

# Yifan Liu

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## Education

### The Ohio State University

B.S. in Computer Science

GPA: 4.0/4.0

Aug. 2023 – May 2026

Columbus, OH

Core Courses: Machine Learning, Computer Vision, Artificial Intelligence, Operating Systems

### Hohai University

Hydrology and Water Resources Engineering

GPA: 4.69/5.0

Sep. 2020 - May 2023 (Transferred)

Nanjing, China

## Research Interest

Trustworthy AI, Large Language Model, Multimodal Learning, AI for Healthcare

## Publications

### OpenSight: Explainable Open-Set Fine-Grained Recognition with MLLMs

Khan, F., Liu, Y., Gu, J., Chao, W., Elhoseiny, M.

Under Review

### BeetleFlow: An Integrative Deep Learning Pipeline for Beetle Image Processing

Liu, F., Rayeed, S. M., Stevens, S., ... Liu, Y., Record, S., Stewart, C. V., Chao, W.

NeurIPS 2025 Workshop for Imageomics

### Effects of wastewater treatment plant effluent on microbial risks of pathogens and their antibiotic resistance in the receiving river

Xiao, Z., Qin, Y., Han, L., Liu, Y., Wang, Z., Huang, Y., Ma, Y., Zou, Y.

Environmental Pollution (2024)

## Research Experience

### Undergraduate Research Assistant

July 2025 – Present

Supervised by: Dr. Wei-Lun (Harry) Chao

- Built a **multimodal attention visualization** pipeline to trace how Qwen2.5-VL models ground each generated token in prior text and image tokens, by capturing per step head-averaged attention.
- Implemented an **image-token heatmap** module overlaying the model's attention weights onto the input image.
- Created a **text-token highlighter** showing Qwen2.5-VL-7B's reliance on earlier hallucinated text.

### Summer Research Intern

May 2024 – Aug. 2024

BMI Department, The Ohio State University

- Implemented a pre-processing pipeline of 3D cardiac MRI, including resampling, cropping and intensity normalization.

### Environmental Science Research Assistant

Feb. 2022 – Dec. 2023

Supervised by: Dr. Yina Zou, Hohai University (Nanjing, China)

- Conducted sampling and measurement of physicochemical factors in samples to analyze river water quality.

## Teaching Experience

### Undergraduate Teaching Assistant

Feb. 2025 – Present

- *CSE 2331 (Foundations II: Data Structures and Algorithms)*  
Provided in-class assistance, held office hours, and helped with exam preparation.
- *CSE 2421 (Systems I: Introduction to Low-Level Programming and Computer Organization)*  
Graded labs and helped with debugging C and assembly language in office hours.

## Skills

**Programming Languages:** Python, C/C++, Java, SQL, JavaScript, HTML/CSS

**Tools and Frameworks:** PyTorch, Git, Linux, Slurm (HPC), LaTeX, Markdown, Docker