodels, MATLAB, Arduino / C++, Machine learning and applied AI
- **Analysis & Methods:** Simulation and numerical methods, Control systems, Lean and continuous improvement, Data analysis, statistics, and visualization

PROFESSIONAL EXPERIENCE

Imperial Oil

May 2023 - Aug 2024

Engineering Co-op (PEY)

- Turned raw operating data from a 200,000 barrel-per-day asset into a \$60.6M margin-improvement opportunity, then communicated the recommendation to operations leadership.
- Built scenario and sensitivity models that supported more than \$10M in capital decisions, weighing cost and risk for each option.
- Ran analyses on production systems and translated them into decisions for operations and trading stakeholders.

University of Toronto, Ted Rogers Centre for Heart Research

May 2021 - Apr 2025

Research Assistant (Engineering and Data)

- Built and validated six predictive models across four datasets, improving accuracy 10% over baseline through rigorous testing.
- Owned the analysis pipeline end to end in Python, from data curation through validation, cutting experiment turnaround 30%.

Black Founders Network

May 2025 - Aug 2025

Product & Strategy Associate

- Queried and analyzed engagement data in Python and SQL to surface the levers that moved conversion.
- Built AI-enabled analytics workflows that cut model-iteration time 60%.

SELECTED ENGINEERING PROJECTS

[View the engineering portfolio](#)

4-Axis CNC Milling Machine

- Concept-to-CAD design of a four-axis desktop CNC mill; I authored the full assembly and all sub-assembly engineering drawings, developed through mechanism trade studies and a bill of materials (MIE243).

Autonomous Maze Rover

- Arduino rover that localizes in an unknown maze and delivers a block using a breadth-first path search; I worked on the mechanical CAD and the control software (MIE444).

Water-Refrigerant Cooling Capstone (Enersion)

- Capstone for cleantech client Enersion: a water-refrigerant (R718) cooling system designed from cycle calculations through component selection to a costed 3D-CAD design.

Cadence (Applied AI)

- Local-first AI tool that turns an unstructured conversation into a structured dashboard in about a minute, built in Python with a local LLM and schema-constrained output.

Credit Default Risk Model (Data Science)

- Machine-learning app that predicts default risk and turns it into a lending decision, with a threshold that makes the business trade-off visible. Python and scikit-learn.

EDUCATION

University of Toronto, Rotman School of Management - MBA

Expected Apr 2027

GPA 3.72/4.00 · CFA Program Candidate (Level I)

University of Toronto - BAsC, Mechanical Engineering

2020 - 2025

GPA 3.81/4.00 · Minors: Engineering Business, Mechatronics/Robotics, Bioengineering

CASE COMPETITIONS & AWARDS

- **Competitions:** WIL x Honda 'Powering Through Noise' (top 5) · RBC Capital Markets Case (top 10) · TD M&A Case (top 10) · CIBC Product Growth Strategy (top 10) · Kearney Rotman Prize (top 8) · QuantChallenge (top 15)
- **Awards:** Engineering Scholarship for Women · Dean's List · Skoll BAsC-MBA Scholar · FinHub Fellow

LEADERSHIP

- Vice President (Clubs), Rotman Graduate Business Council, coordinating cross-functional teams and events.
- Authored independent equity-research reports applying DCF and comparable analysis.