ZHIQI LI Ph.D.

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EDUCATION

Joint Program of Zhejiang University & Westlake University

Ph.D. in Computer Science and Technology   2022 - 2027 *(expected)*
- Advisor: Prof. Peidong Liu
- Research area: 3D Content Generation, Feed-forward 3D Reconstruction

School of Life Sciences and Biotechnology, Shanghai Jiao Tong University

B.S. in Bioinformatics and Biostatistics   2018 - 2022
- GPA: 3.34/4.00

PUBLICATIONS

1. **Zhiqi Li***, Yiming Chen*, Peidong Liu. DreamMesh4D: Video-to-4D Generation with . Sparse-Controlled Gaussian-Mesh Hybrid Representation. In *NeurIPS 2024*.

   TL;DR: A novel video-to-4D generation framework, which generates dynamic mesh objects with a static-to-dynamic optimization pipeline. Firstly a static mesh is generated through an off-the-shelf 3D generation method. Then the deformation of the mesh is optimized to follow a novel geometric skinning algorithm.

2. **Zhiqi Li**, Yiming Chen, Lingzhe Zhao, Peidong Liu. Controllable Text-to-3D Generation via Surface-Aligned Gaussian Splatting. In *3DV 2025*.

   TL;DR: To tackle the controllable text-to-3D generation task, we first propose a multi-view ControlNet, MVControl, to modulate the sampling procedure of a pretrained multi-view diffusion model. Then we introduce an efficient multistage 3D generation pipeline grounded on a mesh-Gaussian hybrid representation, with the aid of our pretrained MVControl module.

3. Dongxu Wei, **Zhiqi Li**, and Peidong Liu. Omni-Scene: Omni-Gaussian Representation for Ego-Centric Sparse-View Scene Reconstruction. In *CVPR 2025*.

   TL;DR: A novel 3D Gaussians-based representation and a tailored transformer model for feed-forward ego-centric scene reconstruction in autonomous driving scenario.

4. **Zhiqi Li**, Chengrui Dong, Yiming Chen, Zhangchi Huang, Peidong Liu. VicaSplat: A Single Run is All You Need for 3D Gaussian Splatting and Camera Estimation from Unposed Video Frames. In *ArXiv 2025*.

   TL;DR: We present a tailored transformer model for joint 3D Gaussians reconstruction and camera pose estimation from a sequence of unposed video frames. The model is trained with mainly photometric loss and a novel camera regression loss, following an efficient training strategy.

5. **Zhiqi Li**, Wenhuan Li, Tengfei Wang, Zhenwei Wang, Junta Wu, Haoyuan Wang, Yunhan Yang, Zehuan Huang, Yang Li, Peidong Liu, Chunchao Guo. MoCA: Mixture-of-Components Attention for Scalable Compositional 3D Generation. *Under review*.

   TL;DR: We propose a novel attention mechanism to handle inter-component dependencies for compositional 3D generation. We scales the maximum number of components by $2\times$ compared to prior works, enabling efficient modeling of complex part-composed objects and object-composed scenes.

INTERNSHIPS

Research Intern, Tencent Hunyuan. | Shenzhen, China   2025.04 - 2025.11 *(expected)*
- Contributed to development for the team's world model project.
- Independently led a research project on compositional 3D generation, with results submitted to ICLR 2026.

HONORS

- **Outstanding Graduate Prize**, Shanghai Jiao Tong University .   2022.06

ACADEMIC SERVICES

Reviewer for *ICLR, NeurIPS, 3DV*.

Teaching Assistant for course *Data Structure and Algorithm Design* of Westlake University.