Yang Zhou

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Mission ***Crafting and Learning Visual Representations for Immersive Worlds.***

Education

Ph.D. in Computer Science — Sept. 2019 – March 2025
University of California, Santa Barbara — Santa Barbara, CA, USA

Advisor: Prof. Lingqi Yan.
Dissertation: *Unified, Multi-Scale Scene Representations for Scalable Physically Based Rendering.*

Master of Entertainment Technology — Sept. 2015 – May 2017
Carnegie Mellon University — Pittsburgh, PA, USA

B.S. in Computer Science — Sept 2011 – June 2015
Southeast University (thesis at **Kungliga Tekniska Högskolan**, Sweden) — Nanjing, China

Experience

Research Scientist — March 2025 – Present
Meta Reality Labs — Redmond, WA, USA

Graphics research with machine learning. Topics include 3D/4D Gaussian splatting, volumetric media, neural materials, virtual geometry, and video diffusion models. Transition state-of-the-art graphics technologies into AR/VR products including **Meta Horizon Hyperscape**.

Research Scientist Intern — Summers 2020, 2022, 2023
Meta Reality Labs — Sausalito, CA, USA; Redmond, WA, USA

Neural volumetric rendering, realistic skin rendering, and texture synthesis.

Research Intern — June 2021 – Sept. 2021
NVIDIA Research — Redmond, WA, USA

Volumetric appearance models and spatially correlated participating media.

Rendering Engineer — June 2017 – May 2019
Apple Inc. — Sunnyvale, CA, USA

RealityKit: Physically-based shading, advanced lighting, HDR pipeline, and anti-aliasing.
AR Quick Look: Key features including lighting estimation and ray-traced contact shadows.

Game Engineer Intern — Jan. 2017 – May 2017
Facebook Reality Labs — Pittsburgh, PA, USA

Unannounced cooperative social virtual reality system based on Unreal Engine.

Gameplay Programmer Intern — May 2016 – Aug. 2016
Insomniac Games, Inc. — Burbank, CA, USA

Gameplay systems for Marvel's Spider-Man PS4 game.

Publications and Preprints

1. Tobias Ritschel, **Yang Zhou**, Nick Milef, Mikhail Dereviannykh, Chen Liu, Christophe Hery, and Carl Marshall. ***Tabula Rasa: Monte Carlo Estimation of Unit-Variance Noise with Controlled Spatio-Temporal Correlation.*** In submission.
2. Victor Rong, Nick Milef, **Yang Zhou**, Frank Yang, Sanchit Garg, Dario Seyb, Todd Keeler, Tobias Ritschel, and Carl Marshall. ***Hybrid Mesh and Gaussian Representations for Efficient Rendering of Radiance Fields.*** In submission.
3. **Yang Zhou**, Songyin Wu, and Ling-Qi Yan. ***Unified Gaussian Primitives for Scene Representation and Rendering.*** arXiv:2406.09733. In revision, ACM Transactions on Graphics.
4. Yehonathan Litman, Shikun Liu, Dario Seyb, Nicholas Milef, **Yang Zhou**, Carl Marshall, Shubham Tulsiani, and Caleb Leak. ***EditCtrl: Disentangled Local and Global Control for Real-Time Generative Video Editing.*** IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2026.
5. Zilin Xu, **Yang Zhou**, Yehonathan Litman, Matt Jen-Yuan Chiang, Ling-Qi Yan, and Anton Michels. ***Real-Time Neural Materials on Mobile VR.*** Computer Graphics Forum, May 2026. (Presented at Eurographics 2026.)
6. Zilin Xu, Yehonathan Litman, Ling-Qi Yan, **Yang Zhou**, and Anton Michels. ***Improving Angular Parameterization for Compact Neural Materials.*** In Proceedings of the SIGGRAPH Asia 2025 Posters.
7. Tao Huang, **Yang Zhou**, Daqi Lin, Junqiu Zhu, Ling-Qi Yan, and Kui Wu. ***Real-Time Level-of-Detail Strand-Based Rendering.*** Computer Graphics Forum, 44(4), June 2025. (Presented at EGSR 2025.)
8. **Yang Zhou**, Tao Huang, Ravi Ramamoorthi, Pradeep Sen, and Ling-Qi Yan. ***Appearance-Preserving Scene Aggregation for Level-of-Detail Rendering.*** ACM Transactions on Graphics, 44(1), 8, 2025. (Presented at SIGGRAPH 2025.)
9. **Yang Zhou**, Lifan Wu, Ravi Ramamoorthi, and Ling-Qi Yan. ***Vectorization for Fast, Analytic, and Differentiable Visibility.*** ACM Transactions on Graphics, 40(3), 27, 2021. (Presented at SIGGRAPH 2021.)

Patents

Cody J. White, Randal W. Lamore, Pål-Kristian Engstad, Ivan Gavrenkov, Matthew Stoll, and **Yang Zhou**. ***Customizable Render Pipelines Using Render Graphs.*** U.S. Patent No. 11,087,430.

Academic Service

Program Committee

SIGGRAPH 2026 Technical Papers Committee.

EGSR 2026 International Program Committee.

Reviewer

SIGGRAPH (2022–2025), SIGGRAPH Asia (2022–2025), ACM ToG (2025), IEEE TVCG (2025), I3D (2026), The Visual Computer (2025), CVPR (2026), NeurIPS (2026).

Technical Skills

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

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