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