

Daniel Chen

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Skills

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

Frameworks: Node.js, Express, React, Next.js, Vue, Flutter, Axum

Tools: Linux, Git, Docker, PostgreSQL, Redis, Kubernetes, AWS, GCP, OpenTelemetry, GraphQL, Android

Experience

Software Engineering Intern | *Python, TypeScript, FastAPI, AWS, React, Pytest*

May 2023 – Aug 2023

Dropbase

San Francisco, CA

- Designed a conflict resolution algorithm for business smart tables, **reducing unrecoverable errors by 75%**
- Shipped a HubSpot/Airtable to Google Sheets sync feature to **46000+ enterprise users** by writing **AWS Lambda** functions in Python, abstracting interfaces to easily support future sources
- Wrote and deployed a new **React** data query builder to **33000+ users** by standardising and enforcing protocols between interfaces across the stack, eliminating the need for business users to manually write API calls
- Launched a service to validate and import CSV/Excel attachments into DBs by expanding engine support by **6x**
- **Reduced request errors by 30%** by creating backend testing infrastructure with **Pytest** to catch regressions and test new features across database engines with **90% code coverage**

Backend Developer & Organiser | *TypeScript, GraphQL, Docker, Kubernetes, Jest*

Mar 2023 – present

Hack the North

Waterloo, ON

- Streamlined event check-in times by **80%** by generating user-specific Apple Wallet passes over **Express**
- Horizontally scaled the **Node** server to handle **1000+ concurrent users** with **Redis** and **Kubernetes**
- Integrated backend **tracing** to monitor performance and trigger alerts with **OpenTelemetry** and **Grafana**
- Deployed a new attendee bus registration platform by creating new database tables and **GraphQL** resolvers
- Slashed boot and reload times by **93%** by introducing **threading**, **profiling**, and pre-transpiling generated code

Projects

Comic Downloader 🐙 | *Python, Qt*

- Created a CLI and GUI to scrape, download, and convert webcomics into e-ink-optimised ebooks (EPUB, PDF)
- Designed an **intermediate representation** to store metadata and images as a standardised conversion target
- Implemented **image caching and multiprocessing** to increase download and update speeds by **300%**

Genshin Simulator 🎮 | *Vue, TypeScript*

- Built a realistic and beautiful **loot box simulator** with fluid animations based off a popular game
- Reduced action latency by **90%** by lazily loading art assets at opportune times, such as during cutscenes

Kobo Sync Server 🐙 | *Rust, Axum*

- Developed an Axum backend to **automatically convert and sync** ebooks to a Kobo eReader over the network
- **Reverse-engineered** the Kobo eReader Sync API to support updating ebook metadata and covers

Arch Linux Server 🐙 | *Linux, Docker, nginx, systemd*

- Created a **self-hosted CI/CD pipeline** with **Gitea** to automatically deploy personal projects behind **nginx**
- Containerised services with **Docker** and **systemd** to simplify deployment and management

Education

University of Waterloo

Sep 2022 – Apr 2027

B.A.Sc. in Computer Engineering

Waterloo, ON

- Courses: Object-oriented programming, data structures & algorithms, digital computers & circuits
- Extracurriculars: Creative Writing Club, Hack the North, UW Orbital Design Team