Jingwei Xu

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GitHub: https://github.com/DavidXu-JJ
Personal Page: https://davidxu-jj.github.io

Education

ShanghaiTech University, Master of Computer Science — Sep. 2023 – Jun. 2026 expected
Advisor: Prof. Shenghua Gao

Shanghai University, Bachelor of Computer Science, Top 3% scholarship — Sep. 2019 – Jun. 2023

Research Interest

Computer Vision: Radiance Field, Image-based 3D Reconstruction
Computer Graphics: Differential Geometry, Volume Rendering

Publications

(* denotes equal contributions, † denotes corresponding authors)

1. CAD-MLLM: Unifying Multimodality-Conditioned CAD Generation With MLLM — arXiv 2024
   Jingwei Xu*, Chenyu Wang*, Zibo Zhao, Wen Liu, Yi Ma, Shenghua Gao† — [project page] [arXiv]
   Keywords: CAD, Multimodal Large Language Models, Multimodality Data
2. 3D StreetUnveiler with Semantic-Aware 2DGS - a simple baseline — ICLR 2025
   Jingwei Xu, Yikai Wang, Yiqun Zhao, Yanwei Fu, Shenghua Gao† — [project page] [arXiv]
   Keywords: Empty Street Reconstruction, 3D Inpainting
3. DebSDF: Delving into the Details and Bias of Neural Indoor Scene Reconstruction — TPAMI 2024
   Yuting Xiao*, **Jingwei Xu***, Zehao Yu, Shenghua Gao† — [project page] [arXiv]
   Keywords: Multi-view Reconstruction, Uncertainty Learning, Differential Geometry

Open Source Project

GPU optimized Poisson Reconstruction — Jun. 2022 – Aug. 2022
CUDA,C++ — Personal Project
Specific tasks:

- Use the conjugate gradient solver to get the least squares solution for the Laplacian over the octree. Finally extract the surface through Marching Cubes.
- Implement the parallel octree building on GPU and parallelly extract the surface with reference to pseudocode, which doesn't have open source implementation before. $\times 40$ efficiency improvement is achieved on NVIDIA RTX 2050.

Project repository and demo: https://github.com/DavidXu-JJ/PoissonRecon_GPU

Honors and Awards

Silver Medal, Chinese Collegiate Programming Contest(CCPC) Guangzhou Station — Nov. 2021
Bronze Medal, International Collegiate Programming Contest(ICPC) Shenyang Station — Nov. 2021
Top-tier 3% scholarship, Shanghai University
Outstanding Bachelor Graduate of Shanghai University

Skills

- Programming Tools: C, C++, CUDA, CMake, Python, PyTorch
- Development Tools: Git, SSH, Docker, Singularity, Vim
- Platform: Linux = macOS > Windows, familiar with Linux/Unix

SERVICES

Teaching Assistant: ShanghaiTech CS172 (2023 Fall)
Conference Reviewer: ICLR 2025
Journal Reviewer: TMM