Andrew Pham

343-202-4390 | andrewpham.xyz | andrewbapham@outlook.com | linkedin.com/in/andrewbapham | github.com/andrewbapham

Education

University of Ottawa — Ottawa, ON
Honours Bachelor of Science in Computer Science — *Sep. 2021 – Apr. 2026 | 3.8/4.0 GPA*

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, Kafka
Developer Tools: Docker, Amazon Web Services (AWS), JIRA, Git, GitHub, GitLab, Jupyter, VS Code, IntelliJ, Linux

Experience

Software Engineer Intern — Jan. 2025 - Apr. 2025
Tesla — *Palo Alto, CA*
- Incoming software engineering intern on the vehicle software team

Embedded C++ Software Developer — Sep. 2024 – Present
Nokia — *Ottawa, ON*
- Developed new features and unit tests for a model-driven router management interface using **C++**, enabling dependency tracking between config fields, 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

IT Software Solutions Developer — May 2024 – Aug. 2024
Royal Canadian Mounted Police — *Ottawa, ON*
- Created a new ingestion pipeline for a **Flask** data visualization service, processing and inserting 5000 rows per second 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 using **Docker**
- Implemented multi-threaded inference, improving total runtime by **35%** over sequential inference

Test Automation Co-op/Intern — Jan. 2024 – Apr. 2024
Nokia — *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**, accelerating install time by **over 80%**

Software Developer Co-op — May 2023 – Sep. 2023
Recollective Inc. — *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**, 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 Fluent for validation and monitoring
- Implemented validation to the **Spring** controllers to support a new limited-feature license type

Software Developer Co-op — May 2022 – Sep. 2022
Recollective Inc. — *Ottawa, ON*
- Implemented new front-end form input components using **JSP**, **Vue.js**, **JavaScript**, **jQuery**, and **HTML/CSS**
- Developed new back-end features and API endpoints using **Java**, **Spring** and **MySQL**
- Completed various QA tasks including creation of test cases and end-to-end testing

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**
- Implemented a responsive, user-friendly frontend in **React.js** with the Mantine component library
- Designed application architecture and managed deployment on **Amazon Web Services**