Ziyang Xie

Personal Page | Google Scholar | Github Page | Email | +1 217-974-0151

EDUCATION

University of California, Los Angeles — Los Angeles, CA
Computer Science PhD Student at Bolei Zhou's group — *Sep. 2025*

University of Illinois Urbana-Champaign — Champaign, IL
Master of Science in Computer Science (MSCS) | GPA: 4.0/4.0 — *Aug. 2023 – May 2025*

Fudan Univeristy — Shanghai, China
Bachelor of Science in Computer Science | GPA: 3.54/4.0 — *Sep. 2019 – June 2023*

PROJECTS

WorldGen: Generate Any 3D Scene in Seconds

WorldGen is a model that can generate interactive 3D scenes from text and image inputs in seconds.

- Reached Top 10 on Hacker News with more than 800 GitHub stars. First model that turns text or images into full 3D scenes in seconds, with support for interaction, realtime rendering, and loop-closure scene generation.
- Adopted by major scene generation works and projects, including Hunyuan-World (Tencent), Matrix 3D (Skywork-AI), and DiT360 (Insta360).

PUBLICATIONS

Vid2Sim: Realistic and Interactive Simulation from Video for Urban Navigation — CVPR, 2025
Ziyang Xie, Zhizheng Liu, Zhenghao Peng, Wayne Wu, Bolei Zhou

MV-Map: Offboard HD-Map Generation with Multi-view Consistency — ICCV, 2023
Ziyang Xie*, Ziqi Pang*, Yu-Xiong Wang

S-NeRF: Neural Radiance Fields for Street Views — ICLR, 2023
Ziyang Xie*, Junge Zhang*, Wenye Li, Feihu Zhang, Li Zhang

Frozen transformers in language models are effective visual encoder layers — ICLR, 2024 (Spotlight*)
Ziqi Pang, Ziyang Xie*, Yunze Man*, Yu-Xiong Wang

S-NeRF++: Autonomous Driving Simulation via Neural Reconstruction and Generation — TPAMI 2025
Yurui Chen, Junge Zhang, Ziyang Xie, Wenye Li, Feihu Zhang, Jiachen Lu, Li Zhang

Brain3D: Generating 3D Objects from fMRI — IJCV 2025
Yuankun Yang, Li Zhang, Ziyang Xie, Zhiyuan Yuan, Jianfeng Feng, Xiatian Zhu, Yu-Gang Jiang

INDUSTRY EXPERIENCE

Manifolds AI, Co-Founder, CTO — Sep. 2023 - Oct. 2025

- Led the R&D team to build one of the first 3D controllable image and video generation pipeline. That combine traditional graphics rendering pipeline with generative models to ensure both controllable and realistic rendering.
- Built Product 'KleinStudio' that user could seamlessly integrate any of their product into the 3D scene with realistic rendering. Grow to > 100 business and designer customers in China.
- Full-stack development across frontend, backend, and core algorithms. Built an interactive web three.js viewer, responsive React interface, Tailwind CSS layout, and frontend design. Developed backend with FastAPI, Celery tasks, and k8s GPU elastic expansion.
- Developed the core method for 3D grounded image and video generation, allowing user to fully control the insert location and orientation of their products and ensure texture and geometry unchanged.

SenseTime Autonomous Driving Research Intern — Feb. 2022 - July. 2022

- Led cutting-edge research applying Neural Radiance Fields for self-driving simulation, enabling development of prototype that enhanced 3D object detection.
- Designed and optimized a multi-modality 3D object detection algorithm combining LiDAR point clouds and RGB images, improving detection precision by 20%.

Selected Research Experience

University of California, Los Angeles   May. 2024 – Nov. 2024

Vid2Sim: Realistic and Interactive Simulation from Video for Urban Navigation   *Advisor: Prof. Bolei Zhou*

- Developed a comprehensive pipeline that can convert casual monocular videos into photo-realistic and physical interactive simulation for RL agents training.
- Conducted both simulation and real-world experiments to show that Vid2Sim can significantly reduce the Sim-to-Real gap and improve the success rate of urban navigation in the real world by 68.3% compared with agents trained with prior simulation methods.

University of Illinois Urbana-Champaign   Sep. 2022 – July. 2023

MV-Map: Offboard HD-Map Generation with Multi-view Consistency   *Advisor: Prof. Yuxiong Wang*

- Proposed a novel uncertainty-based offboard HD-Map generation pipeline that enhances HD-Map generation quality by ensuring multi-view consistency with neural reconstruction.
- Demonstrated strong compatibility with any online HD-Map generation method and can work in a plug-and-play manner to achieve consistent performance gain over 15%.

Fudan Univeristy   Jan. 2022 – Aug 2022

S-NeRF: Neural Radiance Fields for Street Views   *Advisor: Prof. Li Zhang*

- Proposed the first pipeline to reconstruct high-quality unbounded self-driving scenes and foreground moving vehicles with neural radiance field on public self-driving datasets.
- Developed a robust method for high-quality scene reconstruction with confidence-based dense depth supervision and achieved 21% and 45% PSNR gain for the background static scene and foreground moving vehicles rendering.

Skills

Programming Languages: Python, C++, C, C#, Golang

Machine Learning: PyTorch, Huggingface, Transformers, Diffusers, Scikit-Learn, Stable-Baselines3

Computer Vision: SfM, Gaussian Splatting, NeRF, Differentiable Rendering, Three.js, Open3D, Pytorch3D

Simulation: NVIDIA Isaac Sim, Blender, Unity, OpenGL