

# Melanie Foltak

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## EDUCATION

**University of Waterloo** | Bachelor of Software Engineering

September 2021 - May 2026

Relevant Courses: Data Structures & Management, Data Abstraction & Implementation, Operating System, Algorithms

## SKILLS

**Languages:** Python, C++, C, SQL, Java, Swift, VB.NET, C#, TypeScript, HTML, CSS

**Tools:** React.js, AWS Cloud Services, Pandas, Unity, Swift Playground, Git, Raspberry Pi, Arduino

## EXPERIENCE

**Hamburg University of Technology** | AI Engineer

May 2024 - August 2024

- Created a **Python** based localization system using **ultra-wideband sensors** for precise tracking of multiple robots
- Engineered a **PyTorch vision-based AI** system for real-time detection and classification of electrical ports that was deployed on **quadruped robots** enabling automated probing of electrical ports for inspection of civil infrastructure

**Toronto Dominion Bank** | Conversational AI Developer

January 2023 - December 2023

- Automated comparison of training and test data in **Python** with chi-squared test, **reducing manual workload by 8 hrs**
- Optimized performance summary generation process for **13 chatbots** by incorporating **data extraction and manipulation** methods resulting in transitioning a monthly human-driven activity to a **30 mins automated workflow**
- Developed a **Python** script to parse resumes using **NLP** for candidate ranking, achieving an **86% success rate**
- Leveraged **Pandas** to create custom pivot tables, analyzing data for **94,000+ employees** to summarize FinTech trends
- Designed **4 VR** training exercises using **C#** and **Unity**, implementing **3D game mechanics** to improve onboarding

**Toronto Transit Commission** | Software Developer

May 2022 - August 2022

- Architected a **VB.NET** script to remotely automate Microsoft updates and deployed improved changes to entire firm
- Employed a new object-oriented design and integrated additional features **improving performance speed by 41%**
- Refactored legacy code for updating computer driver packs and registries for 6 departments enhancing usability

**Operating System Power Saving** | Technical Project Manager

January 2024 - April 2024

- Led a team of 15 undergraduate researchers, achieving a **25% reduction in timelines** through agile project planning
- Contributed to technical research and analysis on power-saving techniques that **extended battery life by 1 hour**

**Women in Computer Science Club** | Co-Chair

December 2021 - April 2024

- Organized bi-weekly events for **1600+ women in computing** while **leading 11 undergrad committee** members
- Maintained and updated club's website, increasing accessibility by implementing engaging features with **React**
- Ran 26 events promoting diversity and inclusion while **increasing participation by 300%** from previous semesters

## PROJECTS



**Plannect** | AI Social Media Connector

- Created an **AI-powered** platform built using Autocode to make requests to **OpenAI(GPT-3)**, **Typeform API** and **Mapbox API** to match nearby individuals with similar interests based on geographical location
- Leveraged **React.js** and custom **CSS** to build a responsive and accessible front-end to deliver seamless experience
- 'Best Use of AI' Ellehacks 2023 Award



**All in Good Waste** | AI Garbage Sorter

- Developed an image analysis feature using **machine learning** with Lobe.AI to categorize recycling with **94% accuracy**
- Programmed a Raspberry Pi and camera attached to stepper motors in **Python** to create a robotic arm that automates the sorting and disposing procedure; included LED and LCD display to provide real-time feedback



**SnapSpeak** | French Language Learner

- Orchestrated a **Swift Playground app**, employing **SwiftUI** and **AVFoundation** to deliver a multimodal language learning experience with both educational and test modes, integrating interactive photo and voice import features