

EDUCATION**University of Calgary**

Master of Public Policy, GPA 4.0/4.0

Calgary, AB

2023 – 2024

- **Capstone Project:** Optimizing Transmission Infrastructure for Renewable Energy Integration in Alberta.

University of Ottawa

BASc in Chemical Engineering, Summa Cum Laude, GPA 3.97/4.0

Ottawa, ON

2013 – 2018

- **Thesis:** Artificial Neural Networks as Metamodels for the Multi-Objective Optimization of Biobutanol Production.
- Graduated with the highest academic standing in the Department of Chemical and Biological Engineering.

PROFESSIONAL EXPERIENCE**Government of Alberta, Executive Council – Policy Coordination Office****Edmonton, AB**

Manager, Business Planning and Reporting; Full-time

Dec 2024 – Present

- **Highlight:** Oversee the development and implementation of data-driven systems to streamline mandate tracking, policy reporting, and decision-making support at the highest level of the provincial government.
- Facilitate cross-ministry collaboration by providing strategic guidance and training to enhance capacity for policy reporting and alignment with government priorities, ensuring transparent communication to senior decision-makers.

Policy Analyst; Full-time

May 2024 – Dec 2024

- **Highlight:** Enhancing policy capacity within the government by coordinating the development and delivery of public policy training materials for individual contributors and senior managers.
- Leading the data cleaning and migration of decision-making scheduling software, enhancing functionality and providing critical insights to the Premier's and Ministers' offices.
- Awarded the 2024 Premier's Public Service Award for Service Delivery Innovation as part of Policy Coordination Office, the highest level of recognition in the Alberta Public Service.

Imperial Oil/ExxonMobil, Kearl Oil Sands**Wood Buffalo, AB**

Extraction & Tailings Facilities Engineer; Fly-in/Fly-out 2-weeks on/2-weeks off

Jan 2022 – Mar 2023

- **Highlight:** Led profitability initiatives to increase unit run length by 100% thereby reducing shutdown frequency and increasing unit utilization, via design changes and metallurgy upgrades.
- Led assessments of unit operation to determine root-cause issues and barriers to profitability, safety, and reliability. Coordinated teams of operators, technologists, and maintenance personnel to identify and address areas of inefficiency.

Imperial Oil/ExxonMobil, Strathcona Refinery**Edmonton, AB**

Distillation & Hydrotreating Process Engineer-in-Training; Full-time

Aug 2020 – Jan 2022

- **Highlight:** Oversaw performance optimization efforts for process units generating a cumulative P&L of \$200M annually and achieved record asphalt production by resolving bottlenecks and longstanding reliability challenges. Provide 24/7 on call technical support, acting as a focal point and escalation contact for high priority technical issues.
- Tapped by management to lead a \$52M Crude Unit improvement project and was recognized for consistently challenging existing practices to uncover process improvements.

Process Development Engineer-in-Training; Full-time

Jan 2019 – Jul 2020

- **Highlight:** Designed and oversaw the execution of a new injection facility in response to off-spec bunker fuel, bringing regulatory compliance standards in-line with expectations to prevent a potential \$9M in annual penalties.
- Led early-stage project planning and capital budgeting of crude and fluid catalytic cracking units margin projects to determine feasibility and profitability (NPV, DCF, IRR), ultimately delivering net benefits of \$21M per year.

Process Control Engineering Co-op; Full-time

Jan 2016 – Dec 2016

- **Highlight:** Identified vessels susceptible to brittle fracture and developed the logic for smart alarm implementation onto the Distributed Control Systems (DCS), to prevent cold safety events.
- Analyzed historical process data of fired equipment and developed correlations for statistical dynamic fuel gas clamps to mitigate furnace flooding/bogging risks.

RESEARCH EXPERIENCE

Natural Sciences and Engineering Research Council of Canada (NSERC) REDEVELOP Program Calgary, AB

Circular Economy Team Lead and Researcher

Nov 2023 – May 2024

- Researched the co-development of geological CO₂ sequestration with geothermal energy extraction and lithium brine recovery in Alberta.

