

Yixuan Ren

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Research Summary

My research focuses on generative modeling for image/video synthesis and editing. My work spans generative mechanisms including diffusion/flow matching and autoregressive models, as well as visual tokenizers such as VAEs and VQGANs. My long-term goal aims toward real-world generative systems across modalities for immersive and interactive proactive intelligence.

Education

- University of Maryland, College Park** 2026
Ph.D. in Computer Science, advised by Prof. Abhinav Shrivastava
- University of Maryland, College Park**
M.Sc. in Computer Science
- Tsinghua University** 2016
B.Eng. in Microelectronics / Electronic Engineering

Experience

- Research Scientist Intern, **Meta GenAI/MSL** 2025
- Mentored by Mannat Singh, Saketh Rambhatla, Andrew Brown, Arun Mallya
 - Worked on instructional image editing via direct flow matching
- Research Scientist Intern, **Adobe Research** 2023
- Mentored by Yang Zhou, Jimei Yang, Jing Shi, Difan Liu, Feng Liu
 - Worked on one-shot video motion customization of text-to-video diffusion
- Research Scientist Intern, **Adobe Research** 2022
- Mentored by Jing Shi, Zhifei Zhang, Yifei Fan, Zhe Lin
 - Worked on diffusion-based content-aware image color editing
- Research Intern, **ByteDance** 2021
- Mentored by Xiao Yang, Bingchen Liu, Yizhe Zhu
 - Worked on fast StyleGAN inversion for OOD images

Publications & Preprints

*Equal contribution †Project lead

Direct Evolution of Instructional Image Editing

Yixuan Ren, Mannat Singh[†], Saketh Rambhatla, Andrew Brown, Arun Mallya, Abhinav Shrivastava
Under Review 2026

NeRV-Diffusion: Diffuse Implicit Neural Representation for Video Synthesis

Yixuan Ren, Hanyu Wang, Hao Chen, Bo He, Abhinav Shrivastava
ICLR 2026 [Project Page] [arXiv]

SemTok: Semantic Tokenization from Vision Foundation Models via Dual Fusion

Zijie Diao, Lingyu Kong, Junke Wang[†], Yixuan Ren, Bo He, Yu-Gang Jiang, Zuxuan Wu
Under Review 2026

Timestep-Constrained One-Shot Video Motion Customization

Vatsal Baherwani^{*}, [Yixuan Ren](#)^{*†}, Abhinav Shrivastava
CVPR Workshop 2026 [Project Page] [arXiv]

All-in-One Conditioning for Text-to-Image Synthesis

Hirunima Jayasekara, Chuong Huynh[†], [Yixuan Ren](#)[†], Christabel Acquaye, Abhinav Shrivastava
ICPR 2026 [arXiv]

LARP: Tokenizing Videos with a Learned Autoregressive Generative Prior

Hanyu Wang, Saksham Suri, [Yixuan Ren](#), Hao Chen, Abhinav Shrivastava
ICLR 2025 Oral [Project Page] [arXiv]

Customize-A-Video: One-Shot Motion Customization of Text-to-Video Diffusion Models

[Yixuan Ren](#), Yang Zhou[†], Jimei Yang, Jing Shi, Difan Liu, Feng Liu, Mingi Kwon, Abhinav Shrivastava
ECCV 2024 [Project Page] [arXiv]

Content-Aware Image Color Editing with Auxiliary Color Restoration Tasks

[Yixuan Ren](#), Jing Shi[†], Zhifei Zhang[†], Yifei Fan, Zhe Lin, Bo He, Abhinav Shrivastava
WACV 2024 [PDF]

Towards Scalable Neural Representation for Diverse Videos

Bo He, Xitong Yang, Hanyu Wang, Zuxuan Wu, Hao Chen, Shuaiyi Huang, [Yixuan Ren](#), Ser-Nam Lim, Abhinav Shrivastava
CVPR 2023 [Project Page] [arXiv]

NeRV: Neural Representations for Videos

Hao Chen, Bo He, Hanyu Wang, [Yixuan Ren](#), Ser-Nam Lim, Abhinav Shrivastava
NeurIPS 2021 [Project Page] [arXiv]

StEP: Style-based Encoder Pretraining for Multimodal Image Synthesis

Moustafa Meshry, [Yixuan Ren](#), Ricardo Martin-Brualla, Larry S. Davis, Abhinav Shrivastava
CVPR 2021 [Project Page] [arXiv]

Academic Service

Reviewers: ICCV 2021-2025, CVPR[‡] 2022-2026, ECCV[‡] 2022-2024, NeurIPS 2023-2025, ICLR 2024-2026, ICML[‡] 2024-2026, AAAI 2024-2025

[‡] *Outstanding/Silver Reviewers: ECCV'24, CVPR'25, ICML'26*

Skills

Languages: Python, C/C++ , Cython, CUDA C/C++

Libraries: PyTorch, TensorFlow, Transformers, Diffusers, Accelerate, PEFT, WebDataset

Infra & Tools: Slurm, Docker/Apptainer, AWS, Bazel, Git LFS, WandB