Zhuodong Li

Education

2023 - 2026 **M.S. in Computer Graphics** University of Chinese Academy of Sciences

2019 - 2023 **B.S. in Digital Media Technology** Shandong University

Publications

Li, Zhuodong, Fei Hou, Wencheng Wang, Xuequan Lu, and Ying He (July 2025). "A Divide-and-Conquer Approach for Global Orientation of Non-Watertight Scene-Level Point Clouds Using 0-1 Integer Optimization". In: *ACM Trans. Graph.* 44.4. ISSN: 0730-0301. DOI: 10.1145/3730923. URL: https://doi.org/10.1145/3730923.

Research Experience

Scene-level Point Cloud Orientation July 2023 – January 2025

Proposed a divide-and-conquer framework for orienting large-scale scene point clouds

- Partitioned the input cloud into patches and refined normals within each patch using propagation and iterative Poisson reconstruction
- Formulated a Boolean programming model based on the principle of visible surface consistency to achieve global orientation consistency
- Achieved significant accuracy improvements over state-of-the-art methods under varying sparsity and noise levels on ScanNet and SceneNN

Neural-based Method for Non-watertight Point Cloud Orientation March 2025 – Current

- Leverage transformers to encode point clouds and derived geometric features
- Decoded fused features to directly predict reliable normal vectors for non-watertight point clouds

Mesh Orientation Consistency Determination August 2025 – Current

Developed a neural network to determine orientation consistency between two spatially adjacent triangular surfaces

- Render surface pairs from multiple viewpoints and extracted features using a convolutional neural network
- Aggregated features with a transformer to robustly assess orientation consistency across surface patches

Awards & Honors

2024 **Merit Student**, University of Chinese Academy of Sciences

2023 **First-Class Academic Scholarship**, University of Chinese Academy of Sciences

2021 **First Prize**, National College Student Mathematical Contest in Modeling (Shandong Province)

2021 **Special Talent Scholarship**, Shandong University

2020 **Special Talent Scholarship**, Shandong University

Strengths

- Strong passion for research with a clear commitment to continue in academia
- Solid coding and implementation skills in c++,python.
- No graduation pressure at present, able to join research groups ahead of schedule