

William Gervasio

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Education

B.Sc. Computer Science

University Of British Columbia, GPA: 4.0

2024

Vancouver, BC

- Taught Software Engineering MicroMasters of 180,000 students as Lead Teaching Assistant.
- Won 2 awards over 5 research conference presentations on Artificial Intelligence.

Work Experience

Software Engineer Intern

September 2023 - December 2023

BlackBerry Ltd

Mississauga, ON

- Developed open source software detection interfaces using **React**, **Python**, and **Docker** to audit legality of 3000 products.
- Integrated open source inventory summary, dependency inference and codebase diff reports to reduce legal reviews by 92%.
- Designed a **Python** multi-threaded library to refactor 300+ duplicates over 40 projects, reducing average dev time by 30%.
- Improved client report speed up to 95% by adding least-recently-used caches and implementing asynchronous operations.

Software Engineer Intern

May 2023 - August 2023

Canada's Michael Smith Genome Sciences Centre

Vancouver, BC

- Designed AI systems with **Python**, **PyTorch** and **OpenCV** to isolate genetic features of 10,000 cells per 15 mins on video.
- Automated image annotation by developing distributed algorithms in **Docker** containers on **HPCs**, saving 1000 hrs.
- Created 3 model visualizers with **React**, **MySQL** and **JavaScript** to modify models, label data and analyze experiments.
- Improved ETL pipeline speed by 70%, orchestrating workflows with **Snakemake** and parallelizing tasks with **Slurm**.

Software Engineer Intern

January 2022 - August 2022

insightsoftware

Vancouver, BC

- Upgraded performance of **PostgreSQL** and **Redshift** drivers in **C++** on 12 platforms to support next gen cloud updates.
- Modified server networking code with open-source modules in **C** to support 5 **Postgres** versions and **Redshift** serverless.
- Enabled **ARM64** distribution by resolving 10k dependency issues and creating compilation and test scripts for **Jenkins**.
- Supported 4 new protocols by adding 7 data types and 3 auth methods tested over **AWS**, **Docker**, **Tableau** and **PowerBI**.

Software Engineer Intern

May 2021 - August 2021

Centre for Heart Lung Innovation

Vancouver, BC

- Designed an AI model visualizer for 6,000 features of 700 infants with **JavaScript** to aid 3rd world vaccine policies.
- Developed 4 AI inference services with **Python** and **Flask** hosted on **AWS** to isolate 300 biomarkers across modalities.
- Implemented clustering with **React** and **Redis** on graphs to highlight 1,000 mechanisms via data mining on 3 databases.
- Reduced analysis latency by 48% by memoizing graph paths and caching asynchronous data mining operations.

Projects

Tyrosine

January 2024 - March 2024

- Developed a journal/meditation AI with **React Native**, **S3**, **DynamoDB** and **Python** to personalize mental healthcare.
- Implemented real-time voicebot meditations by tuning **LLMs** on AWS Bedrock and serving audio over websocket to mobile.

Uni.fi Music Streaming Platform

April 2023 - August 2023

- Streamed playlists, searched and recommended songs across YouTube and Spotify using **React**, **MongoDB** and **Redux**.
- Designed a search service with **Selenium** and **Express** to support filtering of 100,000 results from YouTube and Spotify.

C-like to x64 Assembly Compiler

January 2023 - April 2023

- Built a **C-like** language to **x64 Asm** compiler in **Racket** with support for variables, types, functions and recursion.
- Integrated 5 optimizations: register allocation, branch simplification, type checking, loop unrolling and tail recursion.
- Benchmarked 100 ms run-time and 40 MB memory compared to GCC's 70 ms and 80 MB for generating 100,000 lists.

Extracurriculars

Vice President External

September 2023 - April 2024

UBC Computer Science Student Society

Vancouver, BC

- Headed operations to support 10+ tech industry events with 40+ companies for 3,000 students, averaging 100 attendees.
- Led 35 devs in 5 teams to develop management systems for non profits and research labs to manage daily operations.
- Negotiated event partnerships with external entities including Google, totalling over \$15k and 1,300 participants.

Skills

Languages: Python, C++, C, SQL, Java, JavaScript, TypeScript, HTML, CSS

Frameworks/Libraries: scikit-learn, OpenCV, TensorFlow, Torch, Flask, Express.js, Node.js, React.js

Technologies: Git, Perforce, AWS, GCP, Docker, Kubernetes, Jenkins, Wireshark, Bamboo, HPC