

Chang Liu

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EDUCATION

University of Illinois, Urbana-Champaign

Ph.D. in Computer Science

• Advisor: Svetlana Lazebnik

• Fellowship: Amazon AI PhD Fellowship

University of Illinois, Urbana-Champaign

Master of Engineering in Electrical and Computer Engineering

• GPA: 4.0 / 4.0

Sun Yat-sen University

Bachelor of Engineering in Electronic Information Science and Technology

Champaign, IL

Aug. 2025 – Present

Champaign, IL

Aug. 2023 – Dec. 2024

Guangzhou, China

Aug. 2019 – Jun. 2023

PUBLICATIONS

C. Liu, V. Shah, A. Cui, S. Lazebnik, “UnZipLoRA: Separating Content and Style from a Single Image”, *ICCV* 2025 Highlight

A. Cui, J. Mahajan, V. Shah, P. Gomathinayagam, C. Liu, S. Lazebnik, “Street TryOn: Learning In-the-Wild Virtual Try-On from Unpaired Person Images”, Best Paper at *CVFAD* Workshop, CVPR 2024, *WACV* 2025

C. Liu, D. Zhang, “A selective quantization approach for optimizing quantized inference engine”, *Proceedings of the 2023 11th International Conference on Information Systems and Computing Technology (ISCTech)*, March 2023.

RESEARCH

Image Generation and Editing Controlled by Multi-modal Low-level Guidance for Diffusion Models

Research Assistant at UIUC, supervised by Professor Svetlana Lazebnik

May 2025 – Present

- Adapted a transformer-based **modality prediction module** extracted from diffusion models, resulting in **state-of-the-art accuracy** for downstream computer vision tasks like depth, edge, and pose prediction.
- Implemented **multi-modal guided image generation**, achieving accurate controlled generation based on diverse low-level inputs (depth, edge, and pose references).
- Developing an **image editing pipeline** through low-level guidance modifications to support applications like interactive dragging and pose transfer.

UnZipLoRA: Separating Content and Style from a Single Image (ICCV 2025 Highlight)

Research Assistant at UIUC, supervised by Professor Svetlana Lazebnik

May 2024 – May 2025

- Designed a comprehensive strategy to effectively separate subject with style in **diffusion model**, enabling **flexible text-to-image generation** using either single-element or combining elements across multiple images.
- Invented a novel method to ensure robust **identity preservation** for both the extracted subject and style elements, leading to **highly personalized generation**.
- Validated the method through quantitative metrics and human evaluation across over 50 cases, demonstrating **superior performance (SOTA)** and preferred status over competitors by 75%.

PROJECTS

Zero-Shot Adaptation via Image Reference for Unified Diffusion Models

Python, PyTorch, Unified multi-modal models

Sep. 2025 – Present

- Demonstrated the ability of the base **unified multi-modal models** to execute a range of tasks **zero-shot**.
- Designing novel input methodologies to integrate reference information efficiently, aiming to optimize performance gains and control.

Image-to-prompt Synthesis for Improved Diffusion Model Performance

Python, PyTorch, Multi-modal

Feb. 2024 – May 2024

- Developed a fine-tuning method for image-to-prompt generation, allowing diffusion model reconstruct the original images more accurately.
- Created a dataset of prompt-synthetic image pairs by employing techniques such as prompt regeneration using LLMs and statistical analysis.
- Proposed a **multi-stage fine-tuning approach** for general caption model(BLIP2), utilizing strategic dataset selection and customized loss functions.

TECHNICAL SKILLS

Programming Languages: Python, C++, C, Shell, MATLAB, LaTeX, System Verilog, Verilog

Machine Learning Tools and Libraries: PyTorch, TensorRT, OpenCV, sklearn, Diffusers, Git, Linux, Wandb

Related Courses: Computer Vision, Deep Generative Models, Pattern Recognition, Artificial Intelligence