Andrew Guo

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EDUCATION

Carleton University   Sep. 2020 – May 2025
Honours Bachelor of Computer Science   *Ottawa, Ontario*
- Dean's Honour List, Jamie Corbet Memorial Award, Scotiabank International Exchange Award
- 12.0/12.0 CGPA (A+)
- *Relevant Coursework: Databases, Operating Systems, Computer Vision, Distributed Processing, IT Infrastructure*

EXPERIENCE

Junior Data Scientist   May 2024 – Aug. 2024
Public Health Agency of Canada   *Ottawa, Ontario*
- Created a data pipeline to store academic publications and generate vector embeddings for Large Language Models (LLMs) to assist researchers with literature reviews
- Processed large-scale datasets using Apache Spark by writing optimized Databricks notebooks in Python
- Benchmarked the performance of multiple LLMs across Google Cloud Platform (GCP) and Azure environments to inform cloud deployment strategy

Junior Full Stack Developer   May 2023 – Apr. 2024
Public Health Agency of Canada   *Ottawa, Ontario*
- Developed a robust Terraform CI/CD pipeline that connected GCP infrastructure with GitHub to automate deployment of highly available workloads inside Google Kubernetes Engine (GKE) for end users
- Enhanced performance of GraphQL API stack to improve usability for downstream health data consumers
- Delivered production-grade features in Python by leveraging Django's authentication, ORM, and forms to meet critical public health requirements

Software Developer   May 2022 – Aug. 2022
Ross Video Ltd.   *Ottawa, Ontario*
- Developed low-level driver code in C for mission-critical hardware used in broadcast production environments
- Migrated legacy production code across long-term support releases used by customers
- Followed Agile software development practices to implement new features and meet customer needs

PROJECTS

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
- Designed and implemented a responsive 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
- Developed a React webpage to facilitate client searches using optimized search queries and parameters

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 features and standard library to conduct in-depth benchmarking and memory profiling of both traditional and post-quantum digital signature implementations

KNOWLEDGE

Languages: Go, Python, C, C++, Rust, JavaScript, SQL, GraphQL, Terraform (HCL)
Frameworks: React, Django, Tokio
Developer Tools: Docker, Kubernetes (K8s), Nginx, Caddy, Tailscale, SVN, Git, GitHub, Jira, Selenium, Databricks
Skills: Google Cloud Platform (GCP), Azure, DNS, NAT, TCP/IP, UDP/QUIC, a11y, LaTeX, Rock Climbing