# Sam Liu

s742liu@uwaterloo.ca Toronto, ON, Canada

## **Technical Skills**

Languages: C++, JavaScript, Go, Python, Ruby, Java, SQL, GraphQL

Frameworks: React, Flask, Ruby on Rails, Django, PostgreSQL, AWS, Elasticsearch

# **Work Experience**

Software Developer Intern Citadel

Incoming

# **Software Developer Intern**

#### Mantle

Sep - Dec 2024

- Implemented a table view with Excel-like features, including formula support, commenting, and error handling, leading to a successful contract with major enterprise client
- Re-architected the backend to enable multi-type classification for a single document, and built a user-friendly tab view to display all classifications seamlessly
- Improved document data extraction accuracy by 40% using Google Gemini
- Technologies used: Go, React, TypeScript, PostgreSQL, Gemini

## **Software Developer Intern**

# Super.com

Jan - Apr 2024

- Built a feature that auto-scrolls users to key parts of the site, driving **\$1M** in annualized revenue and a **6%** relative increase in successful hotel bookings
- Developed and AB-tested various React features including recommending cheaper hotels and suggesting alternative payment methods, retaining **30,000** additional users annualized
- Resolved multiple bugs within payment, hotel search, and booking emails using DataDog and Amplitude
- <u>Technologies used</u>: React, TypeScript, Flask, DataDog, Amplitude, Jest, Snowflake

## Software Developer Intern

#### Huawei

May - Aug 2023

- Redesigned C++ library for Huawei's FPGAs: decoupled into self-sufficient module, refined API, and clarified memory ownership using smart pointers, facilitating seamless integration with rest of product
- 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 using multithreading and C++ STL data structures
- <u>Technologies used</u>: C++, CMake, Google Test

## Software Developer Intern

## CareGuide

Sep - Dec 2022

- Co-led expansion project, bringing website to **1000+ users in the UK**; devised new onboarding flow, implemented free trial features, and executed successful launch
- Refactored the phone number API to enable international phone calls for 200+ users
- Optimized the loading time of various big-data pages by **10x** using Elasticsearch
- <u>Technologies used</u>: Ruby on Rails, React, TypeScript, GraphQL, MySQL, Elasticsearch, Kubernetes

# **Projects**

• Chess Al | Github – a 1200 Elo chess bot. Designed a pair of CNNs to determine optimal move squares

### **Education**

## **3B Computer Science**

# **University of Waterloo**

**Expected Grad: Apr 2026** 

- 92% CS average, \$18k Ronald G. Dunkley National Scholarship
- Coursework: Real-time Programming, Operating Systems, Concurrency, Databases, Networks, Security