Andrew Pham

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Education

University of Ottawa — Ottawa, ON
Honours Bachelor of Science in Computer Science — *3.8 GPA | Expected May 2026*

Technical Skills

Languages: Python, Go, C++, JavaScript, TypeScript, Java, SQL, HTML/CSS
Technologies: React, Vue.js, Node.js, FastAPI, Flask, Spring, Express, PostgreSQL, MySQL, MongoDB, Apache Kafka
Developer Tools: Docker, Amazon Web Services (AWS), JIRA, Git, GitHub, GitLab, Jupyter, VS Code, IntelliJ, Linux

Experience

Tesla — Jan. 2025 - Present
Software Engineer Intern — *Palo Alto, CA*
- Designed a Dockerized Python application to scan social media sites for complaints about Tesla's infotainment systems, integrating open-source LLMs with Ollama to determine relevance, summarize post content, and generate email reports for engineers, analyzing thousands of posts and reducing manual investigation time by **over 20 hours per week**
- Implemented a telemetry verification system for mobile application commands by correlating application and vehicle logs from multiple sources, streamlining the testing process and reducing the number of cases requiring manual investigation by over **60%**

Nokia — Sep. 2024 – Dec. 2024
Embedded C++ Software Developer Intern — *Ottawa, ON*
- Designed and implemented an encoding technique leveraging C++ and Protobuf to reduce log size by **over 30%**, allowing more vital crash data to be preserved in a limited sized log buffer
- Developed new features for a router management interface using C++, allowing users to apply config changes without needing to follow a strict order of operations
- Reduced Python file dependency tracking script runtime by **95%** by caching results of recursive function calls and reducing the amount of read/writes to disk, saving developers **over 40 seconds per build** on average
- Generated thousands of lines of C code using C++ based on config files, making the codebase easier to maintain/extend

Royal Canadian Mounted Police — May 2024 – Aug. 2024
Software Developer Intern — *Ottawa, ON*
- Created a new ingestion pipeline for a Flask data visualization service, processing and inserting data from multiple excel sheets to a SQLite database, decreasing ingestion time by over **90%** by batching updates in transactions
- Architected a FastAPI Python microservice providing a simple interface for categorizing media files using multiple Tensorflow ML models, and deployed it using Docker
- Implemented multi-threaded inference on the ML microservice, improving total runtime by **35%** over sequential inference

Nokia — Jan. 2024 – Apr. 2024
Test Automation Intern — *Ottawa, ON*
- Developed a test automation program to create, send and receive mock traffic with **15+** protocols, and collect metrics on Linux devices to test fixed networks, controlled via a REST API built with Python and FastAPI
- Improved error handling and messaging for API endpoints, making it easier to use and identify erroneous use
- Created a Bash script automating program installation on Ubuntu, decreasing install time by **over 80%**

Recollective Inc. — May 2023 – Sep. 2023
Software Developer Intern — *Ottawa, ON*
- Created a new internal tool for testing LLM Prompts in TypeScript and Vue.js for rapidly prototyping AI features
- Developed API endpoints and DTOs with Java Spring, connecting the main application to an AI microservice
- Captured and logged AI request metadata in a FastAPI Python microservice and forwarded results to AWS OpenSearch with Fluentd for validation and monitoring
- Implemented validation to the Spring controllers to support a new limited-feature license type

Projects

Distributed Web Crawler | *Go, Apache Kafka, MongoDB, AWS S3*
- Architected and built a scalable, distributed web crawler using **Go, Apache Kafka, MongoDB**, and **AWS S3**
- Developed separate services in **Go** for fetching site data to store HTML content in **Amazon Web Services (AWS) S3** and collecting site metadata, and processing site data to extract text and other linked pages, allowing for independent scaling
- Utilized **Apache Kafka** as a resilient, distributed message queue to coordinate processing between the services

JustVent - Second in Best Use of Cloud Technology @ Hack the Hill 2 | *Python, Go, React, MongoDB, PostgreSQL, AWS*
- Created an app allowing users to journal and track their emotions over time using an NLP model run with **PyTorch**
- Developed the backend supporting main functionality in **Python & FastAPI**, with **MongoDB** as the primary database
- Implemented a semantic search microservice with **Go** on **AWS Lambda**, storing vector embeddings on **PostgreSQL**
- Designed application architecture and managed deployment on **Amazon Web Services**