Tarek Ibrahim

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EDUCATION

Carleton University — Ottawa, Ontario

Bachelor of Engineering, Software Engineering (Co-op) — 3.2/4 GPA   *Expected Graduation: April 2027*

Relevant Courses: Algorithms and Data Structures, Computer Architecture, Software Design, Operating Systems, Software Requirements, Advanced C++, Computer Networks, Real-Time Embedded Systems, Programming Languages

RELEVANT 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.
- Built a video stabilization application using OpenCV, FFmpeg, and CUDA runtime for real-time streaming.
- 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.

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," **accepted for publication** at NeurIPS 2025, a top-tier conference in machine learning and AI.
- Enabled large-scale Vision Transformer training by deploying JAX/Flax code on Google Cloud TPUv4 pods.

LEADERSHIP EXPERIENCE

Website Coordinator — Sept 2025 – Present

Carleton Muslim Students' Association (CUMSA)   *Ottawa, ON*

- Led website migration from WordPress to a real-time React/Next.js app behind a Nginx self-hosted server.
- Delivered a secure event management portal and integrated app-like features (supplications library, prayer directions & times, donation wall) by gathering requirements and leading a team of devs, designers, and testers.

Vice President of Technology & Projects — Sept 2024 – Sept 2025

Carleton Artificial Intelligence Society (CUAIS)   *Ottawa, ON*

- Founded the club and guided a team of 15+ developers through two collaborative open source projects.
- Led design and development of CuMind, a modular Python RL library, enforced code quality standards, and organized peer code reviews in an agile methodology with weekly standups and office hours.

SKILLS

Languages:	C++, C, Python, Go, TypeScript, HTML/CSS, Java, SQL, Bash
Libraries:	CUDA, Boost, GTest, Flax, Gymnasium, React, Next.js, Gin, Moby, gRPC, Pico SDK
Development Tools:	CMake, Valgrind, LLVM Tooling, Docker, Nginx, Kafkacat, Gitlab, GCloud, Atlassian Suite

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.