

SAM LIU

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🌐 samliu21

🌐 Sam Liu

EDUCATION

- **University of Waterloo** 2021 - 2026
Candidate for Bachelor of Computer Science 95% math faculty average

EXPERIENCE

- **Super.com** Incoming Jan 2024
Software Developer Intern Toronto, ON
- **Huawei** May - Aug 2023
Software Developer Intern (C++) Markham, ON
 - **Redesigned an FPGA subsystem** by decoupling it into a self-sufficient module, cleaning up the client-facing API, and clarifying memory ownership using smart pointers
 - Refactored a crucial **24-byte class into an 8-byte integer** to reduce memory usage of subsystem by 50%
 - Improved runtime of matching and merging algorithms by over **70%** using **multithreading benchmarks** and **C++ Standard Library** data structures
 - Built features for in-house scripting engine and led team discussions to determine the needs for the product
- **CareGuide** Sep - Dec 2022
Full Stack Developer Intern Toronto, ON
 - Co-led a project that brought the website from North America to **1000+ users in the UK** by extending the onboarding process and refactoring the search directory to support new countries
 - Refactored the built-in voice system to support **international phone calls for 200+ users**
 - Optimized the loading time of various big-data pages by **10x** using Elasticsearch
 - Built components for in-house design system and modernized the homepage footer and directory
 - **Technologies used:** Ruby on Rails, React, TypeScript, GraphQL, MySQL, Elasticsearch, Kubernetes
- **New York Theological Education Centre** Jun - Aug 2021
Software Developer Markham, ON
 - Developed a React website and app used by **50+ NYTEC members** to access church resources
 - Engineered an email and app-based notification system using Firebase for instant access to church news
- **St. Augustine Catholic High School** Feb 2020 - Jun 2021
iOS App Developer Markham, ON
 - Redesigned the school app from scratch to modernize and clarify the user interface for **500+ students**

PERSONAL PROJECTS

- **Chess AI**
 - An ML-powered chess bot rated at **1200 elo** trained using board evaluations from the Lichess dataset
 - Engineered a pair of complementary deep CNNs that evaluate the best square to move out of and into
- **Guitar Song Sheet Creator**
 - A website that allows users to create and share song sheets with the ability to pull lyrics automatically
 - Designed a RESTful API for authentication, song sheet access, user comments, and email verification

TECHNICAL SKILLS

Languages: C++, JavaScript, Python, Ruby, SQL, GraphQL, Java, Bash, Swift

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

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