

Sean Zhang

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EDUCATION

University of Waterloo

Sep 2019 - Apr 2025

Bachelor of Computer Science

Coursework: Real-Time Programming, OS, Graphics, Networks, Security, Algorithms, User Interfaces

Research Experience: Experimented with improving Monte Carlo ray-tracing under Prof. Toshiya Hachisuka.

EXPERIENCE

Verily

May 2024 - Dec 2024

Software Engineer Intern

- Cut PR check compute by **\$150,000** per year by optimizing tool performance and checkout speed on **GitHub Actions** using **Golang**.
- Built an ELT pipeline and dashboard for Jira and GitHub metrics using **DBT**, **Beam** and **Airflow** to detect CI/CD performance regressions on **over 1.3 million** workflow runs.
- Collected and ingested events on **over 30,000** pull requests using **Golang**, **BigQuery**, and **GitHub REST API**.
- Reduced memory usage on Jira issue fetcher from **2.3 GB** to less than **1 MB** using goroutines and channels.

Vivid Seats

Sep 2023 - Dec 2023

Software Engineer Intern

- Enhanced search engine indexing using pre-rendered location-based suggestions for events, resulting in a **\$3 million** increase in purchases.
- Improved Google web vitals scores on over **65,000** pages by identifying and resolving unexpected layout shifts on vividseats.com using **Next.js** and **TypeScript**.
- Reviewed and implemented unit tests using **Jest** and **React Testing Library**, increasing test coverage to **92%**.

Cynorix

Jan 2023 - Apr 2023

Software Engineer Intern

- Increased payment service uptime to **99%** by revamping the processing infrastructure, integrating with payment tokens from the **Stripe API**.
- Modularized 2FA components into reusable **React.js** components used across 4 systems, decreasing development time by **20%**.

PROJECTS

Train Control

- Built an event-driven real-time microkernel from scratch on the ARMv8 architecture.
- Controlled multiple model trains to move and stop with millimeters of precision using **C**.

Window Switcher An alt-tab with fuzzy-find for macOS using **Swift** and **SwiftUI**.

Fluid Simulation Numerically stable Navier-Stokes fluid simulation in **JavaScript**.

Ray Tracing Implemented a renderer from scratch based on ReSTIR paper using **Rust**.

SKILLS

Languages: Golang, Python, TypeScript, C, C++, Rust, SQL, Bash

Tools & Frameworks: GCP, Beam, Next.js, Node.js, Docker, MongoDB, Terraform, React.js, Express.js, GitHub Actions