Sicheng Ouyang

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Skills

- **Programming Languages:** Python, Java, C++, HTML/CSS, JavaScript, TypeScript
- **Tools/Frameworks:** Git, Flask, React, React Native, MySQL, WordPress, Microsoft Office Suite, LaTeX
- **Languages:** English (Fluent), Mandarin Chinese (Native), French (Basic)

Experience

Advanced A-Level Study Website   *Sep 2023 – Aug 2025*
Co-Founder & Principal Software Development Engineer   China · Wuhan
- Built an A-level study exam preparation website using **WordPress**, **PHP**, and **MySQL**, deployed on **Tencent Cloud** with user login and SEO features, steadily attracting **1,000** daily active users and maintaining high uptime.
- Curated **50+** study notes and **20+** lecture recordings and organized course content using **WordPress**, improving learning resource structure and content accessibility for **200+** students and increasing user engagement.

Tencent Music Entertainment Group 🎵   *Jul 2024 – Aug 2024*
Machine Learning Engineer   China · Shenzhen
- Evaluated 10 speech synthesis models and ran **20+** parameter experiments to improve vocal simulation quality.
- Integrated models and tuned alignment parameters, achieving a **20%** gain in vocal consistency.
- Produced an AI-generated music video to raise Alzheimer's awareness, gaining over **200,000** views.

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 **5%**, improving rendering performance, and lowering cloud storage usage by **10%**.

Wuhan University of Technology   *Jul 2023 – Aug 2023*
Data Analyst   China · Wuhan
- Conducted handwriting recognition experiments by preprocessing hand-drawn samples (noise removal, binarization, vectorization) and building a exploratory dataset using **Python**, achieving **96%** recognition accuracy.
- Deployed a local deepseek using **Ollama**, used by **20** users to support research for the School of Physical Education.

Projects

Chat WebSocket Demo ⓞ
- Delivered real-time chat by **FastAPI + WebSocket** backend with **PostgreSQL** and **Next.js/React** frontend.
- Secured user access by implementing **JWT auth** and SMTP email verification, preventing unverified access
- Improved system reliability and message consistency by designing paginated REST APIs with incremental WebSocket sync, and strengthening robustness through rate limiting and structured error code docs.

Todo List Web & Desktop Application ⓞ
- Built a full-stack task management application using **React**, **Flask**, and **MySQL**, supporting full CRUD operations.
- Developed a cross-platform system tray desktop app packaged for both Windows and macOS.
- Fine-tuned BERT to enable natural language task input, parsing user input into **JSON** format for task creation.

Nurel AI playground ⓞ ▶
- Developed a web app with a group of 4 using **FastAPI** and **React** that allows users to train AI models with customizable hyperparameters and visualize training in real time, running locally for experimentation.

Bookkeeping Command-Line Tool ⓞ
- Developed a bookkeeping tool in **Python** with argparse-based CLI input handling, file I/O persistence, and modular command structure for expense tracking.

Obsidian Oreo Theme Developer ⓞ
- Designed a custom Oreo-themed Obsidian theme using **HTML** and **CSS**, over **3,000** downloads on obsidian

Resume Analyzer ⓞ
- Developed a resume evaluation tool using **Python**, **Flask**, and **React** and integrated the **OpenAI API** to generate structured resume feedback.

Education

University of Waterloo, Canada
Bachelor of Software Engineering   *Sep 2025 – Present*
Relevant Courses: Data Structures, Algorithms, Linear Algebra, Object-Oriented Programming, AI fundamentals