

Xi Liu

Google Scholar | Homepage | xiliu8006@gmail.com

Address: 114 Spring Forest Drive, Central, SC, USA | Phone: (+01) 380-249-5112

EDUCATION

Clemson University, Ph.D. in Computer Science — Advisor: Siyu Huang	Jan. 2024 – Now
University of Copenhagen, M.S. in Computer Science — Advisor: Serge Belongie	Sept. 2021 – Jul. 2023
Jilin University, B.S. in Computer Science	Sept. 2014 – Jul. 2018

RESEARCH INTERESTS

Image as Code, 3D Vision, Generative Models, Vision-Language Models, Neural Rendering. Improve 3D reconstruction and scene understanding using generative priors; parsing visual representations into structured representations (SVG).

SELECTED PUBLICATIONS

1. **3DGS-Enhancer: Enhancing Unbounded 3D Gaussian Splatting with View-consistent 2D Diffusion Priors.** *NeurIPS 2024* (Spotlight). First author.
2. **Bézier Splatting for Fast and Differentiable Vector Graphics.** *NeurIPS 2025*. First author.
3. **HAD: Hallucination-Aware Diffusion Priors for 3D Reconstruction.** *CVPR 2026*. First author.
4. **Lang-SVG: Hierarchical Image Vectorization with Language Priors.** *NeurIPS 2026*. First author.
5. **Latent Radiance Fields with 3D-aware 2D Representations.** *ICLR 2025*. First co-author.
6. **Seeing or Knowing? Visual Context Sensitivity in Multimodal Large Language Models.** *ECCV 2026, UniWorld Workshop*.
7. **Efficient Post-Training for 3D-Consistent Video Generation via Optimal Transport Reward Balancing.** Under submission.. First author.
8. **Controlling Your Image via Simplified Vector Graphics.** arxiv. First co-author.

EXPERIENCE

Applied Scientist Intern (Central Machine Learning), Amazon • Injected 3D-awareness from geometry foundation models into video diffusion by Post-training (GRPO)	May. 2026 – Aug. 2026
Applied Scientist Intern (Just Walk Out), Amazon • Developed a generative-prior-based framework for 3D virtual store reconstruction. • Investigated hallucination artifacts introduced by generative priors and proposed mitigation strategies for reliable 3D reconstruction.	Jun. 2025 – Nov. 2025
Affiliated Researcher, Pioneer Center for AI (Advisor: Serge Belongie) • 3D deformable object reconstruction from monocular video. • Neural Radiance Field generation guided by generative models.	Aug. 2022 – Aug. 2023
Research Assistant, CPIL, CUHK (Advisor: Dahua Lin) • Supported OpenMMLab/MMDetection3D. • Reimplemented SOTA 3D point cloud detection algorithms and resolved community issues.	Jan. 2021 – Aug. 2021
Lidar Perception R&D Engineer, Momena • Developed real-time LiDAR object detection networks with <30ms latency. • Combined rule-based and deep-learning detection to boost recall. • Deployed PyTorch models on autonomous vehicles; converted models to TorchScript in C++.	Sept. 2018 – Mar. 2020

PROFESSIONAL SERVICE

- **Conference Reviewer:** NeurIPS (2024, 2025), ICLR (2025, 2026, 2027), ICML (2025, 2026), CVPR (2026).
- **Journal Reviewer:** TVCG (2025), SIGGRAPH (2026)

SKILLS

- **Tools:** PyTorch / Libtorch, ROS, PCL
- **Languages:** C / C++, Python, CUDA, Haskell, Erlang