

Julia Patterson

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julia-patterson.com | BAsC Honours Chemical Engineering

SKILLS

Python, AspenPlus, P&IDs, process design 3D modelling, AutoCAD, experimental design, mechanical material testing, LaTeX, MS Office, MS Excel VBA, research, technical writing, organizational skills, Spanish B1, German A2

EXPERIENCE

Assistant Operations Manager

Ravens Rest Retreat

July 2025 - Sept 2025

Moose Brook, NS

- Increased efficiency of financial reporting and management by 300%, replacing manual input with MS Excel and the use of VBA
- Managed Squarespace website and Square online store site using built-in features and customized HTML/CSS

Research Intern

Emnandi Bioplastics × ASTUTE Centre of Excellence

Jan 2024 - June 2024

Swansea, Wales

- Conducted 50+ annealed polymer ageing tests such as DSC, MFI, tensile tests, and impact tests on recycled polymers to determine mechanical properties and reprocessibility for automotive applications
- Performed a comprehensive literature review on PLA and recycled PLA properties, supporting innovative projects and advancing understanding in the field

Geotechnical Engineering Research Assistant

Hamburg University of Technology

May 2023 - Dec 2023

Hamburg, Germany

- Designed experimental test parameters and conducted 150+ geotechnical laboratory tests to deduce the effects of salinity on clay and the adhesion properties in geotechnical engineering applications such as tunnelling
- Assessed experimental results from multiple softwares and LiDAR point clouds using Python
- Performed literature reviews on the novel research of salinity effects on clay for design criterion

Project Engineering Co-op Student

Zeton Inc.

Sept 2022 - Dec 2022

Burlington, ON

- Identified and inspected 250+ instruments, valves, and equipment using P&IDs and 3D models and VBA for automation to significantly reduce labour time
- Coordinated with multiple vendors and created purchase orders and BOMs using Microsoft Dynamics ensuring correct and efficient delivery

Engineering Co-op Student

Environment and Climate Change Canada

Jan 2022 - Apr 2022

Gatineau, QC

- Utilized technical writing skills to prepare 10+ internal guidance documents and SOPs for implementation of the QA program, including verification and validation, of the Clean Fuel Regulations
- Created several detailed presentations to successfully explain the complexity of the regulations to stakeholders

Student Research Assistant

SNOLAB - SNO+ Experiment

May 2021 - Aug 2021

Sudbury, ON

- Aided in administering controls testing for the commissioning of 2 underground chemical plants ensuring the project stayed on schedule
- Collaborated with R&D team conducting QA testing and assisting isolation of an impurity in one of the chemical compounds

PROJECTS

Solar Desalination | Mechanical design, Python, AutoDesk Fusion 360

University of Waterloo, Fourth Year design project

June 2024 - March 2025

Waterloo, ON

- Mechanical and materials co-lead in the development and design of a novel modular scale solar still for residents of Bangladesh
- Produced water throughput results within a 5% margin compared to other modular designs
- Competed in campus finals of Map the System Canada, placing top 5 of 45 applicants

EDUCATION

Bachelor of Applied Science Honours (Distinction) in Chemical Engineering

University of Waterloo

Sept 2020 - Apr 2025

Waterloo, ON

- Keith Carr Memorial Award recipient 2023 for leadership in the university and community
- Engineering Society President's Award recipient Fall 2021, Spring 2022 for valuable assistance to the activities of the Society

Chemical engineering exchange student

Swansea University

Jan 2024 - June 2024

Wales, United Kingdom

- Tree planting society, mountaineering and climbing society, windsurfing society, hiking society, stand-up paddleboard society