Da Li

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EDUCATION

Ph.D., Computer Science, King Abdullah University of Science and Technology (KAUST)   2025–Present
Thuwal, Saudi Arabia

M.S., Computer Science, King Abdullah University of Science and Technology (KAUST)   2023–2025
Thuwal, Saudi Arabia

B.S., Network Engineering, University of Electronic Science and Technology of China (UESTC)   2019–2023
Chengdu, China

RESEARCH SNAPSHOT

Ph.D. student in Computer Graphics and Computer Vision focusing on 3D Gaussian splatting and 3D reconstruction, with emphasis on GPU rendering systems. Experienced in custom CUDA kernels, hybrid rasterization–ray-tracing modules, and performance-aware implementations.

Gaussian Splatting & Neural Rendering — clipping, hybrid rasterizer–ray-tracer pipelines, reconstruction.
Strand-level Hair Reconstruction — monocular video, implicit–explicit representations.
GPU Parallel Computing & Rendering — kernel design, memory layout, scalable GPU algorithms.

PUBLICATIONS

1. **Li, D.**, Jia, D., Rajeh, Y., Engel, D., & Viola, I. **RaRa Clipper: A Clipper for Gaussian Splatting Based on Ray Tracer and Rasterizer.** SIGGRAPH Asia 2025 Conference Papers. ⸨Published⸩

   Contribution: Hybrid rasterizer–ray-tracer clipping module integrated into Gaussian splatting renderers.

2. **Li, D.**, Jia, D., Hadwiger, M., & Viola, I. **SkinningGS: Editable Dynamic Human Scene Reconstruction Using Gaussian Splatting Based on a Skinning Model.** arXiv 2506.21632. ⸨arXiv⸩

   Contribution: Dynamic Gaussian representation with skinning-driven deformation and full training pipeline.

3. **Li, D.**, Engel, D., Luo, D., & Viola, I. **EfficientMonoHair: Fast Strand-Level Reconstruction from Monocular Video via Multi-View Direction Fusion.** ⸨Under Review⸩

   Contribution: Multi-view direction fusion modules with optimized reconstruction pipeline.

PROJECTS

Efficient and Visually Consistent Gaussian Splitting (EVS) Reproduction ⸨CUDA⸩ ⸨3DGS⸩   Dec 2025 – Jan 2026

- Reproduced EVS algorithm for high-quality Gaussian splatting.

- Implemented adaptive splitting CUDA kernels and visibility-aware rasterization.

- Designed modular pipeline for multi-pass strategies.

DDVR Reproduction with PyCUDA ⸨CUDA⸩ ⸨DDVR⸩   Feb 2025 – May 2025

- Reimplemented differentiable volume rendering pipeline.

- Implemented ray marching and backward passes.

- Built validation and profiling harness.

GPU-based Physical Simulation `CUDA` `OpenGL`   Aug 2024 – Dec 2024

- Built CUDA particle simulation with collision handling.

- Integrated OpenGL viewer and optimized CPU–GPU synchronization.

Ray Tracing and Rasterization Pipeline `C++`   Aug 2023 – Dec 2023

- Implemented CPU rasterization and ray tracing system.

- Built modular architecture with shading and reflection.

VolWeb: WebGPU-based Tomography Reconstruction `WebGPU`   Sep 2022 – May 2023

- Ported SART tomography to WebGPU compute shaders.

- Optimized GPU memory layout and workgroup scheduling.

Teaching Experience

Teaching Assistant, Machine Learning & Computer Graphics   2024–2025

- Discussion sessions, labs, grading.

Awards & Honors

Sichuan Province Outstanding Graduate	2023	Intel Cup National First Prize	2022
Chinese National Scholarship	2022	National Embedded Competition Second Prize	2021

Service

Reviewer, IEEE Transactions on Visualization and Computer Graphics (TVCG)

Skills

Programming: Python, C/C++, CUDA
Systems/Tools: Linux, Git, LaTeX, OpenGL, WebGPU