

# Leitian Tao

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## Research Interests

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

## Education

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|---|-----------------------------------|---------------------|
| <b>University of Wisconsin–Madison</b>                  | Ph.D. in Computer Science         | Madison, WI         |
| • Advisor: Prof. Sharon Li                              |                                   | Aug 2023 – Present  |
| • Research: LLM Alignment, AI Safety, RL, Post-training |                                   |                     |
| <b>Wuhan University</b>                                 | B.Eng. in Information Engineering | Wuhan, China        |
| • Advisor: Prof. Zhenzhong Chen                         |                                   | Aug 2019 – Jun 2023 |

## Experience

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| <b>Meta (Facebook AI Research)</b>   | Research Scientist Intern | Bellevue, WA        |
| • Mentors: Dr. Ping Yu, Dr. Jason Weston   |                           | May 2025 – Present  |
| • Research on improving LLM reasoning beyond binary verifiable rewards   |                           |                     |
| <b>Adobe Research</b>  | Research Scientist Intern | San Jose, CA        |
| • Mentors: Dr. Xiang Chen, Dr. Tong Yu   |                           | May 2024 – Dec 2024 |
| • Developed <b>CodeLutra</b> , a preference-learning framework improving code generation using success and failure signals |                           |                     |
| <b>Shanghai AI Lab</b>   | Research Intern           | Shanghai, China     |
| • Mentors: Dr. Peng Gao  |                           | Oct 2022 – Mar 2023 |
| • Studied fine-tuning methods for multi-modal model alignment  |                           |                     |

## Preprints

- 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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|--|--------------|
| <b>Limited Preference Data? Learning Better Reward Model with Latent Space Synthesis</b> | NeurIPS 2025 |
| <b>Leitian Tao</b> , Xuefeng Du, Yixuan Li   |              |
| <b>Your Weak LLM is Secretly a Strong Teacher for Alignment</b>                          | ICLR 2025    |
| <b>Leitian Tao</b> , Yixuan Li   |              |
| <b>CodeLutra: Boosting LLM Code Generation via Preference-Guided Refinement</b>          | TMLR         |
| <b>Leitian Tao</b> , Xiang Chen, Tong Yu, Tung Mai, Ryan Rossi, Yixuan Li, Saayan Mitra  |              |
| <b>Non-Parametric Outlier Synthesis</b>  | ICLR 2023    |
| <b>Leitian Tao</b> , Xuefeng Du, Xiaojin Zhu, Yixuan Li                                  |              |

**Predicate Correlation Learning for Scene Graph Generation**

IEEE TIP

**Leitian Tao**, Li Mi, Nannan Li, Xianhang Cheng, Yaosi Hu, Zhenzhong Chen**Activate and Reject: Safe Domain Generalization under Category Shift**

ICCV 2023

Chaoqi Chen, Luyao Tang, **Leitian Tao**, Hong-Yu Zhou, Yue Huang, Xiaoguang Han, Yizhou Yu**Position: Challenges and Future Directions of Data-Centric AI Alignment**

ICML 2025

Min-Hsuan Yeh, Jeffrey Wang, Xuefeng Du, Seongheon Park, **Leitian Tao**, Shawn Im, Yixuan Li

## 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