

Zihao (Gary) Wang

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Research Interests: Computing Education Research (CER); Digital Folklore & Meme Studies; Human-Centered Computing

EDUCATION

University of Michigan | Ann Arbor, MI **Expected Apr 2027**

B.S. in Data Science; Minor in Mathematics | GPA: 3.89 | University Honors (Fall 2025)

Selected Coursework: Information Retrieval, Statistics & AI, Statistical Computing, Database Systems, Data Structures & Algorithms, Probability, Linear Algebra

University of Rochester | Rochester, NY **Aug 2023 - May 2025**

Completed coursework in Data Science, Economics, and Mathematics | GPA: 3.91 | Dean's List (4 semesters)

RESEARCH EXPERIENCE

Undergraduate Research Assistant | University of Michigan **May 2026 - Present**

STEM Education Assistance | Advisor: Dr. Yun Chen

- Developed a React/TypeScript research prototype for an ongoing computing education project exploring human-centered support for mathematical learning.
- Collaborated with faculty to translate research questions into accessible user workflows and iteratively refine the system through design, implementation, and testing.

Researcher, STEFORALL | University of Rochester **Jul 2026 - Present**

- Conducted a literature review to assess the novelty and feasibility of candidate approaches to language-model interpretability, narrowing the project to sparse autoencoders and interpretable-by-design architectures.
- Compared alternative training objectives and observed that, under certain conditions, normalized-MSE training reduced both reconstruction error and next-token prediction loss.
- Prototyped an interpretable-by-design architecture by replacing Pythia-160M's feed-forward layers with sparse transcoders, then evaluated how well the modified model preserved the original model's behavior.

SELECTED PROJECTS

Social Media Use Risk Assessment – EECS 486 Capstone | University of Michigan **Jan 2026 - Apr 2026**

- Built and evaluated an XGBoost model to estimate self-reported productivity loss from a Kaggle dataset; analyzed how noisy and inconsistent data constrained model performance.
- Built an interactive web application using vector embeddings to match users with existing profiles in the database and visualize comparisons with similar users.

BME Summer Hackathon | University of Rochester **Aug 2024**

- Led a 4-member team to 7th place among 51 teams; developed a gradient boosting model to predict associations between DNA peaks and genes, achieving 90% precision in final evaluation.

NYC Transportation Data Science Explorer | NSDC **May 2024 - Sep 2024**

- Analyzed 1 million NYC collision records with time-series analysis and geospatial mapping; designed a severity index using the number of casualties and parties involved and identified the ZIP codes with the highest collision-severity scores.

TEACHING EXPERIENCE

Summer School Teaching Assistant | University of Michigan **Jun 2026 - Jul 2026**

- Taught 20+ high school students machine learning, calculus, probability, and AI ethics in the 'AI Ain't Magic' summer course.
- Delivered mini lectures on gradient descent, probability and softmax, and the relationship between existentialist philosophy and AI ethics; designed an interactive game show to reinforce students' understanding.

Mathematics Teaching Assistant | University of Rochester **Aug 2024 - May 2025**

- Supported Linear Algebra students through WeBWork. Answered 300+ student questions during the 2024-25 academic year and provided conceptual and problem-solving guidance on Linear Algebra problems.

Economics Teaching Assistant | University of Rochester **Aug 2024 - Jan 2025**

- Designed and led weekly recitation sections, graded assignments and exams, and held office hours for Principles of Economics.
- Conducted exam-review sessions serving more than 60 students and analyzed previous exams to teach effective problem-solving and test-taking strategies.

INDUSTRY EXPERIENCE

Software Engineering Intern | Beijing 6Cloud Technology **Jun 2025 - Jul 2025**

- Diagnosed 50+ defects by using an LLM to generate root-cause hypotheses, then validating proposed explanations through reproduction and software testing.
- Synthesized observed defects and LLM-assisted analysis into a development and testing checklist covering design, implementation, and validation phases.

TECHNICAL SKILLS

Programming: Python, C++, SQL, Java, R

Libraries/Tools: pandas, NumPy, scikit-learn, Slurm

Methods: XGBoost, random forests, vector embeddings, time-series analysis, geospatial analysis

Languages: Mandarin Chinese (native), English (full professional proficiency), Spanish (elementary)

LEADERSHIP & ACTIVITIES

Michigan Quiz Bowl Team Member | University of Michigan **Aug 2025 - Present**

Quiz Bowl Tournament Director | University of Rochester **Aug 2023 - May 2025**

- Hosted a 14-team (50+ players) tournament and trained 10 tournament staff.