

# Leitian Tao

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## Research Interests

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Post-training of LLMs; AI Agents; Multi-Modality

## Education

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**University of Wisconsin-Madison** Ph.D. in Computer Science

Madison, WI  
Aug 2023 – Present

- Advisor: Prof. Sharon Li
- Research: LLM Alignment, AI Safety, RL, Post-training

**Wuhan University** B.Eng. in Information Engineering

Wuhan, China  
Aug 2019 – Jun 2023

- Advisor: Prof. Zhenzhong Chen

## Experience

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**Meta (Facebook AI Research)** Research Scientist Intern

Bellevue, WA  
May 2025 – Present

- Mentors: Dr. Ping Yu, Dr. Jason Weston
- Research on improving LLM reasoning beyond binary verifiable rewards

**Adobe Research** Research Scientist Intern

San Jose, CA  
May 2024 – Dec 2024

- Mentors: Dr. Xiang Chen, Dr. Tong Yu
- Developed **CodeLutra**, a preference-learning framework improving code generation using success and failure signals

**Shanghai AI Lab** Research Intern

Shanghai, China  
Oct 2022 – Mar 2023

- Mentors: Dr. Peng Gao
- Studied fine-tuning methods for multi-modal model alignment

## Preprints

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**Hybrid Reinforcement: When Reward Is Sparse, It's Better to Be Dense**

Leitian Tao, Ilia Kulikov, Swarnadeep Saha, Tianlu Wang, Jing Xu, Yixuan Li, Jason Weston, Ping Yu

**The Era of Real-World Human Interaction: RL from User Conversations**

Chuanyang Jin, Jing Xu, Bo Liu, Leitian Tao, Olga Golovneva, Tianmin Shu, Wenting Zhao, Xian Li, Jason Weston

**RESTRAIN: From Spurious Votes to Signals – Self-Driven RL with Self-Penalization**

Zhaoning Yu, Will Su, Leitian Tao, Haozhu Wang, Aashu Singh, Hanchao Yu, Jianyu Wang, Hongyang Gao, Weizhe Yuan, Jason Weston, Ping Yu, Jing Xu

## Publications

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**Limited Preference Data? Learning Better Reward Model with Latent Space Synthesis**

NeurIPS 2025

Leitian Tao, Xuefeng Du, Yixuan Li

**Your Weak LLM is Secretly a Strong Teacher for Alignment**

ICLR 2025

Leitian Tao, Yixuan Li

**CodeLutra: Boosting LLM Code Generation via Preference-Guided Refinement**

TMLR

Leitian Tao, Xiang Chen, Tong Yu, Tung Mai, Ryan Rossi, Yixuan Li, Saayan Mitra

**Non-Parametric Outlier Synthesis**

ICLR 2023

Leitian Tao, Xuefeng Du, Xiaojin Zhu, Yixuan Li

**Predicate Correlation Learning for Scene Graph Generation**  
Leitian Tao, Li Mi, Nannan Li, Xianhang Cheng, Yaosi Hu, Zhenzhong Chen

IEEE TIP

**Activate and Reject: Safe Domain Generalization under Category Shift**  
Chaoqi Chen, Luyao Tang, Leitian Tao, Hong-Yu Zhou, Yue Huang, Xiaoguang Han, Yizhou Yu

ICCV 2023

**Position: Challenges and Future Directions of Data-Centric AI Alignment**  
Min-Hsuan Yeh, Jeffrey Wang, Xuefeng Du, Seongheon Park, Leitian Tao, Shawn Im, Yixuan Li

ICML 2025

## Teaching

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Teaching Assistant, UW–Madison: Data Science Programming II (CS 320)

## Professional Service

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Reviewer: ICML, ICLR, NeurIPS, ICME, IJCV

## Skills

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**Languages:** Python, C++, JavaScript, SQL

**Frameworks:** PyTorch, TensorFlow, Scikit-learn, Flask