Xinyang Liu

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RESEARCH

My primary research goal is to solve real-world problems through advanced Generative AI systems capable of understanding, generating and reasoning with high-dimensional data across diverse modalities. With this goal in mind, I am currently working on **Generative Modeling**, including its theoretical exploration and various applications in data generation and multimodal learning

Specifically, I am working or highly interested in the following subjects:

○ **2D & 3D Generation**
○ **Scalable and Powerful Generative Models**
○ **Robot Learning, Planning and Agent Learning upon Generative AI**
○ **Alignment of Large Foundation Models (LLMs, VLMs)**
○ **Multimodal Learning**
○ Statistical learning and inference
○ Graph representation learning
○ Any interesting machine learning theory that can contribute to solving real-world problems

EDUCATION

The University of Texas at Austin   Austin, United States
Ph.D., Statistics and Data Sciences   Aug 2025 -
Advisor: Mingyuan Zhou

Xidian University   Xi'an, China
M.S., Information and Telecommunication Engineering   Sep 2021 - Jul 2024
Advisor: Bo Chen

Xidian University   Xi'an, China
B.S., Electronic Information Engineering   Sep 2017 - Jul 2021

EXPERIENCE

Purdue University
Research Intern, RZ-Lab, Department of Computer Science   May 2024 - present
Advisor: Ruqi Zhang

The University of Texas at Austin
Research Intern, McCombs School of Business   Oct 2022 - present
Advisor: Mingyuan Zhou

PUBLICATIONS (* denotes equal contribution)

Preprint

[1] Xinyue Hu, Zhibin Duan, **Xinyang Liu**, Yuxin Li, Bo Chen, Mingyuan Zhou
Disentangled Generative Graph Representation Learning
ArXiv 2408.13471 (**2024**)

[2] Chaojie Wang*, **Xinyang Liu***, Dongsheng Wang, Hao Zhang, Bo Chen, Mingyuan Zhou
Scalable Weibull Graph Attention Autoencoder for Modeling Document Relational Networks
ArXiv 2410.09696 **(2024)**

Conference and Journal Publications

[3] **Xinyang Liu***, Hengrong Du*, Wei Deng, Ruqi Zhang
Optimal Stochastic Trace Estimation in Generative Modeling
The 28th International Conference on Artificial Intelligence and Statistics, **(AISTATS 2025)**

[4] **Xinyang Liu***, Yilin He*, Bo Chen and Mingyuan Zhou
Advancing Graph Generation through Beta Diffusion
The Thirteenth International Conference on Learning Representations, **(ICLR 2025)**

[5] **Xinyang Liu***, Dongsheng Wang*, Bowei, Fang, Miaoge Li, Zhibin Duan, Yishi Xu, Bo Chen and Mingyuan Zhou
Patch-Prompt Aligned Bayesian Prompt Tuning for Vision-Language Models
Proceedings of the 40th Conference on Uncertainty in Artificial Intelligence, **(UAI 2024)**

[6] Yishi Xu, Jianqiao Sun, Yudi Su, **Xinyang Liu**, Zhibin Duan, Bo Chen and Mingyuan Zhou
Context-guided Embedding Adaptation for Effective Topic Modeling in Low-Resource Regimes
Thirty-seventh Conference on Neural Information Processing Systems, **(NeurIPS 2023)**

[7] Dongsheng Wang, Miaoge Li, **Xinyang Liu**, MingSheng Xu, Bo Chen and Hanwang Zhang
Tuning Multi-mode Token-level Prompt Alignment across Modalities
Thirty-seventh Conference on Neural Information Processing Systems, **(NeurIPS 2023)**

[8] Miaoge Li*, Dongsheng Wang*, **Xinyang Liu**, Zequn Zeng, Ruiying Lu, Bo Chen and Mingyuan Zhou
PatchCT: Aligning Patch Set and Label Set with Conditional Transport for Multi-Label Image Classification
The IEEE/CVF International Conference on Computer Vision, **(ICCV 2023)**

[9] Zhibin Duan*, **Xinyang Liu***, Yudi Su, Yishi Xu, Bo Chen and Mingyuan Zhou
Bayesian Progressive Deep Topic Model with Knowledge Informed Textual Data Coarsening Process
In the 40th International Conference on Machine Learning, **(ICML 2023)**

OPEN SOURCE PROJECT

- **PyDPM** (**core contributor, 175 stars**)   Sep 2022 - Feb 2024
  A python library focuses on constructing **D**eep **P**robabilistic **M**odels (**DPMs**).

AWARDS AND HONORS

- **The University-Level First-Class Graduate Scholarship**, Xidian University   2023
- **The University-Level Second-Class Graduate Scholarship**, Xidian University   2023
- **Bronze Medal**, The 2019 ICPC Asia-East Continent Final, Xi'an   2019
- **Bronze Medal**, The 2019 ICPC Asia Regional Contest, Yinchuan Site   2019
- **Silver Medal**, The 2019 ICPC China Shaanxi Provincial Programming Contest   2019
- **1st Prize (9/325)**, The 17th Programming Contest of Xidian University   2019

PROFESSIONAL SERVICES

- **Conference Reviewer:** NeurIPS (2024), ICML (2024, 2025), CVPR (2024), ICLR (2025), AISTATS (2025)