

Alexander Carvalho

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Student & Software Developer with industry experience building, testing, and deploying user focused applications. Interested in concurrent systems and finance technology; passionate about collaborative engineering and simplicity.

EDUCATION

Sheridan College Expected graduation: April 2025
Bachelor of Computer Science (Co-op) — BCS | GPA: 3.76
Relevant Coursework Data Structure & Algorithms, C/C++ Program Design, Distributed & Parallel Computing
Extracurricular President of Sheridan [Computer Science Club](#)

PROFESSIONAL EXPERIENCE

Geotab — Software Developer Intern Sep 2023 — Dec 2023
Full stack web development in the Citizens Insights codebase

- Facilitated integration and testing of web mapping features within various container registry pipelines
- Reduced API response times by **50%** with parallel task processing for vehicle location and route retrieval
- Optimized client-side data fetching during geospatial queries with web workers; improved site initialization performance by **70%** (4800 ms → 1400 ms) and decreased bounce rates by **25%**
- Utilized Jest to build unit tests for numerous UI components exceeding **90%** repository-wide coverage
- Learned about **asynchronous** web applications (TypeScript, RxJS, Redux, Multithreading, Event Handling)

Ansys — Software Engineer Intern May 2023 — Aug 2023
Computational Fluid Dynamics R&D Engineering in the Ansys monorepo

- Supported implementation, testing, and release of various simulation-based features across **5** Ansys repositories
- Accelerated microservice deployments by **30%** through refactoring batch script, Dockerfiles, and CI workflows
- Spearheaded the development and launch of [ansys/pyansys-units](#) (400+ weekly downloads) a Python package for units, unit systems, and unit conversions; enhanced community adoption by **15%**
- Achieved a **40%** reduction setup and teardown overhead by integrating Pytest fixtures within module tests
- Learned about **trunk-based** development (Python, Pytest, Docker, CI/CD, GitHub Actions)

OTHER EXPERIENCE

Sheridan CMI Lab / USARs Data Processing — Undergraduate Research Developer Jan 2023 — Aug 2023
Machine learning analysis of road surface conditions

- Collaborated on [LYNX](#) Computer Vision, analyzing road conditions via dashcam using Python, OpenCV, and YOLOv5
- Built an interface to demo road debris detection using TypeScript, SvelteKit, and Express


Amazon — L1 Operations Feb 2020 — Jan 2023
Operations at YYZ2

- Led a team of **25** associates, implementing optimal performance strategies to achieve daily shipment targets


SKILLS

Programming Languages	Python, JavaScript, TypeScript, Ruby, C, C++
Frameworks & Tools	React, Node, Express, GraphQL, Jest, Rails, FastAPI, Pytest
Datastores	AWS (S3, RDS, DynamoDB), MySQL, MongoDB, Hadoop (HDFS, MapReduce)
DevOps	Docker, Git, GitHub, AWS (EC2, Lambda, VPC), CI/CD, Bash


PROJECTS & OPEN-SOURCE

Wealthsimple / Ilm-gateway 
Python, FastAPI, TypeScript, React, Docker, OpenAI

- Contributed router-based [exception handlers](#) to propagate API errors within the backend and UI intuitively

Tranche Commerce 
TypeScript, React, Node, GraphQL, Express, MongoDB, Docker, HTML, TailwindCSS

- Developed a full stack finance website to buy, sell, and trade tranches; utilized **GraphQL** to streamline API queries

Stock Forecast 
Python, FastAPI, Keras, NumPy, Pandas, Pytest, yFinance

- Built a REST API for stock price estimates; integrated a process **queue** to ensure concurrent request integrity