# YICHI ZHANG

Address: 207 N Gregory St, Urbana, IL 61801 | (+1) 2173051861 | Yichi5@illinois.edu

## 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**, 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

**Hierarchical Rectified Flow with Mini-Batch Couplings (Under review)**    **UIUC**
*Advisor: Prof. Alexander Schwing and Prof. Zhizhen Jane Zhao*

- Improved the hierarchical rectified flow model with mini-batch couplings
- Conducted extensive experiments on both low-dimensional synthetic datasets and high-dimensional image datasets, demonstrating superior generation quality, especially with low NFE

**Towards Hierarchical Rectified Flow (ICLR 2025)**    **UIUC**
*Advisor: Prof. Alexander Schwing and Prof. Zhizhen Jane Zhao*

- Developed a hierarchical Rectified Flow model, integrating multiple ordinary differential equations to capture complex data distributions effectively.
- Innovated a novel training and sampling method for flow-based models, improving performance and efficiency.
- Executed extensive experiments on both low-dimensional synthetic datasets and high-dimensional image datasets, demonstrating superior generation quality.

**FIG: Flow with Interpolant Guidance for Linear Inverse Problems (ICLR 2025)**    **UIUC**
*Advisor: Prof. Zhizhen Jane Zhao*

- Designed and implemented the FIG algorithm, incorporating measurement interpolants to efficiently guide reverse-time sampling in flow-based models for linear inverse problems.
- Developed a novel approach to tackle challenging image restoration tasks, improving the model's robustness against high noise levels and severe ill-posedness.
- Optimized the algorithm to significantly reduce computational costs while maintaining high reconstruction quality.
- Conducted extensive experiments on natural image datasets, demonstrating significant performance improvements over state-of-the-art algorithms in linear image reconstruction tasks.

## TEACHING EXPERIENCE

- Teaching Assistant for ECE120 Intro to Computing    2020
- Teaching Assistant for ECE408 Applied Parallel Programming    2022
- Teaching Assistant for CS446/ECE449 Machine Learning    2023
- Teaching Assistant for ECE490 Introduction to Optimization    2024
- Teaching Assistant for ECE566 Computational Inference and Learning    2024

## SKILLS

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