TIAN XIE

[Homepage](#) ⬦ [Google Scholar](#) ⬦ tianxie143@gmail.com

RESEARCH FOCUS

Staff Research Scientist specializing in multimodal generative AI (MLLM + video), with a focus on reasoning, alignment, and scalable post-training systems. Experienced in building end-to-end production systems for multimodal models, including data pipelines, reward modeling, and large-scale evaluation.

PROFESSIONAL EXPERIENCE

Meta Platforms, Inc.

- Staff Research Scientist   *Aug. 2025 -*
- Senior Research Scientist   *Feb. 2024 - Aug. 2025*
- Research Scientist   *Aug. 2022 - Feb. 2024*
- Software Engineer, Machine Learning Intern   *Summer 2021*

Tencent, AI Lab

- Research Intern   *Summer 2019*

Multimodal LLM & Reasoning

- Led development of a multimodal LLM for video understanding and reasoning (temporal localization, intent detection, structured extraction).
- Built large-scale post-training pipelines with human-annotated and synthetic data (millions of samples), improving model performance by +15% and surpassing strong Gemini 3.0 on vertical applications.
- Designed reasoning-oriented tasks (temporal, causal, intent-based) for multimodal systems.
- Applied post-training techniques (SFT, RL-based optimization) to improve reasoning and temporal understanding in video models.

Alignment, Reward Modeling & Evaluation

- Developed scalable evaluation systems using AI-judge models, reducing evaluation latency (days → hours) and cost ($> 99\%$ reduction).
- Built human-in-the-loop data pipelines and preference datasets for aligning multimodal models with user intent.
- Worked on preference optimization methods (e.g., DPO / RL-style training) for improving alignment and generation quality.

Generative Models (Diffusion / Video)

- Worked on diffusion-based image and video generation models, improving quality, controllability, and efficiency.
- Contributed to multimodal transformer architectures for generation and editing.

PUBLICATIONS

- **OneStory: Coherent Multi-Shot Video Generation with Adaptive Memory**.
  Zhaochong An, Menglin Jia, Haonan Qiu, Zijian Zhou, Xiaoke Huang, Zhiheng Liu, Weiming Ren, Kumara Kahatapitiya, Ding Liu, Sen He, Chenyang Zhang, Tao Xiang, Fanny Yang, Serge Belongie, **Tian Xie**.
  *The Conference on Computer Vision and Pattern Recognition (**CVPR**), 2026.*

- **Mixture of States: Routing Token-Level Dynamics for Multimodal Generation**.
  Haozhe Liu*, Ding Liu*, Mingchen Zhuge*, Zijian Zhou*, **Tian Xie***, Sen He, Yukang Yang, Shuming Liu, Yuren Cong, Jiadong Guo, Hongyu Xu, Ke Xu, Kam-Woh Ng, Juan C. Pérez, Juan-ManuelPérez-Rúa, Tao Xiang, Wei Liu, Shikun Liu, Jürgen Schmidhuber (*core conributor).
  *The Conference on Computer Vision and Pattern Recognition (**CVPR**), 2026.*

- **Scaling Zero-Shot Reference-to-Video Generation**.
  Zijian Zhou, Shikun Liu, Haozhe Liu, Haonan Qiu, Zhaochong An, Weiming Ren, Zhiheng Liu, Xiaoke Huang, Kam Woh Ng, **Tian Xie**, Xiao Han, Yuren Cong, Hang Li, Chuyan Zhu, Aditya Patel, Tao Xiang, Sen He.
  *The Conference on Computer Vision and Pattern Recognition (**CVPR**), 2026.*

- **Adaptive Caching for Faster Video Generation with Diffusion Transformers**.
  Kumara Kahatapitiya, Haozhe Liu, Sen He, Ding Liu, Menglin Jia, Michael S. Ryoo, **Tian Xie**.
  *International Conference on Computer Vision (**ICCV**), 2025.*

- **Learning Flow Fields in Attention for Controllable Person Image Generation**.
  Zijian Zhou, Shikun Liu, Xiao Han, Haozhe Liu, Kam Woh Ng, **Tian Xie**, Yuren Cong, Hang Li, Mengmeng Xu, Juan-Manuel Pérez-Rúa, Aditya Patel, Tao Xiang, Miaojing Shi, Sen He.
  *The Conference on Computer Vision and Pattern Recognition (**CVPR**), 2025.*

- **Solving General Noisy Inverse Problem via Posterior Sampling: A Policy Gradient Viewpoint**.
  Haoyue Tang, **Tian Xie**, Aosong Feng, Hanyu Wang, Chenyang Zhang, Yang Bai.
  *International Conference on Artificial Intelligence and Statistics (**AISTATS**), 2024.*

- **Solving Noisy Inverse Problems via Posterior Sampling: A Policy Gradient View-Point**.
  Haoyue Tang, **Tian Xie**, Aosong Feng, Hanyu Wang, Chenyang Zhang, Yang Bai.
  NeurIPS workshop on Deep Learning and Differential Equations (DLDE) III, 2023.

- **Label Efficient Regularization and Propagation for Graph Node Classification**.
  Tian Xie, Rajgopal Kannan, C.-C. Jay Kuo.
  *IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2023.*

- **GraphHop: An Enhanced Label Propagation Method for Node Classification**.
  Tian Xie, Bin Wang, C.-C. Jay Kuo.
  *IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), 2022.*

- **L-BGNN: Layer-Wise Training Bipartite Graph Neural Embedding**.
  Tian Xie, Chaoyang He, Xiang Ren, Cyrus Shahbi, C.-C. Jay Kuo.
  *IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), 2022.*

EDUCATION

University of Southern California — Los Angeles, USA
Ph.D. in Electrical and Computer Engineering — *Aug. 2017 - Aug 2022*
Advisor: Prof. C.-C. Jay Kuo

University of Southern California — Los Angeles, USA
M.S. in Computer Science — *Aug. 2017 - Aug 2020*

Fudan University — Shanghai, China
B.S. in Physics — *Sept. 2013 - Jul. 2017*

ACADEMIC SERVICES

- Journals reviewer: *IEEE TPAMI, IEEE TNNLS, IEEE TKDE, IEEE TNSE, APSIPA.*
- Conference reviewer: *IJCNN (2022, 2025), ICIP (2022, 2023, 2024).*

TALKS

- Graph Learning for Bipartite Networks — *Jul. 2022*
  Taboola R&D — *Virtual*