

Tarek Ibrahim

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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

- Founded the club, leading and architecting an open source project, mentoring over 15 active developers 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.