Katherine Langille

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

SKILLS

Technical: Python, C++, JavaScript, HTML/CSS, Git, Figma, SolidWorks, Microsoft Office
Languages: French, Conversational Spanish
Other: 3D Printing, Project Management, Technical Writing, Public Speaking, Engineering Design

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

SnowFake | *Python, pygame, Git*   Mar. 2022
- Collaborated with 3 other students to develop a **snowflake simulation** in Python, using Git
- Won **1st place** in a French national computer science competition, Les Trophées NSI

Ultrasound Scanline Processing | *C++*   Nov. 2023
- Developed an **object-oriented** ultrasound scanline processing system, showcasing knowledge in dynamic memory allocation, file handling, and algorithmic implementation for efficient A-mode beamforming

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, rotating pill bottle project, ensuring enhanced usability
- Conducted needs assessment, engineering analysis, prototyping, and testing
- Authored two **detailed technical reports** outlining project methodology and outcomes

EXPERIENCE

Cognitive Engineering Research Assistant   May 2024 – Present
Advanced Cognitive Engineering Lab, Carleton University   *Ottawa, ON*
- Wrote Python scripts to create experiments and edited MATLAB scripts for **EEG data processing** and analysis
- Contributed to **UX/UI design** of SENSE-APP project including user needs analysis and wireframing
- Developed and implemented driving experiment environments using Prepar3D

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
- Recently appointed to the **Board of Directors**

EDUCATION

University of Waterloo   Waterloo, ON
BASc. Biomedical Engineering, Honours, Co-Operative Program   *Sep. 2023 – May 2028*
- GPA: 3.99
- Awards: 1A Dean's Honours List, Alumni @ Microsoft Entrance Scholarship in Engineering
- Engineering Society Rep, 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

PIPSC Legacy Foundation Scholarship   Mar. 2023
Lifesaving Society of Nova Scotia Leadership Award   Nov. 2023
Paul Harlick Award for Most Outstanding Class Representatives   Apr. 2024