

# Andrew Guo

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## Education

### Carleton University

Ottawa, Ontario

Honours Bachelor of Computer Science

June 2025

- Graduated with High Distinction and awarded the University Medal for ranking in the top 1% of the Faculty of Science
- CGPA: 12.0/12.0 (A+)
- Relevant Coursework: Data Structures & Algorithms, Database Management, Operating Systems, Cryptography

## Experience

### Junior Data Scientist

Ottawa, Ontario

Public Health Agency of Canada

May 2024 – Aug 2024

- Developed a data pipeline in Databricks and Azure to generate and store embeddings of academic publications for LLM-assisted epidemiological literature review

### Junior Full Stack Developer

Ottawa, Ontario

Public Health Agency of Canada

May 2023 – Apr 2024

- Architected CI/CD pipeline with GCP, GitHub, and Docker to automate deployment of highly available workloads in Kubernetes for production
- Configured DNS zones, VPC networking, container registries, and cross-regional managed databases across multiple GCP projects
- Created Docker images and Kubernetes manifests as part of automated deployment pipelines
- Delivered features with Django's authentication, ORM, and form handling to meet critical public health requirements
- Implemented infrastructure-as-code with Terraform to manage cloud services across multiple staging environments

### Software Developer

Ottawa, Ontario

Ross Video Ltd.

May 2022 – Aug 2022

- Developed a device driver in multi-threaded C to interface with vendor hardware over a proprietary serial communication protocol
- Migrated legacy production code to support long-term releases used by customers
- Followed Agile software development practices to implement new features that met customer requirements

## Projects

### Botanic Buddy | *Swift, Python, PyTorch*

- Trained a YOLOv8 object detection model in PyTorch with GPU acceleration to perform inference on mobile devices
- Implemented an intuitive SwiftUI interface to ensure seamless usability across iOS devices
- Curated a custom-labeled dataset using modern image segmentation techniques to enhance model accuracy in real-time object classification

### Search Engine | *Typescript, Rust, MongoDB*

- Developed a performant RESTful API in Rust with integrated MongoDB full-text search over a custom-indexed dataset
- Designed a responsive React webpage to facilitate client searches using optimized search parameters

### Legiter | *Go*

- Created a CLI tool to showcase practical post-quantum digital signature schemes on embedded systems
- Automated multi-platform binary builds and release workflows via GitHub Actions
- Performed in-depth benchmarking and profiling of digital signature implementations using Go's standard library

## Skills

**Languages:** C, C++, Go, Python, JavaScript, Rust, Java, Scala, SQL, GraphQL

**Frameworks:** React, Django, PyTorch, Tokio, Apache Spark

**Tools:** Terraform, Docker, Kubernetes (K8s), Nginx, Caddy, SVN, Git, Jira, Selenium

**Knowledge:** DNS, NAT, TCP/IP, UDP, QUIC, Google Cloud Platform (GCP), Microsoft Azure, Databricks