

YILIN LIU

Ph.D. student ◇ School of Computing Science, Simon Fraser University
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RESEARCH INTERESTS

I am interested in Computer Graphics, Computer Vision, and Robotics, especially neural structural reconstruction and generation for CAD objects from different data sources.

PUBLICATIONS

- 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

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

- 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 Asia, Eurographics, ACM Transaction on Graphics