Zongzhe Xu

5890 Greenvalley Cir., Los Angeles, CA, 90230

zongzhex@ucla.edu | (+1) (314) 319-2028

Education

University of California, Los Angeles — Aug. 2025 - Now
PhD student in Computer Science

Carnegie Mellon University, PA — Aug. 2023 – Dec. 2024
Master of Science in Machine Learning

Washington University in St. Louis, MO — Sep. 2019 – May 2023
Summa Cum Laude
B.S. in Computer Science and Mathematics | Minor in Bioinformatics | Minor in Biology

- Major GPA: 3.99/4.0
- Dean's List for every semester
- Dean Select Fellowship - $5,000 Annually

Research Interest AI for health, foundation models, multimodal learning, time series

Selected Publications

SleepLM: Natural-Language Intelligence for Human Sleep.
Z. Xu, Z. Shuai, E. Mozaffari, R. S. Aysola, R. Kumar, and Y. Yang.
International Conference on Machine Learning (ICML), 2026

OSF: On Pre-training and Scaling of Sleep Foundation Models.
Z. Shuai, **Z. Xu**, D. Yang, W. Wang, and Y. Yang
arXiv preprint, 2026

This Time is Different: An Observability Perspective on Time Series Foundation Models
B. Cohen, E. Khwaja, … **Z. Xu**, … D. Asker, A. Talwalkar, O. Abou-Amal
Conference on Neural Information Processing Systems (NeurIPS), 2025

Specialized Foundation Models Struggle to Beat Supervised Baseline
Z. Xu*, R. Gupta*, W. Cheng, A. Shen, J. Shen, A. Talwalkar, and M. Khodak
International Conference on Learning Representations (ICLR), 2025

V2X-DG: Domain Generalization for Vehicle-to-Everything Cooperative Perception
B. Li*, **Z. Xu***, J. Li, X. Liu, J. Fang, X. Li, and H. Yu
IEEE International Conference on Robotics and Automation (ICRA), 2025

Research Experience

HAIL Lab, University of California, Los Angeles
Graduate Student Researcher — Aug. 2025 – Now
Supervised by Dr. Yuzhe Yang, UCLA

Datadog, Inc. — Jan. 2025 – July 2025
Data Scientist Intern

- Surveyed modern time series foundation models and developed a unified evaluation framework to benchmark 14 state-of-the-art agentic, pretrained, and supervised forecasting models under standardized preprocessing, inference, and evaluation protocols.
- Conducted large-scale empirical evaluation of zero-shot and supervised forecasting models on observability and public time series benchmarks, enabling fair and reproducible comparison across model families.

- Contributed to TOTO, a forecasting foundation model for observability data, by proposing timestamp-aware positional embeddings that encode real temporal spacing and granularity to better capture frequency-dependent structure in time series.

Sage Lab, Carnegie Mellon University
Graduate Student Researcher Sep. 2023 – Dec. 2024
Supervised by Dr. Ameet Talwalkar, Carnegie Mellon University

- Critically assessed if the significant resources required to train and deploy foundation models in three specialized domains (genomics, time series, and satellite imaging) are always justified by a substantial performance gain. Discovered that traditional supervised methods could achieve competitive, if not superior, performance when appropriately configured and optimized.
- Enhanced cross-modal fine-tuning to adapt LLMs for scientific tasks, integrating regularization strategies, and refining alignment approaches for improved robustness across modalities.

Cleveland Vision & AI Lab, Cleveland State University
Research Assistant March 2024 – Nov. 2024
Supervised by Dr. Hongkai Yu, Cleveland State University

- Deviced algorithms with Mix-up representations of point clouds from ego&nonego vehicles and alignment methods that increases the generalizability of the algorithm across diverse test time sim&real environments
- Implemented and tested a novel adversarial algorithm for 3D multiagent perception. The adversarial algorithm is robust to multiple potential communications corrupts during cooperations.

DAMO academy, Alibaba | Sichuan Digital, Shudao Investment Group
Research Intern Jun. 2023 – July 2023

- Built a few shots classifier based on training free adaptation on top of existing models to achieve higher accuracy in open vocabulary object detection in traffic context. Evaluated on traffic management and road condition monitoring under abnormal conditions such as tunnels, rainy weather, and traffic jam.

OBGYN Department, Washington University School of Medicine
Part-time Clinical Researcher Mar. 2021-Apr. 2023
Supervised by Dr. Peinan Zhao, Washington University in St Louis

- Contributed end to end to the longitudinal research from sensor data collection & calibration to ultrasounds & pressure analysis to inspect the relationship between cervical softening and pre-term birth.
- Designed edge detection & track system to track cervical compression in ultrasound images to calculate the cervical young's modulus. Integrated various ML methods throughout the project (Laplacian filter & Fourier decomposition for image denoising, group linear regression over patient records for trend detection)
- Proposed and constructed a hardware + software system that synchronizes the data input from sensors and loadcells and provide real time visualizations to simplify the operations in real clinical tests. Automated the processing program to accurately capture cervical structure in real time.

Teaching Experience

James McKelvey School of Engineering, Washington University in St. Louis
Teaching Assistant Sep. 2021 – Jun. 2022

- CSE 412 Introduction to Artificial Intelligence, CSE 417 Machine Learning Theory.
- An average of 4-6 office hours weekly to answer problems and teach students. Assist in test & homework grading. Helped and tutored students from classes of size over 70.

Additional Experience/Awards

2022 ACM volunteer in hosting Dr. Baeza-Yates's talk on Web Bias

2018 USAD International: gold medals in social science & science, silver medal in economics.

Skills

Python, R, Java, C++, SQL, C, Pytorch, Keras, MCP, vLLM