

# Tarek Ibrahim

+1 (613) 220 7759 | [TarekIbrahim3@gmail.com](mailto:TarekIbrahim3@gmail.com) | [LinkedIn](#) | [arXiv](#) | [GitHub](#) | [Portfolio Website](#)

## EDUCATION

### Carleton University

Ottawa, Ontario

*Bachelor of Engineering, Software Engineering (Co-op) — 3rd Year*

*Expected Graduation: April 2027*

Relevant Courses: Algorithms and Data Structures, Imperative Programming, Computer Architecture, Software Design, Operating Systems, Software Requirements Engineering, Advanced C++ Programming

## SKILLS

**Languages:** C, C++, Python, Go, JavaScript/TS, Java, Bash

**Technologies:** GCP, GTest, Boost, JAX, React, Gin, Redis, PostgreSQL, Apptainer, Docker, Kafka

**Development Tools:** Grub2, GDB, CMake, Github Actions, Gitlab, VS Code, JetBrains Suite, Atlassian Suite

## RELEVANT WORK EXPERIENCE

### Software Developer

May 2025 – December 2025

*Searidge Technologies*

*Ottawa, ON / Hybrid*

- Developed and maintained mission-critical C++ modules for intelligent airport systems around the globe, ensuring high reliability and performance in real-time environments while following Agile methodologies.
- Participated in code reviews using GitLab, following best practices for code quality, maintainability, and security.
- Gained experience with GTest, Boost, CUDA, Kafka, Kubernetes, and SonarCloud in software development.
- Maintained documentation and technical research in Confluence to support knowledge sharing and decisions.

### Software Developer

Jan 2025 – Apr 2025

*Agriculture and Agri-Food Canada (AAFC)*

*Ottawa, ON / Hybrid*

- Developed Nextflow bioinformatics pipelines on the 2 most powerful supercomputers in Canada via SLURM.
- Engineered an in-house solution to deploy Ollama via Apptainer on 8x A100 GPUs, enabling flexible LLM deployment across any number of GPUs (2-7) instead of the previous limitation of 1 or all 8 GPUs.

### Junior Software Developer

May 2024 – Aug 2024

*James Evan & Associates (JEA)*

*British Columbia / Remote*

- Migrated enzyme-react-adapter to React Testing Library, updating and maintaining over 400 tests with Jest.
- Upgraded core JavaScript dependencies and runtime environments in a web application, managing breaking changes, deprecated features, and API modifications to ensure integration with CI/CD pipelines in Jenkins.

## OTHER WORK EXPERIENCE

### Undergraduate ML Researcher

May 2024 – Present

*Carleton University*

*Ottawa, ON*

- Co-authored “LookWhere? Efficient Visual Recognition by Learning Where to Look and What to See from Self-Supervision,” submitted to NeurIPS 2025 and published on arXiv.
- Enabled large-scale Vision Transformer (ViT) training by adapting a Python codebase using JAX/Flax for Google Cloud TPUv4 pods, leveraging Google’s TPU Research Cloud (TRC) resources.

### Vice President of Technology & Projects

Sept 2024 – Present

*Carleton Artificial Intelligence Society (CUAIS)*

*Ottawa, ON*

- Reestablished the club, led a community project, and grew membership to over 50 active members.

### Teaching Assistant – Digital Systems

Sept 2024 – December 2024

*Carleton University*

*Ottawa, ON*

- Facilitated labs, graded assignments, and supported students with course material and inquiries.

## PROJECTS

### Vibecheck: Tweet Guessing Game | *Go, Redis, PostgreSQL, Gin, Docker, React*

- Developed a full-stack web app with CRUD operations on 30k twitter tweets and extended the RESTful API to include a party guessing game for users to guess the vibe of a tweet, accessible via a frontend.

### TEmbedded Systems: MSP432 Microcontroller | *C, Real-Time Systems*

- Developed embedded systems projects leveraging MSP432 microcontroller capabilities, implementing UART, interrupts, timers, GPIO, ADC, PWM, and concurrency/synchronization using QNX real-time OS.