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 in neural structural reconstruction from different data sources (e.g. images, point clouds, distance fields). I am also interested in developing data acquisition methods for high-quality 3D reconstruction.

PUBLICATIONS

- 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.
  Under review. 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.
  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

- **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*

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

EXPERIENCE

Summer Workshop in National University of Singapore *Jul. 2018 - Aug. 2018*
Visiting Student
Involved in the topics in Artificial Intelligence and Multimedia Computing
Supervised by Prof. Kelvin Sung

ThoughtWorks *Nov. 2017 - Jan. 2018*
Teaching Assistant
Helped people without code 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