

YILIN LIU

Research Scientist ◇ AI Lab@Autodesk Research
whatsevenlyl@gmail.com

RESEARCH INTERESTS

My research focuses on CAD reconstruction and generation, learning-based 3D modeling and path planning for MVS reconstruction.

PUBLICATIONS

- HoLa: B-Rep Generation using a Holistic Latent Representation.
Yilin Liu, Duoteng Xu, Xingyao Yu, Xiang Xu, Daniel Cohen-or, Hao Zhang, Hui Huang.
ACM Trans. Graph (Proceedings of SIGGRAPH). 2025.
- CLR-Wire: Towards Continuous Latent Representations for 3D Curve Wireframe Generation.
Xueqi Ma, **Yilin Liu**, Tianlong Gao, Qirui Huang, Hui Huang.
Proceedings of SIGGRAPH. 2025.
- Generating 3D House Wireframes with Semantics.
Xueqi Ma, **Yilin Liu**, Wenjun Zhou, Ruowei Wang, Hui Huang.
European Conference on Computer Vision. 2024.
- Split-and-Fit: Learning B-Reps via Structure-Aware Voronoi Partitioning.
Yilin Liu, Jiale Chen, Shanshan Pan, Daniel Cohen-Or, Hao Zhang, and Hui Huang.
ACM Trans. Graph (Proceedings of SIGGRAPH). 2024.
- Learning Reconstructability for Drone Aerial Path Planning.
Yilin Liu, Liqiang Lin, Yue Hu, Ke Xie, Chi-Wing Fu, Hao Zhang, and Hui Huang.
ACM Trans. Graph (Proceedings of SIGGRAPH ASIA). 2022.
- Aerial Path Planning for Online Real-time Exploration and Offline High-quality Reconstruction of Large-scale Urban Scenes.
Yilin Liu, Ruiqi Cui, Ke Xie, Minglun Gong, and Hui Huang.
ACM Trans. Graph (Proceedings of SIGGRAPH ASIA). 2021.
- Capturing, Reconstructing, and Simulating: the UrbanScene3D Dataset.
Liqiang Lin, **Yilin Liu**, Yue Hu, Xingguang Yan, Ke Xie, and Hui Huang
European Conference on Computer Vision. 2022.
- UrbanScene3D: A Large Scale Urban Scene Dataset and Simulator.
Yilin Liu, Fuyou Xue, and Hui Huang.
Arxiv. 2021.
- VGF-Net: Visual-Geometric Fusion Learning for Simultaneous Drone Navigation and Height Mapping.
Yilin Liu, Ke Xie, and Hui Huang. 2021.
Graph. Model. 2021.
- Offsite Aerial Path Planning for Efficient Urban Scene Reconstruction.
Xiaohui Zhou, Ke Xie, Kai Huang, **Yilin Liu**, Yang Zhou, Minglun Gong, and Hui Huang.
ACM Trans. Graph (Proceedings of SIGGRAPH ASIA). 2020.

EDUCATION

Simon Fraser University

2022 - Present

Ph.D. in Computer Science

Thesis supervisor: Prof. Hao (Richard) Zhang

Shenzhen University

2019 - 2022

M.S. in Computer Science

Thesis title: “Real-time Modeling and Image Collection for Urban Scene Reconstruction”

Thesis supervisor: Prof. Hui Huang

Sichuan University

2015 - 2019

B.E. in Software Engineering

Thesis title: “Offline 3D Urban Reconstruction based on Aerial Photography”

Thesis supervisor: Prof. Hui Huang and Dr. Wanzhong Song

EMPLOYMENT

Autodesk Research

2025 - Present

AI Research Scientist

CAD reconstruction and generation

HONORS AND AWARDS

- **Ph.D. Research Scholarship**, SFU *2023*
- **Graduate Dean’s Entrance Scholarship**, SFU *2022*
- **Graphic Open Source Dataset Award**, CCF *2021*
- **National Scholarship**, top 2% *2020*
- **The First Prize Scholarship**, Shenzhen University *2020*
- **Outstanding Undergraduate Student**, Sichuan University *2019*
- **Outstanding Student Volunteer**, Junior Achievement China *2017*
- **The First Individual Scholarship**, Sichuan University *2016, 2017*

EXPERIENCE

Autodesk AI Lab

Jun. 2024 - Sep. 2024

Research Scientist Intern

London, UK

Make-A-BRep: Learning Discrete BRep Generation via Dual Continuous Fields

Supervised by Dr. Hooman Shayani

Visual Computing Research Center in Shenzhen University

Jun. 2022 - Jun. 2024

Visiting student

Shenzhen, China

Supervised by Prof. Hui Huang

National University of Singapore

Jul. 2018 - Aug. 2018

Visiting Student

Singapore

Summer school in Artificial Intelligence and Multimedia Computing

Supervised by Prof. Kelvin Sung

ThoughtWorks

Nov. 2017 - Jan. 2018

Teaching Assistant

Helped people without coding background to get started with software development

Junior Achievement

Mar. 2017 - May 2018

Volunteer Teacher

Part time

Helped primary school students to build their professional and financial cognition

PRESENTATION

Acquisition

Dec. 2022

Conference Talk, SIGGRAPH Asia 2022

Learning Reconstructability for Drone Aerial Path Planning

Scene Synthesis and Navigation

Dec. 2021

Conference Talk, SIGGRAPH Asia 2021

Aerial path planning for online real-time exploration and offline high-quality reconstruction of large-scale urban scenes

Visual Localization and Navigation

Apr. 2021

Conference Talk, CVM 2021

VGF-Net: Visual-Geometric Fusion Learning for Simultaneous Drone Navigation and Height Mapping

Scene Reconstruction and Navigation in Complex Urban Scenes

Jun. 2021

Invited Talk, for Dr. Min Lu's course "Machine Learning"

School of Architecture & Urban Planning, Shenzhen University

SERVICE

Reviewer in SIGGRAPH, SIGGRAPH Asia, ACM Transaction on Graphics, Eurographics