

Yang Zhou | Graphics Researcher

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Education

Ph.D. in Computer Science

University of California, Santa Barbara (Advisor: Prof. Lingqi Yan)

Focus: physically based rendering, scene representations, appearance modeling, light transport simulation

Santa Barbara, CA

Sept 2019 – Present

Master of Entertainment Technology

Carnegie Mellon University

Pittsburgh, PA

Sept 2015 – May 2017

Bachelor of Computer Science

Southeast University, Thesis at Kungliga Tekniska Högskolan, Sweden

Nanjing, China

Sept 2011 – June 2015

Publications and Manuscripts

Unified Gaussian Primitives for Scene Representation and Rendering

Y. Zhou, S. Wu, and L. Yan. In submission.

Real-time Level-of-detail Strand-based Hair Rendering

T. Huang, Y. Zhou, D. Lin, J. Zhu, L. Yan, and K. Wu. In submission.

Appearance-Preserving Scene Aggregation for Level-of-Detail Rendering

Y. Zhou, T. Huang, R. Ramamoorthi, P. Sen, and L. Yan. ACM Trans. Graph. 44(1), 8 (Feb 2025).

Vectorization for Fast, Analytic, and Differentiable Visibility

Y. Zhou, L. Wu, R. Ramamoorthi, and L. Yan. ACM Trans. Graph. 40(3), 27 (June 2021). Presented at SIGGRAPH 2021.

Customizable Render Pipelines Using Render Graphs

C. J. White, R. W. Lamore, P. Engstad, I. Gavrenkov, M. Stoll, Y. Zhou, US Patent US2020/0104970A1.

Professional Experience

Meta Reality Labs Research

Research Scientist Intern

Sausalito, CA; Redmond, WA
June 2023 – Sept 2023; June 2022 – Sept 2022; June 2020 – Sept 2020

- Research project on neural volumetric rendering and relighting.
- Research project on realistic skin rendering and filtering.
- Research project on texture and appearance synthesis.

NVIDIA Research

Research Intern

Redmond, WA

June 2021 – Sept 2021

- Research project on volumetric appearance model and spatial correlation.

Apple Inc.

Rendering Engineer

Sunnyvale, CA

June 2017 – May 2019

- RealityKit: Developed physically-based shading, lighting, HDR pipeline, anti-aliasing, and other real-time rendering techniques.
- AR Quick Look: Developed key features including environment reflection and soft contact shadow.

Facebook Reality Labs

Game Engineer Intern

Pittsburgh, PA

Jan 2017 – May 2017

- Contributed to an unannounced cooperative social virtual reality system based on Unreal Engine.

Insomniac Games, Inc.

Gameplay Programmer Intern

Burbank, CA

May 2016 – Aug 2016

- Developed gameplay systems for Marvel's Spider-Man PS4 game.

Personal Projects

Narumi: An Offline Physically Based Renderer

2017 – 2018

- Acceleration structures: binned-SAH BVH, HLBVH, and SBVH.
- Integrators: path tracing, BDPT, and VCM, with with participation media support.
- Various material and lighting features such as microfacet models, subsurface scattering, and image-based lighting.

Crowd Simulation by the Least-effort Approach

Jan 2015 – May 2015

- Bachelor degree project. Implemented and evaluated crowd simulation based on the Principle of Least-effort.
- Capable of simulating thousands of pedestrians in real time, creating smooth and collision-free motion.

Technical Skills

Programming Languages: C/C++, GLSL/HLSL/Cg, C#, Python

Software: Vulkan, Metal, OpenGL, CUDA, Unity, Unreal Engine, Mitsuba, pbrt, Embree, PyTorch, Blender