

Andrew Guo

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Education

Carleton University

Ottawa, Ontario

Honours Bachelor of Computer Science

May 2025

- Scotiabank International Exchange Award, Dean's Honour List
- GPA: 4.0/4.0 (A+)
- Relevant Coursework: Data Structures & Algorithms, Computer Vision, Applied Cryptography, Information Systems

Skills

Languages: Go, Python, Terraform HCL, JavaScript, Rust, C, C++, Scala, SQL, GraphQL

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

Tools: Docker, Kubernetes (K8s), Nginx, Caddy, Tailscale, SVN, Git, Jira, Selenium, Databricks

Knowledge: Google Cloud Platform (GCP), Microsoft Azure, DNS, NAT, TCP/IP, UDP/QUIC, a11y

Experience

Junior Data Scientist

Ottawa, Ontario

Public Health Agency of Canada

May 2024 – Aug 2024

- Developed a cloud-native data pipeline to generate and store vector embeddings from academic publications for use in large language models (LLMs) that assist researchers in epidemiological literature reviews
- Processed large-scale datasets using Apache Spark by writing optimized Databricks notebooks in Python
- Benchmarked the performance of multiple LLMs across GCP and Azure environments to guide model selection and cloud deployment strategy

Junior Full Stack Developer

Ottawa, Ontario

Public Health Agency of Canada

May 2023 – Apr 2024

- Implemented a robust CI/CD pipeline with Terraform that connected GCP infrastructure with GitHub to automate deployment of highly available workloads inside Google Kubernetes Engine (GKE) for end users
- Enhanced performance of existing GraphQL API stack to improve usability for downstream health data consumers
- Delivered production-grade features in Python by leveraging Django's authentication, ORM, and form handling to meet critical public health requirements

Software Developer

Ottawa, Ontario

Ross Video Ltd.

May 2022 – Aug 2022

- Programmed driver code in C to maintain mission-critical hardware used in live broadcasting environments
- 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

Legiter | Go

- Created a CLI tool using an open-source post-quantum cryptography library to demonstrate practical post-quantum digital signature schemes for embedded systems
- Automated multi-platform binary builds and release workflows via GitHub Actions
- Leveraged Go standard library to conduct in-depth benchmarking and memory profiling of both traditional and post-quantum digital signature implementations

Botanic Buddy | Swift, Python, PyTorch

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

Search Engine | Typescript, React, Rust, MongoDB

- Built a high-performance RESTful API in Rust that fulfilled requests more than 10x faster end-to-end than comparable engines
- Integrated MongoDB Atlas full-text search by indexing data gathered from a custom web crawler
- Designed a responsive React webpage to facilitate client searches using optimized search queries and parameters