

Andrew Guo

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Education

Carleton University

Ottawa, Ontario

Bachelor of Computer Science Honours. CGPA: 12.0/12.0 (A+)

June 2025

- Finished with High Distinction and granted the University Medal for graduating in the top 1% of the Faculty of Science
- Jamie Corbet Memorial Award, Faculty Scholarship, Dean's Honour List, Scotiabank International Exchange Award
- 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 Spark-based data pipeline on Databricks and Azure to generate and store embeddings of academic publications to implement Retrieval-Augmented Generation (RAG) with cloud-based Large Language Models (LLMs)
- Conducted structured evaluation of LLMs on Vertex AI and Azure AI using scikit-learn

Junior Full Stack Developer

Ottawa, Ontario

Public Health Agency of Canada

May 2023 – Apr 2024

- Implemented infrastructure-as-code with Terraform to manage cloud services across multiple staging environments
- Built CI/CD pipeline with Docker, Google Cloud, and GitHub, to automate deployment of workloads in Kubernetes
- Created container images and Kubernetes manifests as part of automated deployment pipelines
- Delivered features using Django's authentication, ORM, and form handling with HTMX and PostgreSQL
- Configured DNS zones, Virtual Private Cloud (VPC) networking, container registries, and cross-regional managed databases across multiple Google Cloud projects

Software Developer

Ottawa, Ontario

Ross Video Ltd.

May 2022 – Aug 2022

- Developed a device driver in 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-labelled dataset using modern image segmentation techniques to enhance model accuracy in real-time object classification

Legiter | *Go*

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

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

Skills

Languages: Python, C, C++, Go, 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: TCP/IP, UDP, QUIC, DNS, NAT, /r/homelab, Google Cloud Platform (GCP), Microsoft Azure, Databricks