Zilin Xu

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EDUCATION

Ph.D. in Computer Science, advised by Prof. Ling-Qi Yan **2023 - Present**
University of California, Santa Barbara & Santa Barbara, USA
 Mohamed bin Zayed University of Artificial Intelligence Abu Dhabi, UAE
*Started Ph.D. at UCSB, transferred with advisor to MBZUAI in 2025

M.Eng. in Software Engineering, advised by Prof. Lu Wang **2020 - 2023**
Shandong University Jinan, China
*Ranked 1st in the major

B.Eng. in Software Engineering **2016 - 2020**
Shandong University Jinan, China

RESEARCH INTERESTS

Real-time Neural Appearance → Rendering → Computer Graphics
My research focuses on leveraging neural techniques for efficient and accurate appearance representation, with a special emphasis on real-time performance. It also explores advanced features (e.g., dynamic synthesis) that are challenging for traditional methods.

SELECTED PUBLICATIONS

Towards Comprehensive Neural Materials: Dynamic Structure-Preserving Synthesis with Accurate Silhouette at Instant Inference Speed **2025**
Zilin Xu, Xiang Chen, Chen Liu, Beibei Wang, Lu Wang, Zahra Montazeri, Ling-Qi Yan
SIGGRAPH 2025
*Video clips featured in the Technical Papers Trailer.

A Dynamic By-example BTF Synthesis Scheme **2024**
Zilin Xu, Zahra Montazeri, Beibei Wang, Ling-Qi Yan
SIGGRAPH Asia 2024

Lightweight Neural Basis Functions for All-Frequency Shading **2022**
Zilin Xu, Zheng Zeng, Lifan Wu, Lu Wang, Ling-Qi Yan
SIGGRAPH Asia 2022

Unsupervised Image Reconstruction for Gradient-Domain Volumetric Rendering **2020**
Zilin Xu, Qiang Sun, Lu Wang, Yanning Xu, Beibei Wang
Computer Graphics Forum (Proceedings of *Pacific Graphics 2020*)

Non-first author papers:
Ray-aligned Occupancy Map Array for Fast Approximate Ray Tracing **2023**
Zheng Zeng, Zilin Xu, Lu Wang, Lifan Wu, Ling-Qi Yan
Computer Graphics Forum (Proceedings of *Eurographics Symposium on Rendering 2023*)

Neural Complex Luminaires: Representation and Rendering **2021**
Junqiu Zhu, Yaoyi Bai, Zilin Xu, Steve Bako, Edgar Velázquez-Armendáriz, Lu Wang, Pradeep Sen, Miloš Hašan, Ling-Qi Yan
Transactions on Graphics (Proceedings of *SIGGRAPH 2021*)

TECHNICAL WRITING

Towards Comprehensive Neural Materials: Dynamic Structure-Preserving Synthesis with Accurate Silhouette at Instant Inference Speed **2025**
Zilin Xu, Xiang Chen, Beibei Wang, Lu Wang, Zahra Montazeri, Ling-Qi Yan
GPU Zen 4

Cascaded Ray-aligned Occupancy Map Array for Fast Approximate Ray Tracing in Large Scale Scenes **2025**
Zheng Zeng, Zilin Xu, Lifan Wu, Ling-Qi Yan
GPU Zen 4

WORK EXPERIENCE

Research Scientist Intern Summer 2025
Meta Reality Labs Research Redmond, USA
Real-time Neural Materials on Mobile VR (Meta Quest3).
Top-rated Intern at Reality Labs!

Graphics Development Engineer Intern Summer 2024
Autodesk, Inc. (Remote from) Santa Barbara, USA
Advanced 3D Wood Material and By-example Texture Synthesis in MaterialX.

TEACHING EXPERIENCE

CS190I: Introduction to Offline Rendering Winter 2024
University of California, Santa Barbara Santa Barbara, USA
Teaching Assistant

Advanced Programming Language (Java) Fall 2020
Shandong Univerisity Jinan, China
Teaching Assistant

INVITED TALKS

Towards Comprehensive Neural Materials Sept. 2025
Shandong University Jinan, China

Novel Rendering Methods under the New Paradigm Aug. 2025
GAMES Webinar 377 Online, China
⚭ https://www.bilibili.com/video/BV1BEaPzBEWJ/

Towards Comprehensive Neural Materials May 2025
South California Rendering Day - University of California San Diego San Diego, CA, USA

Dynamic BTF Synthesis Mar. 2024
South California Rendering Day - UC Irvine Irvine, CA, USA

Neural Complex Luminaires: Representation and Rendering 2021
CCF International Conference on CAD&CG 2020/2021 Dalian, China

PROFESSIONAL SKILLS

Programming Languages:	C/C++, CUDA, Python, Shader languages (Slang/HLSL/GLSL)
Technical Skills:	Pytorch, Falcor Renderer, Blender, Open 3D Engine, 3DS Max

PROFESSIONAL SERVICES

Conference reviewer:	*SIGGRAPH*, *SIGGRAPH Asia* , *Eurographics* (EG), *Pacific Graphics* (PG)
Journal reviewer:	*Transactions on Graphics* (ToG), *Transactions on Visualization and Computer Graphics* (TVCG), *Computer Graphics Forum* (CGF)

SELECTED AWARDS

National Scholarship ($< 1\%$) 2022
Shandong University Chancellor's Scholarship Nomination ($< 0.1\%$) 2022
Weichai Outstanding Graduate Student Scholarship ($< 1\%$) 2021
Outstanding Graduate Student Award 2022
First Prize Scholarship of Shandong University 2021
Intel Cup **National Software Innovation Competition in China (ranked #17 nationally)** 2019