

# SHENG-HSIANG HUNG

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## Work Experience

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**Research Intern**, Industry Collaboration (NTHU × ITRI)

Sept 2024 – Nov 2025

Demo Video

- Built an end-to-end image-to-3DGS/mesh reconstruction pipeline for fast scene digitization
- Developed a real-time (60 FPS) interactive web viewer and measurement tools (distance/volume) with <1m real-world error

**Frontend Game Developer**, Industry Collaboration (NTHU × IGS)

May 2025 – Oct 2025

- Implemented UI systems and state-driven navigation flow in Unity (C#), covering core game screens and transitions.

## Education

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**National Tsing Hua University**

Sept 2024 – present

Master, Computer Science

Related Courses: Graphics Programming (1/35), Game Programming (1/94)

**National Tsing Hua University**

Sept 2020 – June 2024

Bachelor, Computer Science

Related Courses: Parallel Programming (1/80), Algorithms (1/100), Computer Architecture (1/122)

## Projects

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**CSG Modeling with Signed Distance Fields (SDF)** — [pdf](#) / [code](#)

Mar 2025 – May 2025

- Built a JSON-driven CSG system with SDF primitives/boolean ops and GPU ray marching for interactive visualization
- Developed an interactive UI workflow (load/edit/export scenes) and optional mesh extraction

## Publications

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**LoBE-GS: Load-Balanced and Efficient 3D Gaussian Splatting for Large-Scale Scene Reconstruction**

Oct 2025

*Sheng-Hsiang Hung, Ting-Yu Yen, Wei-Fang Sun, Simon See, Shih-Hsuan Hung, Hung-Kuo Chu*

Accept to NVIDIA GTC 2026

[arXiv](#) / [poster](#)

- Identified load-balancing bottlenecks in prior large-scale 3DGS and proposed a runtime-correlated proxy for better workload balancing
- Developed LoBE-GS with load-balance-aware partitioning, fast camera selection, and visibility cropping + selective densification to accelerate fine training
- Demonstrated ~2× training speedup over prior SOTA methods while maintaining comparable rendering quality

## Skills

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**Languages:** Python, C++, JavaScript, C#, CUDA

**ML Frameworks:** PyTorch, Triton

**Tools:** Git, Docker, Linux, OpenGL, Unity

**Research Areas:** 3D Reconstruction, Novel View Synthesis