

OWEN WANG

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EDUCATION

University of Waterloo

Bachelor of Computer Science Honours, Co-op

Expected May 2027

Waterloo, ON

SKILLS

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

Libraries and Frameworks: Django, Django REST framework, React, Tailwind CSS, Bootstrap

Development Tools: Git, Linux/UNIX, PostgreSQL, SQLite, RabbitMQ, AWS

PROJECTS

🐙 Brook | Python, Django, Django REST framework, React, TypeScript, Tailwind CSS, PostgreSQL, RabbitMQ, Amazon S3

- Developed a **full-stack SPA** allowing music downloads and playlist conversion for YouTube and Spotify
- Designed a interactive and dynamic UI with React and Tailwind CSS, utilizing **client-side rendering** (CSR)
- Built a back-end to handle **session-based user authentication** with Django, and a **RESTful API** for seamless front-end communication and **CRUD** operations with the Django REST framework
- Implemented a **normalized relational database** with Postgres and the Django ORM
- Utilized RabbitMQ to offload downloads to a background **worker** and **Amazon S3** to handle file storage
- Deployed frontend to Netlify and backend to Heroku while managing dependencies and configuring CORS and cookies, enabling secure cross-domain communication for API requests and responses

🐙 Ray Tracer | C++

- Developed a ray tracer from scratch in pure C++, simulating light transport and rendering realistic 3D images
- Implemented computer graphics **algorithms**, including ray-object intersection, object shading, and anti-aliasing
- Integrated materials and lighting effects such as reflection, refraction, and diffuse shading

🐙 Multithreaded Local Superchat | C

- Developed a chat app that connects over a users local network using **TCP sockets**
- Implemented **multithreading** to manage **concurrent** message handling
- Optimized dynamic memory allocation to support an expanding user base

🐙 JBKR Mobile | Java

- Developed a Java desktop application simulating a stock trading application, enabling users to create and manage stock profiles with real-time data from the NYSE and Nasdaq
- Led a **team of three**, facilitating role assignments and conducting **pair programming** sessions

🐙 Internsheet | React, TypeScript, Tailwind CSS, Supabase

- Developed a **single-page application** to track information of students' internship applications
- Implemented Supabase's realtime Postgres changes to update spreadsheet

EXPERIENCE

Autonomy Software Developer

Waterloo Aerial Robotics Group

Sept 2024 – Present

Waterloo, ON

CU Esports Officer

Carleton University

Sept 2023 – Aug 2024

Ottawa, ON

- Fostered a community of **3200+ members** by organizing weekly online gaming events at Carleton University
- Collaborated with admins to ensure smooth execution and student satisfaction during events

Coding Club Homework Assistant

A.Y. Jackson S.S.

Sept 2022 – Jun 2023

Toronto, ON

- Guided a club of **300+ students** through identifying and **debugging** coding errors while conducting **code reviews**
- Mentored individual students through computer science coursework, offering insights on proper coding practices

AWARDS

- Amazon Robotics Hackathon Winner