

Sicheng Ouyang

✉ sicheng.ouyang@uwaterloo.ca ☎ (647)531-8488 🌐 GitHub/carols12352 🔗 LinkedIn/sicheng-ouyang 🌐 sicheng.dev

Skills

- **Languages:** Python, TypeScript, Java, C/C++, SQL, JavaScript
- **Frameworks:** FastAPI, React, Next.js, React Native, PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy
- **Technologies:** PostgreSQL, MySQL, Redis, Docker, Linux, REST APIs, WebSocket, Git, RAG, LangChain

Experience

Mui Scientific

May 2026 – Aug 2026

Software Engineer

Canada · Mississauga

- Architected integrations between **Sage 300 ERP** and third-party inventory systems, enabling serial/batch-level traceability across **10,000+** inventory records and reducing compliance audit turnaround time by **87%**.
- Built data synchronization and reconciliation workflows spanning procurement, warehouse, and sales operations, eliminating **80%** of manual inventory verification tasks.
- Modernized internal software systems by redesigning the **RBB Pump** Android application in **Java** and migrating the corporate website from **PHP/WordPress** to **Next.js**, improving accessibility and maintainability by **68%**.

KnowYi Technology Inc

April 2025 – May 2025

Founding Engineer

Canada · Waterloo

- Built a full-stack internal dashboard MVP using **Python** and **Next.js**, integrating company record traceability, AI pitch deck generation, automated website pain-point research, and real-time data visualization.
- Implemented a multi-file supported, source traceable **PDF** and **Excel** parsing pipelines using **Python** and **OpenAI API**, converting unstructured CAD drawings into structured Excel data with over **90%** extraction accuracy.
- Designed asynchronous research and report generation pipelines, enabling one-click analysis based on company website data in under **15** seconds and reducing manual research effort by **70%**.

Tencent Music Entertainment Group 🎵

Jul 2024 – Aug 2024

Machine Learning Engineer

China · Shenzhen

- Trained and evaluated **10** speech synthesis models through **20+** experiments, identifying optimal parameter configurations for speech generation and vocal simulation tasks.
- Processed audio datasets and extracted acoustic features including **Mel spectrograms** and **F0 representations**, supporting model training, inference testing, and comparison across multiple speech synthesis architectures.
- Tuned model and inference parameters through iterative experiments, improving vocal consistency by **20%** and increasing MOS scores from **3.43** to **3.63**.

Maps Uncharted

Jul 2023 – Aug 2023

Software Development Engineer

China · Wuhan

- Developed a mobile android map application that visualizes user-visited locations using **TypeScript**, **React Native**, and the **Google Maps API**, receiving **50+** positive reviews upon launch.
- Optimized walking trail rendering by merging circles into simplified polygons, reducing storage footprint by **10%**, improving rendering performance, and lowering cloud storage usage by **15%**.

Advanced A-Level Study Website

Sep 2023 – Aug 2025

Co-Founder & Principal Software Development Engineer

China · Wuhan

- Built and operated an A-level education platform using **WordPress**, **PHP**, and **MySQL**, attracting **1,000+** daily active users and serving **200+** students with structured learning resources.

Projects

Real-Time Chat Platform 🗨️

- Built a real-time messaging platform using **FastAPI**, **WebSocket**, **PostgreSQL**, and **Next.js/React**.
- Secured user access by implementing **JWT auth** and **SMTP** email verification, preventing unverified access
- Improved system reliability and message consistency by designing paginated **RESTful APIs** with incremental WebSocket sync, and strengthening robustness through rate limiting and structured error code docs.

Cross-Platform Todo List Application 📝

- Built a Todo application using **React**, **Flask**, and **MySQL** with persistent task storage and synchronization.
- Developed a cross-platform local-deployed system tray desktop & web app for **Windows**, **Linux**, and **macOS**
- Fine-tuned **BERT** to enable natural language task input, parsing user input into **JSON** format for task creation.

Personal Website 🌐 🗨️

- Built and deployed a personal website using Next.js, TypeScript, MDX, and Vercel, achieving **<0.5s LCP**, **0 CLS**, and improved search visibility through **SEO optimization**.

Education

University of Waterloo, Canada

Bachelor of Software Engineering

Sep 2025 – Present

Relevant Courses: Data Structures, Algorithms, Linear Algebra, Object-Oriented Programming, AI fundamentals