Lingwei Zhang

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RESEARCH INTEREST

- Large language model reasoning.
- Multimodal large language models, Vision–Language–Action models.

EDUCATION BACKGROUND

Pennsylvania State University, State College, Pennsylvania **08/2025 - 05/2030 (expected)**

- Ph.D. in Informatics
- Advisor: Dr. Fenglong Ma

Johns Hopkins University, Baltimore, Maryland **08/2023-05/2025**

- M.S. in Computer Science

Tsinghua University, Beijing, China **09/2018-06/2022**

- B.Eng. in Computer Science and Engineering, **Yao Class** (Experimental CS Department)
- Advisor: Dr. Yang Yu

PUBLICATIONS

Haotian Chen, **Lingwei Zhang**, Yiran Liu, and Yang Yu, "Rethinking the development of large language models from the causal perspective: A legal text prediction case study," in *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI-24),* February 20, 2024.

Lingwei Zhang, Jiaqi Wang, and Fenglong Ma, "IQAR: Intent-aware Query Augmentation for Zero-shot Retrieval," *Manuscript under submission, 2026.*

Yiran Liu, **Lingwei Zhang**, Yafei He, Jiaxuan Li, and Yang Yu, "Causal Graph Alignment for LLM Reasoning: Autoregressive Modeling via Causal Bayesian Factorization," *Manuscript under submission, 2025.*

Xiaochen Wang, Yuan Zhong, **Lingwei Zhang**, Lisong Dai, Ting Wang, and Fenglong Ma, "MEDMKG: Benchmarking Medical Knowledge Exploitation with Multimodal Knowledge Graph," *Manuscript under submission, 2025.*

Haotian Chen, **Lingwei Zhang**, Yiran Liu, Fanchao Chen, and Yang Yu, "Knowledge is power: Understanding causality makes legal judgment prediction models more generalizable and robust," *arXiv preprint* arXiv:2211.03046, November 5, 2022.

RESEARCH EXPERIENCE

PhD Researcher @ Pennsylvania State University

- Research on LLM/MLLM/VLA reasoning and retrieval-augmented generation
- Developing intent-aware retrieval frameworks for LLM grounding
- Investigating multimodal reasoning and grounding in LLMs

Research Assistant @ Tsinghua University | Prof. Yang Yu

- Developed causal analysis methods for LLM reasoning
- Studied robustness and adversarial behavior of LLMs
- Investigated data imbalance from a causal perspective

TEACHING EXPERIENCE

Course Assistant @ Johns Hopkins University

- EN.601.661 Computer Vision | Instructor: Dr. Kapil D. Katyal

ACADEMIC SERVICE

- Reviewer, IEEE BigData2025

HONORS & AWARDS

- **University Graduate Fellowship (UGF)** — Pennsylvania State University, 2025 (Highest departmental fellowship; 1 recipient per department)
- **First-Class Honors** — Tsinghua University, 2018 (Top 1%)
- **Xuetang Honors Program Scholar** — Tsinghua University, 2018–2021 (Top 5%)