

Zilin Xu

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EDUCATION

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| Ph.D. in Computer Science, advised by Prof. Ling-Qi Yan <i>Mohamed bin Zayed University of Artificial Intelligence</i> 2025 - Present | 2023 - Present Abu Dhabi, UAE |
| <i>University of California, Santa Barbara</i> 2023 - 2025 *Started Ph.D. at UCSB, transferred with advisor to MBZUAI in 2025 | Santa Barbara, USA |
| M.Eng. in Software Engineering, advised by Prof. Lu Wang <i>Shandong University</i> *Ranked 1st in the major | 2020 - 2023 Jinan, China |
| B.Eng. in Software Engineering <i>Shandong University</i> | 2016 - 2020 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

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| Towards Comprehensive Neural Materials: Dynamic Structure-Preserving Synthesis with Accurate Silhouette at Instant Inference Speed Zilin Xu , Xiang Chen, Chen Liu, Beibei Wang, Lu Wang, Zahra Montazeri, Ling-Qi Yan <i>SIGGRAPH 2025</i> *Video clips featured in the Technical Papers Trailer. | 2025 |
| A Dynamic By-example BTF Synthesis Scheme Zilin Xu , Zahra Montazeri, Beibei Wang, Ling-Qi Yan <i>SIGGRAPH Asia 2024</i> | 2024 |
| Lightweight Neural Basis Functions for All-Frequency Shading Zilin Xu , Zheng Zeng, Lifan Wu, Lu Wang, Ling-Qi Yan <i>SIGGRAPH Asia 2022</i> | 2022 |
| Unsupervised Image Reconstruction for Gradient-Domain Volumetric Rendering Zilin Xu , Qiang Sun, Lu Wang, Yanning Xu, Beibei Wang <i>Computer Graphics Forum</i> (Proceedings of <i>Pacific Graphics 2020</i>) | 2020 |
| Non-first author papers: Ray-aligned Occupancy Map Array for Fast Approximate Ray Tracing Zheng Zeng, Zilin Xu , Lu Wang, Lifan Wu, Ling-Qi Yan <i>Computer Graphics Forum</i> (Proceedings of <i>Eurographics Symposium on Rendering 2023</i>) | 2023 |
| Neural Complex Luminaires: Representation and Rendering Junqiu Zhu, Yaoyi Bai, Zilin Xu , Steve Bako, Edgar Velázquez-Armendáriz, Lu Wang, Pradeep Sen, Miloš Hašan, Ling-Qi Yan <i>Transactions on Graphics</i> (Proceedings of <i>SIGGRAPH 2021</i>) | 2021 |

TECHNICAL WRITING

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| Towards Comprehensive Neural Materials: Dynamic Structure-Preserving Synthesis with Accurate Silhouette at Instant Inference Speed Zilin Xu , Xiang Chen, Beibei Wang, Lu Wang, Zahra Montazeri, Ling-Qi Yan <i>GPU Zen 4</i> | 2025 |
| Cascaded Ray-aligned Occupancy Map Array for Fast Approximate Ray Tracing in Large Scale Scenes Zheng Zeng, Zilin Xu , Lifan Wu, Ling-Qi Yan <i>GPU Zen 4</i> | 2025 |

WORK EXPERIENCE

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| Research Scientist Intern <i>Meta Reality Labs Research</i> Real-time Neural Materials on Mobile VR (Meta Quest3). Top-rated Intern at Reality Labs! | Summer 2025 Redmond, USA |
| Graphics Development Engineer Intern <i>Autodesk, Inc.</i> Advanced 3D Wood Material and By-example Texture Synthesis in MaterialX. | Summer 2024 (Remote from) Santa Barbara, USA |

TEACHING EXPERIENCE

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| CS190I: Introduction to Offline Rendering <i>University of California, Santa Barbara</i> Teaching Assistant | Winter 2024 Santa Barbara, USA |
| Advanced Programming Language (Java) <i>Shandong Univerisity</i> Teaching Assistant | Fall 2020 Jinan, China |

INVITED TALKS

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| Towards Comprehensive Neural Materials <i>Shandong University</i> | Sept. 2025 Jinan, China |
| Novel Rendering Methods under the New Paradigm <i>GAMES Webinar</i> 🔗 https://www.bilibili.com/video/BV1BEaPzBEWJ/ | Aug. 2025 Online, China |
| Towards Comprehensive Neural Materials <i>South California Rendering Day - University of California San Diego</i> | May 2025 San Diego, CA, USA |
| Dynamic BTF Synthesis <i>South California Rendering Day - University of California Irvine</i> | Mar. 2024 Irvine, CA, USA |
| Neural Complex Luminaires: Representation and Rendering <i>CCF International Conference on CAD&CG 2020/2021</i> | 2021 Dalian, China |

PROFESSIONAL SKILLS

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

PROFESSIONAL SERVICES

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| Conference reviewer: | <i>SIGGRAPH, SIGGRAPH Asia, Eurographics (EG), Pacific Graphics (PG)</i> |
| Journal reviewer: | <i>Transactions on Graphics (ToG), Transactions on Visualization and Computer Graphics (TVCG), Computer Graphics Forum (CGF)</i> |

SELECTED AWARDS

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| 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 |