

# 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, Computer Architecture, Software Design, Operating Systems, Software Requirements, Advanced C++, Computer Networks, Real-Time Concurrent Systems, Programming Languages

## SKILLS

**Languages:** C, C++, Python, TypeScript, Go, Java, SQL, Bash  
**Libraries:** Boost, GTest, JAX, Gymnasium, React, Next.js, Gin, Moby, gRPC, Redis, PostgreSQL  
**Development Tools:** CMake, Valgrind, LLVM Tooling, Docker, GitHub, GCloud, Atlassian Suite, CPM, UV, Yarn

## RELEVANT WORK EXPERIENCE

### Software Developer

May 2025 – December 2025

Searidge Technologies

Ottawa, ON / Hybrid

- Developed and maintained safety-critical C++ modules for air traffic control systems, ensuring high reliability and performance in real-time environments while conforming to ED-109A/DO-278A integrity assurance standards.
- Rewrote and modularized a multithreaded logger to improve performance, maintainability, and concurrency, boosting reliability for real-time airport systems deployed in 21 countries and 56 sites across the globe.
- Drove technical improvements by contributing to code reviews through GitLab and researching new frameworks.

### Software Developer

Jan 2025 – Apr 2025

Agriculture and Agri-Food Canada (AAFC)

Ottawa, ON / Hybrid

- Developed Nextflow bioinformatics pipelines for 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.

### Software Developer

May 2024 – Aug 2024

James Evan & Associates (JEA)

Victoria, BC / Remote

- Migrated and maintained 400+ tests with Jest by refactoring enzyme-react-adapter to React Testing Library.
- Upgraded core JavaScript dependencies and runtime environments, resolving breaking changes, deprecated features, API modifications to ensure integration with CI/CD pipelines in Jenkins.

## OTHER WORK EXPERIENCE

### Vice President of Technology & Projects

Sept 2024 – Present

Carleton Artificial Intelligence Society (CUAIS)

Ottawa, ON

- Founded the club and independently mentored and led 15+ developers in multiple open source projects.

### Undergraduate ML Researcher

May 2024 – May 2025

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) and Compute Canada resources.

### 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.