Katherine Langille

613-668-8713 | klangill@uwaterloo.ca | linkedin.com/in/katherine-langille | **Portfolio**

Skills

Technical: Python, C++, JavaScript, HTML/CSS, Git, Figma, SolidWorks, Microsoft Office, Mindzie, Disco
Languages: French, Conversational Spanish
Other: Project Management, Technical Writing, Public Speaking, Engineering Design, Data Science, Process Mining

Experience

Data Science and Process Mining Analyst Oct. 2024 – Mar. 2025
Software Solutions, Transport Canada *Ottawa, ON*

- **Led two process mining projects** and **analyzed large-scale process logs** using Python to identify inefficiencies in government workflows, delivering **data-driven recommendations**.
- Designed a **cost-effective, secure, and computationally efficient machine learning pipeline** to perform classification tasks to reduce administrative burden and save resources.
- Developed **process conformance models** and **interactive dashboards**, translating data insights into actionable strategies for cross-functional stakeholders.

Cognitive Engineering Research Assistant May 2024 – Aug. 2024
Advanced Cognitive Engineering Lab, Carleton University *Ottawa, ON*

- Developed a situational awareness task **video game** using Godot (Learn more here)
- Wrote Python scripts to create experiments and edited MATLAB scripts for **EEG data processing** and analysis
- Contributed to **UX/UI design** of an app including user needs assessment through focus group data analysis

Manager July 2021 – Aug. 2023 (Seasonal)
Mahone Bay Pool *Mahone Bay, NS*

- Oversaw the safety of **over 100 patrons a day** while running programs and ensuring their quality
- Managed **7 employees**, scheduling, and finances
- Appointed to the **Board of Directors**

Projects

Semantic Field Analyzer | *Python, Web Scraping, Data Analysis* Feb. 2022

- Developed code in Python that utilises web scraping to facilitate **dynamic semantic field analysis**
- Allows users to input a word, retrieves relevant data from a website, and analyzes a novel to quantify occurrences

Garbage Collection Robot | *Python, Pyxel, Arduino, Mechanical Design* YouTube | Oct. 2023

- Won **2nd place** in the Waterloo Engineering Competition's Senior Design Category with 2 teammates
- Designed a two-wheeled, laptop GUI-controlled robot that uses a rotating arm to move trash and avoid obstacles

Arthritis Pill Bottle | *Technical Design Report, Prototyping, Engineering Analysis* Dec. 2023

- Led a comprehensive **iterative design process** within a 6-member team for an arthritis-friendly, pill bottle, ensuring enhanced usability by conducting needs assessment, engineering analysis, prototyping, and testing
- Authored two **detailed technical reports** outlining project methodology and outcomes

Education

University of Waterloo Waterloo, ON
BASc. Biomedical Engineering, Honours, Co-Operative Program *Sep. 2023 – May 2028*

- GPA: 3.95
- Awards: 1A and 1B Dean's Honours List, Alumni @ Microsoft Entrance Scholarship in Engineering
- Engineering Society Rep, **Varsity Squash**, SERVE Volleyball Club, Intramural Hockey and Volleyball
- **Responder and Assistant Trainer** on the Campus Response Team where I contribute to the safety of the university community by responding to medical and mental health emergencies and run trainings
- Relevant courses: Digital Computation, Data Structures and Algorithms, Design of Biomedical and Health Systems

Awards

Lifesaving Society of Nova Scotia Leadership Award Nov. 2023
Paul Harlick Award for Most Outstanding Class Representatives Apr. 2024