



Yang Zhou

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

Work

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.

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

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 proceedings of SIGGRAPH Asia 2026.
2. Brian Chao, Dario Seyb, Nathan Matsuda, Oliver Cossairt, **Yang Zhou**, Douglas Lanman, Gordon Wetzstein, Grace Kuo, and Changwon Jang. ***Fast Wave-optics Rendering of Multiplane Images for 3D Holographic Displays.*** [arXiv:2607.19731](https://arxiv.org/abs/2607.19731) (2026).
3. **Yang Zhou**, Songyin Wu, and Ling-Qi Yan. ***Unified Gaussian Primitives for Scene Representation and Rendering.*** ACM Transactions on Graphics, June 2026.
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.*** In Proceedings of the 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 (In Proceedings of 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 (In Proceedings of 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, Jan 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, June 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, Session Chair.

EGSR 2026 International Program Committee.

Reviewer

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

Skills

Technical: Computer graphics, **physically based rendering**, real-time rendering, volumetric

rendering, scene representations, appearance modeling, differentiable rendering, neural materials and shading, **neural reconstruction and view synthesis**, Monte Carlo methods, numerical optimization, **generative modeling**, diffusion models, flow matching.

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

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