XINLU ZHANG

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RESEARCH INTERESTS

My research focuses on building efficient, reliable, and domain-aware LLMs through post-training and evaluation to boost reasoning, instruction-following, and domain expertise. Broader interests include multimodal learning, time-series modeling, and label-efficient training.

EDUCATION

Ph.D. in Computer Science   Sep. 2020 - July 2024
University of California, Santa Barbara
Advisor: Prof. Linda Petzold

M.S. in Statistics   Aug. 2018 - May 2020
Indiana University, Bloomington

B.S. in Statistics and Mathematics   Aug. 2015 - July 2018
Indiana University, Bloomington

PUBLICATIONS AND PREPRINTS

Post Training & Data Recipe for LLMs

1. **Unveiling the Impact of Coding Data Instruction Fine-Tuning on Large Language Models Reasoning**
   Xinlu Zhang, Zhiyu Zoey Chen, Xi Ye, Lichang Chen, Xianjun Yang, William Yang Wang, Linda Petzold
   Proceedings of AAAI 2025 (oral)

2. **Explanations from Large Language Models Make Small Reasoners Better**
   Shiyang Li, Jianshu Chen, Yelong Shen, Zhiyu Chen, **Xinlu Zhang**, Zekun Li, Hong Wang, Jing Qian, Baolin Peng, Yi Mao, Wenhu Chen, and Xifeng Yan
   AAAI 2024 Workshop on Sustainable AI (SAI-AAAI2024)

3. **AlpaCare:Instruction-tuned Large Language Models for Medical Applications**
   Xinlu Zhang, Chenxin Tian, Xianjun Yang, Lichang Chen, Zekun Li, Linda Petzold
   ICLR 2025 Open Science for Foundation Models (SCI-FM) Workshop

4. **Enhancing Small Medical Learners with Privacy-preserving Contextual Prompting**
   Xinlu Zhang, Shiyang Li, Xianjun Yang, Chenxin Tian, Yao Qin, Linda Petzold
   Proceedings of ICLR 2024

Evaluation & Analysis

1. **Do Retrieval-Augmented Language Models Adapt to Varying User Needs?**
   Peilin Wu*, **Xinlu Zhang***, Wenhao Yu, Xingyu Liu, Xinya Du, Zhiyu Zoey Chen (*Equal Contribution)
   Under review

2. **GPT-4V(ision) as a Generalist Evaluator for Vision-Language Tasks**
   Xinlu Zhang*, Yujie Lu*, Weizhi Wang*, An Yan, Jun Yan, Heng Wang, Xifeng Yan, William Yang Wang, Linda Petzold (*Equal Contribution)
   Preprint

3. **CBT-Bench: Evaluating Large Language Models on Assisting Cognitive Behavior Therapy**
   Mian Zhang, Xianjun Yang, **Xinlu Zhang**, Travis Labrum, Jamie C Chiu, Shaun M Eack, Fei Fang, William Yang Wang, Zhiyu Zoey Chen
   Proceedings of NAACL 2025

4. **Exploring the Limits of ChatGPT for Query or Aspect-based Text Summarization**
   Xianjun Yang, Yan Li, **Xinlu Zhang**, Haifeng Chen, Wei Wang
   Preprint

5. **A Survey on Large Language Models for Critical Societal Domains: Finance, Healthcare, and**

Law

Zhiyu Zoey Chen, Jing Ma, **Xinlu Zhang**, Nan Hao, An Yan, Armineh Nourbakhsh, Xianjun Yang, Julian McAuley, Linda Petzold, William Yang Wang

TMLR 2024 (Survey Certification)

Architectures, Datasets & Domain Applications

1. **Improving Medical Predictions by Irregular Multimodal Electronic Health Records Modeling**
   Xinlu Zhang*, Shiyang Li*, Zhiyu Zoey Chen, Xifeng Yan, and Linda Petzold (*Equal Contribution)
   Proceedings of ICML 2023

2. **PcMSP: A Dataset for Scientific Action Graphs Extraction from Polycrystalline Materials Synthesis Procedure Text**
   Xianjun Yang, Ya Zhuo, Julia Zuo, **Xinlu Zhang**, Stephen Wilson, and Linda Petzold
   Findings of EMNLP 2022

3. **Domain Adaptation for Trauma Mortality Prediction in EHRs with Feature Disparity**
   Xinlu Zhang, Shiyang Li, Zhuowei Cheng, Rachael Callcut, and Linda Petzold
   Proceedings of BIBM 2021

4. **An Analysis of Relation Extraction from Wet Lab Protocols**
   Xianjun Yang, **Xinlu Zhang**, Julia Zuo, Stephen Wilson, and Linda Petzold
   Proceedings of BigData 2021

5. **BERTSurv: BERT-Based Survival Models for Predicting Outcomes of Trauma Patients**
   Yun Zhao, Qinghang Hong, **Xinlu Zhang**, Yu Deng, Yuqing Wang, Paul K. Hansma, and Linda Petzold
   Proceedings of ICDM 2021

PROFESSIONAL EXPERIENCE

Senior Machine Learning Engineer — Sep. 2024 - Current
LinkedIn, Sunnyvale, CA

- **LLM Agent:** Develop a LLM-based multi-agent system to optimize LinkedIn's hiring process, incorporating customized recruiter preferences.
- **LLM Semantic Search:** Conduct applied research on building robust LLM semantic search system to incorporate user needs.

Research Scientist Intern — Sep. 2023 - Dec. 2023
Meta, Burlingame, CA

- Developed applied research on audio and EMG data for multimodal few-shot identity verification.

Machine Learning Engineer Intern — June 2023 - Sep. 2023
LinkedIn, Sunnyvale, CA

- Developed LLM-based embedding methods to improve internal downstream task performance by up to 80% relative gain compared to taxonomy-based methods.

Machine Learning Engineer Intern — June 2022 - Sep. 2022
LinkedIn, Sunnyvale, CA

- Enhanced job recommendation models using multitask learning to incorporate user feedback.

ONGOING PROJECT

Enhancing LLM Reasoning for Search Efficiency via Reinforcement Learning — March 2025 – Present

- Improving LLMs reasoning on search via reinforcement learning to balance internal knowledge utilization and external search engine interactions for searching effectiveness and efficiency.

AWARDS & SERVICES

- **Selected Reviewer:** ICML 2024/2025, NeurIPS 2023/2024, ICLR 2024/2025, AAAI 2023/2024/2025, AISTATS 2023
- Academic Excellence Fellowship, Department of CS at UCSB — 2020
- Full tuition scholarship for graduate students, Department of Statistics at IU — 2018-2020
- Howard W.Fieber Scholarship — 2016