University of Ottawa, Centre for Research in Photonics

Ottawa, ON

Research Assistant

May 2018 – Aug 2018

- Designed and built a portable microfluidic system utilized for the detection of disease in biofluids using long-range surface plasmon-polariton waveguides.

Tianjin University, Key Laboratory of Membrane Science and Desalination Technology

Tianjin, China

Visiting Research Assistant

May 2017 – Aug 2017

- Researched, fabricated, and characterized polymer matrices for membrane distillation using non-destructive evaluation methods: XRD, SEM, TEM, and FTIR.

University of Ottawa, ENERGY - S.M.A.R.T. Group

Ottawa, ON

Research Assistant

Sept 2014 - Apr 2015

- Conducted research on adsorbents recovery ability of carbon dioxide to recycle to produce hydrocarbon fuel, which is an alternative to carbon capture and sequestration (CCS).

LEADERSHIP EXPERIENCE

Imperial Oil (Edmonton) United Way Campaign Chair

Jan 2021 – Nov 2021

- Provided leadership and direction to 15 committee members raising a total of \$338K, surpassing campaign goals. Awarded Employee Campaign Chair of The Year by United Way of The Alberta Capital Region.

Imperial Oil (Edmonton) United Way Campaign Co-Chair and Events Lead

Jun 2020 – Dec 2020

- Owned the ideation, planning and execution of 7 new virtual and physical events to raise a total of \$332K, surpassing campaign goals. Nominated for Outstanding Committee Member of the Year.

CoV-Informed (Risk and Strategy Consulting) Co-Founder

May 2020 – Oct 2021

- Provided strategy consulting to small businesses by applying data analytics to provide insights. Selected as a top team amongst 1800+ competitors from 89 countries in MIT's Beat the Pandemic Hackathon.

Strathcona Working from Home Engagement Committee Lead

Mar 2020 – Oct 2020

- Engaged 500+ employees at Strathcona Refinery by starting employee well-being initiatives using a collaboration-centered approach to combat loneliness and disengagement as a result of the COVID-19 pandemic.

Khair4All (Poverty Alleviation Charity) Co-Founder and Director

Aug 2011 – June 2017

- Administered a budget of \$150K and managed the daily activities of 50+ volunteers across fundraising and operations.

COMMUNITY INVOLVEMENT & EXTRACURRICULAR ACTIVITIES

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| • Patient Visitor, Covenant Health | Mar 2025 – Present |
| • Board Member - Communications Coordinator, Alpine Club of Canada Edmonton Section | Feb 2025 – Present |
| • Mealtime Companion, Bethany Riverview | Sept 2022 – Apr 2024 |
| • Food Distribution Volunteer, MFNS Food Bank | Mar 2022 – Apr 2024 |
| • The Fraser Institute Student Ambassadorship | Feb 2024 – Mar 2024 |
| • Awards Committee Member, Graduate Student Association, University of Calgary | Jan 2024 – Mar 2024 |
| • Virtual Math & English Tutor, YYCGenerosity | Apr 2021 – Nov 2021 |
| • Responder, Edmonton Regional Search and Rescue Association | Jan 2020 – Nov 2021 |
| • Patient Visitor & Pandemic Support Volunteer, Covenant Health | Jul 2019 – Nov 2021 |
| • Treasurer, TM4PM Toastmasters Club | Oct 2019 – Sep 2020 |
| • Meal Prep Volunteer, Hope Mission | Sept 2018 – Sept 2019 |
| • Student-Athlete, University of Ottawa Novice Rower | Sep 2017 – Mar 2018 |
| • President, Society of Environmental Engineering, Development, Management and Science | Sep 2017 – May 2018 |
| • Elected Engineering Faculty Council Member, University of Ottawa | Sep 2015 – Apr 2016 |
| • Research and Development Specialist, Enactus Canada | Sep 2015 – May 2016 |

