

Zewen Liu

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Education

University of Waterloo

Sep 2023 – Apr 2028 [Expected]

Bachelor of Mathematics, Applied Mathematics

Waterloo, ON, Canada

Specialization in Scientific Computing and Scientific Machine Learning

Experience

University of Waterloo

Jan 2026 – Aug 2026

Instructional Support Assistant – CS 136

Waterloo, ON, Canada

- Proposed and built a Python/pandas tool to reconcile iClicker responses with attendance records and export discrepancies to CSV for review.
- Developed a Python/XlsxWriter command-line tool to generate formatted Excel attendance sheets from LEARN (D2L) class lists by section and date.
- Used Codex to navigate existing code, update code-style checking scripts, and develop attendance-processing tools.
- Supported course ops. for 900+ students, working with professors to propose workflow improvements.
- Provided 100+ hours of office-hour support, independently led exam review sessions, explained programming concepts to students, and proctored quizzes, midterms, and finals.

MorningStone AI+

Sep 2024 – Dec 2024

Backend Software Engineer

Beijing, China

- Built FastAPI endpoints to process Excel and ZIP uploads, consolidate records with pandas, and import data into MySQL.
- Integrated MinIO object storage with an existing PDF parser, exposing a FastAPI endpoint to retrieve reports and return structured JSON.
- Extended a Kimi-powered Gradio tool that extracts structured records from chat messages, refining prompts and adding Excel/JSON exports and MySQL storage.

Projects

Flight Award Availability Search Tool

Sep 2024 – Aug 2025

- Built a Python client for seats.aero API to retrieve Aeroplan award availability across configurable routes.
- Implemented date, cabin, points-cost, and airline filters using CSV inputs, exporting matching results as JSON files grouped by route.

Chess Game

Jul 2024 – Aug 2024

- Developed board-state management and command-line game flow for a C++ chess game in a three-person team, using polymorphic piece interfaces and smart pointers.
- Implemented the Observer pattern to synchronize console and X11 graphical displays with board updates.
- Implemented custom board setup and pawn promotion, and fixed en passant move classification.

AnonyLetter

Feb 2020 – Jun 2021

- Built and maintained anonyletter.com, an online service for sending personal letters by mail.
- Managed the service from website orders through letter printing and mailing.

Technical Skills

Languages: Python, SQL, C++, C, JavaScript, Java, Bash

Frameworks: FastAPI, pandas, requests, XlsxWriter, openpyxl, Pydantic, Gradio, NumPy, OpenAI SDK

Tools & Platforms: Git, Codex, Linux, MySQL, MinIO, GitHub, GNU Make