



SAM LIU

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🌐 Sam Liu

EDUCATION

• University of Waterloo

2021 - 2026

Bachelor of Computer Science

96% faculty average

EXPERIENCE

• Huawei

May - Aug 2023

Software Developer

Markham

- Redesigned a subsystem in an FPGA toolchain by decoupling it into a self-sufficient module, cleaning up client-facing API, re-evaluating memory ownership, and increasing code coverage
- Leveraged multi-threading and C++ standard library data structures to improve runtime of matching and merging algorithms by over **70%**
- Reduced memory usage of subsystem by **50%** by refactoring a crucial 24-byte class into an 8-byte integer
- Built features for in-house scripting engine, communicating with team members to determine their needs

• CareGuide

Sep - Dec 2022

Full Stack Developer

Toronto

- Co-led a project that brought the application from North America to **1000+** users in the UK and Australia by extending both the frontend and backend to support new countries
- Refactored the phone API to support **200+** international calls through a built-in voice system, collaborating with third-party developers from Twilio
- Optimized the loading time of various big-data pages on the website by **10x** using Elasticsearch
- Rebuilt a homepage footer used by customers to quickly navigate to the various services the site provides

• New York Theological Education Centre

Jun - Aug 2021

Software Developer

Markham

- Independently developed a website and app used by **50+** NYTEC members to access church resources
- Engineered email and app notification systems for instant access to church news

• St. Augustine

Feb 2020 - Jun 2021

iOS App Developer

Markham

- Redesigned school app from scratch to modernize and clarify the user interface

PERSONAL PROJECTS

• Guitar Song Sheet Creator

- Website that allows users to create and share guitar song sheets, web-scraping to automatically pull lyrics
- Designed, carefully tested, and documented a RESTful API for authentication, song sheet access, user comments, and email verification

• Chess AI

- ML-powered chess bot rated at **1200** elo trained using board evaluations in Lichess dataset
- Engineered a pair of complementary deep CNNs - evaluating the best square to move out of and into

TECHNICAL SKILLS

Web: React, Rails, Django, Flask, PostgreSQL, MySQL, Firebase, Kubernetes, Elasticsearch

Machine Learning: TensorFlow, PyTorch, Scikit-learn, NumPy, Pandas, Matplotlib

Languages: C++, Python, JavaScript, Ruby, SQL, GraphQL, Bash, MATLAB