

Junhao Zhao

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EDUCATION

Temple University — College of Science & Technology
B.S. in Computer Science (Studied Abroad Fall 2025)

Philadelphia, PA / Tokyo, JP
Fall 2022 – Spring 2026

EXPERIENCE

Fox Chase Cancer Center — Duy Lab
Undergraduate Researcher

Philadelphia, PA
May 2025 – Present

- Built a full-stack research platform from the ground up using Next.js, Tailwind CSS, and FastAPI for analyzing and visualizing drug synergy data in cancer treatment research.
- Tested code, analyzed outputs, and proposed algorithmic improvements for drug synergy modeling and analysis.
- Presented weekly research progress and incorporated feedback from team members and the PI to refine analysis methods, improve workflows, and guide next steps.
- Reviewed current research papers in journal discussions to improve experimental methods, data visualization choices, and scientific communication.

ITD-GBS

Software Engineering Intern

Tokyo, Japan
Aug 2025 – Dec 2025

- Implemented frontend updates in Vue 3 and Vite, including bug fixes, UI adjustments, and missing language support for the cookie banner.
- Worked in a startup engineering environment with weekly sprint planning and review cycles while contributing incremental product updates.

Temple University

Course Assistant (STEM Leadership Fellow)

Philadelphia, PA
Aug 2024 – May 2025

- Supported 60+ medical students in learning Python, Jupyter Notebook, and pandas through hands-on guidance in data-focused programming coursework.
- Guided students through debugging and solving data-focused programming problems, including sorting, analyzing, and working with structured datasets.

PROJECTS

Baketsu — Cloud Storage Solution (*Next.js, TypeScript, FastAPI, Python, SQLite, AWS S3*)

- Designed the initial FastAPI backend architecture by organizing the codebase into core, models, routes, schemas, and services to support scalability, maintainability, and cleaner feature development.
- Built a backend-controlled AWS S3 upload pipeline that supported verified file uploads and persisted metadata in SQLite for reliable file tracking.
- Implemented database models to track uploaded files, associate them with user accounts, and aggregate per-user storage usage for dashboard analytics and pricing breakdowns.
- Developed backend endpoints for storage retrieval and image display, and implemented email-based account verification using secure token generation and server-side email delivery.

Drug Synergy Analyzer — Research Tool (*Next.js, TypeScript, FastAPI, Python, SciPy, Plotly*)

- Researched and implemented LL4/LL5 curve fitting and drug synergy methods in Python, translating Bliss and a custom SAPE-based approach into an end-to-end analysis pipeline.
- Built a Python-based data pipeline that processed uploaded experimental dose-response datasets into fitted logistic models, computed synergy metrics, and generated visual outputs for downstream research analysis.
- Developed interactive visualizations using Plotly and D3, including dose-response curve fits, response matrix heatmaps, SAPE score plots, and summary metric tables to help interpret drug synergy results.
- Contributing to an in-progress research manuscript focused on SAPE methodology and visualization design, while continuing to refine the algorithm with my PI.

SKILLS

Languages: Python, Java, C, JavaScript, TypeScript, SQL, Bash, HTML/CSS

Frameworks & Libraries: Next.js, React, Vue 3, FastAPI, Plotly, Tailwind CSS

Tools & Platforms: Git, GitHub Actions, Vercel, AWS (EC2, S3), SQLite