

Languages: Python, C++, C, HTML, CSS, Javascript, Java, Kotlin, Swift, Bash, SQL.

Technologies: Android, Linux, Docker, Jenkins, Git, GDB, NumPy, Pandas, TensorFlow/Keras, SKLearn, OpenCV, Networking.

Domains: AI/ML Model Development, Embedded Software and AI, MLOps, Software Engineering, Test Automation.

Education

University of Waterloo (Waterloo, ON)

September 2020- May 2025

Bachelor of Computer Science (Co-op) with AI Specialization (4th year)

GPA: 89%

Experience

University of Waterloo (Waterloo, ON)

January 2024 - Present

Undergraduate Research Assistant

Swift, CoreML

- Implementing and benchmarking LLM encoding for health science texts, to enable qualitative analysis.
- Researching methods to accelerate LLMs on Apple hardware for Edge-computing through parallelization.

Qualcomm (Toronto, ON)

August 2023 - December 2023

AI Performance Analysis Intern

Python, NumPy, Pandas, Plotly, Android

- Led development of a software profiling pipeline, analyzing performance of AI workloads running on Snapdragon.
- Increased speed and scalability of analysis tools by over 500%. Added dataset reduction methods to preprocessing.
- Designed a querying system and cache for large performance datasets (50k+ points), removing dataset size limitation.
- Designed and implemented a time-based search engine to enable nanosecond-level analysis of AI workload execution.

Qualcomm (Toronto, ON)

January 2023 - August 2023

Snapdragon AI Processor Intern

C++, Python, Android, Bash, GDB, Jenkins

- Enhanced features for an embedded framework that accelerates CNN-based image processing on Snapdragon.
 - Integrated data and parameter propagation into production code. Wrote tests for thread-safety and scalability.
 - Performed Inter-Process Communication (IPC) optimizations, achieving a 50% performance improvement.
 - Added runtime configuration for debugging infrastructure, doubling debugging speed for 40+ engineers.
- Created an MLOps suite to analyze performance of CNN-based workloads running using the embedded framework.
 - Defined 100+ custom KPIs, revealing bottlenecks that led to a 2x performance improvement when resolved.
 - Automated data and KPI retrieval by deploying the MLOps suite's Extract-Load-Transform (ELT) pipeline to Jenkins.

Cisco Systems (Ottawa, ON)

May 2022 - August 2022

DevOps and Analytics Intern

Python, Docker, Jenkins, ElasticSearch

- Designed and implemented a Machine Learning (ML) system to recommend code reviewers for pull requests.
 - Employed Collaborative Filtering to make recommendations. Optimized for large datasets with 500,000+ entries.
 - Deployed a Jenkins job to automate recommendations. Integrated results into GitHub, serving 3600+ engineers.
- Optimized the Cisco Networking Bot's Natural Language Processing (NLP) pipeline, increasing its F1 score to 0.99.
- Reduced Cisco Networking Bot's space usage by 90% using Docker image optimizations, saving over \$35,000/year.

Cisco Systems (Ottawa, ON)

May 2021 - August 2021

Segment Routing IPv6 (SRv6) Testing Team Intern

Python, TensorFlow/Keras, InfluxDB, Grafana

- Developed a Recurrent Neural Network (RNN)-based model to detect anomalies in router telemetry data.
- Wrote unit tests for the Cisco Automation FactorY (CAFY) Test Suite, testing SRv6 performance measurement.
- Constructed RESTful APIs to collect and preprocess 60+ SRv6 telemetry metrics using YANG.

Extracurriculars

WAT.ai (Waterloo, ON)

October 2023 - Present

Stock Forecasting Team

Python, TensorFlow/Keras, PyTorch

- Designing a deep reinforcement learning model to trade stocks using sentiment analysis and price predictions.

Waterloo Data Science Club (Waterloo, ON)

September 2022 - September 2023

VP of Data Analysis/Reading Group Lead

Python, TensorFlow/Keras, PyTorch, MLFlow

- Fine-tuned a distillBERT (LLM) to retrieve 16 emission metrics from climate disclosure extracts, for a startup company.
- Presented papers covering neural network architecture, image processing, and NLP to 100+ club members.
- Prepared resources and hosted workshops on Pandas, NumPy, Matplotlib, and Tensorflow for 60+ club execs.