OWEN WANG

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EDUCATION

University of Waterloo Expected May 2027
Bachelor of Computer Science Honours, Co-op *Waterloo, ON*

EXPERIENCE

Incoming Software Engineer Intern Dec 2024 – Present
Google *Waterloo, ON*

PROJECTS

⌂ **Brook** | *Django, React, Tailwind CSS, Python, TypeScript, 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
- Built a back-end to handle session-based user authentication and a RESTful API for CRUD operations
- 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 for secure cross-domain communication of API requests and responses

⌂ **Ray Tracer** | *C++*
- Developed a ray tracer from scratch in 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

⌂ **Hows My Form?** | *Ultralytics YOLO, Django, React, Tailwind CSS, Python, TypeScript, Cloudflare*
- Led a team of four in the development of a weightlifting posture correction SPA during Hack the Valley 9
- Designed system architecture and assigned individual roles while conducting extensive pair programming sessions
- Utilized YOLOv8 pose detection models to design mathematical algorithms to detect improper weightlifting form
- Implemented Cloudflare to serve media files using R2 buckets and develop a chat bot using Workers AI models

⌂ **JBKR Mobile** | *Java*
- Developed a stock trading application to create and manage 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, Tailwind CSS, TypeScript, Supabase*
- Developed a single-page application to track information of students' internship applications
- Utilized Supabase's realtime Postgres changes to update spreadsheet

EXTRACURRICULARS

Software Developer Sept 2024 – Present
Waterloo Aerial Robotics Group *Waterloo, ON*
- Developed autonomous task processing software for team drone

SKILLS

Languages: Python, C++, C, Java, TypeScript, JavaScript, SQL, HTML, CSS, Sass
Libraries and Frameworks: Django, React, Tailwind CSS, Ultralytics YOLO, Bootstrap
Development Tools: Git, Linux / Unix, AWS, PostgreSQL, SQLite, RabbitMQ, Cloudflare

AWARDS

- Amazon Robotics Hackathon Winner