JIA LI

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EDUCATION BACKGROUND

Shandong University (Sponsored by Project **985**) Sept. 2022 – Present, China

Master of Software Engineering

- Avg Scores: 85.8/100
- Research interests: Computer graphics / 3D vision

Hohai University (Sponsored by Project **211**) Sept. 2018 – Jun. 2022, China

Bachelor of Computer Science

- GPA: 4.88/5.0 (Rank: 2/121)
- Main courses: Calculus, Linear Algebra, Discrete mathematics, Probability, Numeral Calculations, Data Structure, Operation System, Computer Graphics, Software Engineering, Algorithm.

PUBLICATIONS

(SIGGRAPH 2024 TOG) TensoSDF: Roughness-aware Tensorial Representation for Robust Geometry and Material Reconstruction

Jia Li, Lu Wang*, Lei Zhang, Beibei Wang* Project link: https://riga2.github.io/tensosdf/

- **More robust pipeline:** Use the surface roughness to incorporate the learning of radiance and reflectance fields, enabling the reconstruction of any reflective (diffuse/glossy/specular) objects robustly.
- **More detailed geometry:** Propose the TensoSDF - a new geometry expression that encodes the SDF with a tensorial representation, achieving more detailed surfaces and faster convergence.
- **More accurate material:** Propose a Mesh-SDF fusion strategy, achieving a higher quality of material estimation.

(CVPR 2024) Neural Super-Resolution for Real-time Rendering with Radiance Demodulation

Jia Li, Ziling Chen, Xiaolong Wu, Lu Wang*, Beibei Wang*, Lei Zhang Project link: https://riga2.github.io/nsrd/

- **Radiance demodulation:** Use the G-buffer information in the deferred rendering pipeline to decompose the radiance into the lower-frequency lighting component and the material component. Only perform the super-resolution on the lighting component, preserving more texture details in the scenes.
- **Frame-recurrent Network:** Integrate the previous and current frames to design a real-time super-resolution network, achieving better quality than other SOTA methods both qualitatively and quantitatively.

INTERNSHIP EXPERIENCE

Tencent Games Mar. 2024 – Jul. 2024, China

Rendering Engine Development Intern

Optimizations for the mobile rendering pipeline in UE4:

1) Optimize the Pipeline State Object (PSO) Caching, achieving 8×faster scene loading on OpenGL ES;
2) Support Specular Anti-aliasing (SAA), removing the shiny artifacts on the high-curvature specular surfaces;
3) Propose an efficient, ghosting-free, and less flickering Temporal Anti-aliasing (TAA) method for mobile games;
4) Optimize the Bloom effects, achieving 0.2ms faster than the native implementation with a lower bandwidth.

HONORS & AWARDS

- **National Scholarship**, from the Ministry of Education of China Nov. 2024
- The Mathematical Contest in Modeling (MCM) for American College Students - **Finalists Awards** Apr. 2020
- "China Software Cup" - College Student Software Design Competition - **First Prize** Oct. 2021
- **First-class** Scholarship of Shandong University Oct. 2022 & 2024
- Academic and Innovation Scholarships of Hohai University (Three times) Sept. 2019 & 2020 & 2021

MISCELLANEOUS

- Skills: C++, Python, Unreal Engine, Unity Engine, Blender, Vulkan, OpenGL
- Language: Chinese (Native), English (IELTS: 7.0)
- Service: Reviewer for Pacific Graphics 2024