PUBLICATIONS

- G. Fellows, **A. Elmeligy**, K. Koch, R. Mansell, D. Rama, I. Skendrovic “Energy Transitions Roundtable Proceedings”, School of Public Policy Paper Series, August 2024.
- **A. Elmeligy**, M. Bailey “Optimizing Transmission Infrastructure for Renewable Energy Integration in Alberta”, School of Public Policy Master of Public Policy Capstone Project, August 2024.
- **A. Elmeligy**, P. Mehrani, and J. Thibault “Artificial Neural Networks as Metamodels for the Multi-Objective Optimization of Biobutanol Production”, Applied Sciences (ISSN 2076-3417), June 2018.

COMPETENCIES

Programming & Automation: VBA, Python, Java, R, C, Fortran.

Modeling & Engineering Systems: Aspen HYSYS/UniSim, Honeywell Control Language, Minitab, LabVIEW.

Enterprise Tools: Microsoft Office Suite, Microsoft Dynamics, SharePoint, Jira, Power BI.

AI & Productivity Platforms: Microsoft Copilot (incl. Copilot Studio agents), Google Gemini, ChatGPT.

CERTIFICATIONS

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| • Private Pilot License - Aeroplane | • Intermediate First Aid & Level C CPR | • Indigenous Relations Training Program |
| • Night Rating | • Wilderness Advanced First Aid | • Citizens' Police Academy (Edmonton Police Service) |
| • Restricted Operator Certificate - Aeronautical | • Mental Health First Aid | • ASME B31.3 Code Design |
| • Incident Command System 100 | • Avalanche Skills Training 1 | • Slurry Multi-Species PipeFlow Model |
| • Accelerated Freefall Program | • Industrial Firefighting Fundamentals | |

AWARDS

- 2024 Premier's Public Service Award for Service Delivery Innovation
- 2024 REDEVELOP Conference – Placed 1st out of 3 teams (\$1,000)
- 2023 National Sciences and Engineering Research Council of Canada's (NSERC) CREATE Grant (\$7,130)
- 2023 Giving Day Graduate Scholarship in the School of Public Policy (\$5,000)
- 2021 United Way Alberta Capital Region Employee Campaign Chair of The Year (Private Sector)
- 2020 United Way Alberta Capital Region Outstanding Committee Member of the Year Nominee
- 2020 MIT Beat the Pandemic II Hackathon Finalist (\$1,500)
- 2019 & 2020 Imperial Oil Strathcona Excellence Award (People and Culture)
- 2018 Canada Hatch Plant Design Competition - Placed 2nd out of 22 universities across Canada (\$1,000)
- 2018 Canadian Society of Chemical Industry Award (Engineering)
- 2018 Faculty Plaque in Chemical Engineering
- 2017 International Experience Scholarship (\$6,000)
- 2016 University of Ottawa Merit Scholarship (\$1,000)
- 2015 – 2017 Chemical Engineering Professors' Scholarship (\$250 x3)
- 2014 Undergraduate Research Opportunity Program (UROP) Award (\$1,000)
- 2013 – 2018 University of Ottawa's Renewable Admission Scholarship (\$4,000 x4)
- 2013 – 2018 Dean's Honour List
- 2013 Dean's Merit Scholarship (\$5,000)

HOBBIES & INTERESTS

Adventure Pursuits: Aviation (private pilot), ultra marathons, mountaineering, cross-country skiing, downhill skiing, backcountry hiking, rock and ice climbing, biking, skydiving, scuba diving.

Sports: Flag football (uOttawa intramurals), rowing (uOttawa men's roster), rugby (Saudi Arabia national rugby league team, Jeddah Rugby Football Club Juniors Under-19), football (Jeddah Jaws), soccer (high school varsity), Brazilian jiu-jitsu, boxing.

Creative Interests: Photography (landscape, architecture, portrait), blogging, vlogging, reading, chess.