

YICHI ZHANG

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EDUCATION

- Ph.D. in Electrical and Computer Engineering, University of Illinois Urbana-Champaign 2022-present
- B.Eng. in Electrical and Computer Engineering, Zhejiang University 2018-2022
- B.S. in Computer Engineering, University of Illinois Urbana-Champaign 2018-2022

PUBLICATION

- **Yichi Zhang**, Alexander G. Schwing, Zhizhen Zhao. Variational Masked Diffusion Models. Under review, 2025.
- **Yichi Zhang**, Yici Yan, Alexander G. Schwing, Zhizhen Zhao. Hierarchical Rectified Flow Matching with Mini-Batch Couplings. Under review, 2025.
- **Yichi Zhang**, Yici Yan, Alexander G. Schwing, Zhizhen Zhao. Towards Hierarchical Rectified Flow. International Conference on Learning Representations (ICLR), 2025.
- **Yichi Zhang***, Yici Yan*, Xiangming Meng, Zhizhen Zhao. FIG: Flow with Interpolant Guidance for Linear Inverse Problems. International Conference on Learning Representations (ICLR), 2025.
- Chuanyi Zhang*, Palash Sashittal*, Michael Xiang, **Yichi Zhang**, Ayesha Kazi, Mohammed El-Kebir. Accurate Identification of Transcription Regulatory Sequences and Genes in Coronaviruses. Molecular Biology and Evolution, 2022.

RESEARCH EXPERIENCE

Variational Masked Diffusion Models (Under review) UIUC

- Introduced a latent variable into masked diffusion to model inter-token correlations;
- Enabled multi-token parallel generation, achieving significantly higher efficiency and quality;
- Demonstrated strong performance gains on both low-dimensional synthetic, Sudoku, and text generation benchmarks.

Hierarchical Rectified Flow with Mini-Batch Couplings (Under review) UIUC

- Introduced mini-batch couplings that effectively reduced the complexity of the distribution to be learned;
- Achieved high-quality generation under low-NFE and even one-step sampling across synthetic and image datasets.

Towards Hierarchical Rectified Flow (ICLR 2025) UIUC

- Proposed Hierarchical Rectified Flow to overcome the non-crossing constraint in rectified flows, enabling intersecting trajectories;
- Innovated paired training and sampling algorithms that improve stability and efficiency;
- Demonstrated strong results on both low-dimensional synthetic and high-dimensional image benchmarks.

FIG: Flow with Interpolant Guidance for Linear Inverse Problems (ICLR 2025) UIUC

- Introduced FIG, a measurement-interpolant-guided flow for linear inverse problems;
- Optimized FIG to substantially reduce computation while preserving high reconstruction quality;
- Demonstrated significant gains over state-of-the-art algorithms on natural-image reconstruction benchmarks.

SERVICE

Conference Reviewer 2024-2026

- NeurIPS, ICLR

Teaching Assistant 2020-2025

University of Illinois at Urbana-Champaign

- ECE408 Applied Parallel Programming (2022), ECE449 Machine Learning (2023), ECE490 Introduction to Optimization (2024), ECE566 Computational Inference (2024), ECE598 Generative Modeling with Diffusion and Flow Matching Models (2025)

SKILLS

- **Programming & Tools:** Python, C/C++, PyTorch, NumPy, Git, LaTeX
- **Languages:** Chinese (native), English (fluent, TOEFL 109)