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 working on **Generative Modeling**, including its theoretical exploration and various applications in data generation and multimodal learning

I am currently exploring all dimensions of **diffusion Large Language Models (dLLMs)**, including foundation-model design, inference acceleration, and post-training for downstream tasks.

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] Haoyang Zheng, Xinyang Liu, Xiangrui Kong, Nan Jiang, Zheyuan Hu, Weijian Luo, Wei Deng, and Guang Lin
Ultra-Fast Language Generation via Discrete Diffusion Divergence Instruct
ArXiv 2509.25035 **(2025)**

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

[3] Chaojie Wang*, **Xinyang Liu***, Dongsheng Wang, Hao Zhang, Bo Chen, and Mingyuan Zhou
Scalable Weibull Graph Attention Autoencoder for Modeling Document Relational Networks

ArXiv 2410.09696 **(2024)**

Conference and Journal Publications

[4] Tiansheng Wen*, Yifei Wang*, Zequn Zeng, Zhong Peng, Yudi Su, **Xinyang Liu**, Bo Chen, Hongwei Liu, Stefanie Jegelka, and Chenyu You
Beyond Matryoshka: Revisiting Sparse Coding for Adaptive Representation
Forty-Second International Conference on Machine Learning, **(ICML 2025)**

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

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

[7] **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)**

[8] 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)**

[9] 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)**

[10] 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)**

[11] 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, 2025), ICLR (2025), AISTATS (2025), AAAI (2025)