LEI XIAO

leixiao08@gmail.com • **Website** • **Google Scholar** • **LinkedIn**

SUMMARY

Staff Research Scientist and Tech Lead Manager specializing in AI-driven 3D computer vision, neural rendering and imaging for immersive XR technologies. Experience developing state-of-the-art techniques for view synthesis, 3D/4D reconstruction, telepresence and generative media. Track record of publishing in top-tier venues with work featured in Meta Connect, Oculus Blog, and media outlets. Background in leading a research science team and collaborating with multidisciplinary teams to bridge fundamental research with real-world applications.

PROFESSIONAL EXPERIENCE

Meta, Reality Labs Research, Redmond 2022 - CURRENT
AI Research Science Manager (Tech Lead Manager)

Meta, Reality Labs Research, Redmond 2017 - 2022
Research Scientist

Max Planck Institute for Intelligent Systems, Tübingen 2016.09-11
Visiting Researcher

Adobe Research, Seattle 2015.08-11
Research Intern

EDUCATION

University of British Columbia, Vancouver, Canada 2012 - 2017
Ph.D. in Computer Science Supervisor: Wolfgang Heidrich
Thesis Topics: Computational Imaging

SELECTED PUBLICATION

Geometry-guided Online 3D Video Synthesis with Multi-View Temporal Consistency CVPR 2025
H. Ha, **L. Xiao**, C. Richardt, T. Nguyen-Phuoc, C. Kim, M. Kim, D. Lanman, N. Khan

LIRM: Large Inverse Rendering Model for Progressive Reconstruction of Shape, Materials, View-dependent Radiance Fields CVPR 2025
Z. Li, D. Wang, K. Chen, Z. Lv, T. Nguyen-Phuoc, M. Lee, J. Huang, **L. Xiao**, Y. Zhu, C. Marshall, Y. Ren, R. Newcombe, Z. Dong

Wide Field-of-View Mixed Reality [Under Review, SIGGRAPH 2025 Emerging Technologies]
L. Xiao, Y. Zhao, D. Lindberg, J. Hegland, E. Penner, D. Tebbs, D. Terpstra, S. Moczydlowski, I. Ender, Y. Lin, N. Chu, J. Majors, D. Lanman

ReplaceAnything3D: Text-Guided 3D Scene Editing with Compositional NeRFs NeurIPS 2024
Y. Liang, N. Khan, Z. Li, T. Nguyen-Phuoc, D. Lanman, J. Tompkin, **L. Xiao**

GauFRe: Gaussian Deformation Fields for Real-time Dynamic Novel View Synthesis WACV 2025
Y. Liang, N. Khan, Z. Li, T. Nguyen-Phuoc, D. Lanman, J. Tompkin, **L. Xiao**

TextureDreamer: Image-guided Texture Synthesis through Geometry-aware Diffusion CVPR 2024
Y. Yeh, J. Huang, C. Kim, **L. Xiao**, T. Nguyen-Phuoc, N. Khan, C. Zhang, M. Chandraker, C. Marshall, Z. Dong, Z. Li

Tiled Multiplane Images for Practical 3D Photography ICCV 2023
N. Khan, D. Lanman, **L. Xiao**

Temporally Consistent Online Depth Estimation Using Point-Based Fusion CVPR 2023
N. Khan, E. Penner, D. Lanman, **L. Xiao**

NeuralPassthrough: Learned Real-Time View Synthesis for VR SIGGRAPH 2022
L. Xiao, S. Nouri, J. Hegland, A. Garcia, D. Lanman

SNeRF: Stylized Neural Implicit Representations for 3D Scenes SIGGRAPH 2022
T. Nguyen-Phuoc, F. Liu, **L. Xiao**

Neural Compression for Hologram Images and Videos Optics Letters 2022
L. Shi, R. Webb, **L. Xiao**, C. Kim, C. Jang

Deep 3D Mask Volume for View Synthesis of Dynamic Scenes ICCV 2021
K. Lin, **L. Xiao**, F. Liu, G. Yang, R. Ramamoorthi

Neural Supersampling for Real-time Rendering SIGGRAPH 2020
L. Xiao, S. Nouri, M. Chapman, A. Fix, D. Lanman, A. Kaplanyan

DeepFocus: Learned Image Synthesis for Computational Displays SIGGRAPH ASIA 2018
L. Xiao, A. Kaplanyan, A. Fix, M. Chapman, D. Lanman

Discriminative Transfer Learning for General Image Restoration Trans. Image Processing 2018
L. Xiao, F. Heide, W. Heidrich, B. Schölkopf, M. Hirsch

Learning High-Order Filters for Efficient Blind Deconvolution of Document Photographs ECCV 2016
L. Xiao, J. Wang, W. Heidrich, M. Hirsch

Defocus Deblurring and Superresolution for Time-of-Flight Depth Cameras CVPR 2015
L. Xiao, F. Heide, M. O'Toole, A. Kolb, M. Hullin, K. Kutulakos, W. Heidrich

Stochastic Blind Motion Deblurring Trans. Image Processing 2015
L. Xiao, F. Heide, M. O'Toole, A. Kolb, M. Hullin, K. Kutulakos, W. Heidrich

Imaging in Scattering Media Using Correlation Image Sensors and Sparse Conv. Coding Optics Express 2014
F. Heide, **L. Xiao**, A. Kolb, M. Hullin, W. Heidrich

Temporal Frequency Probing for 5D Transient Analysis of Global Light Transport SIGGRAPH 2014
M. O'Toole, F. Heide, **L. Xiao**, M. Hullin, W. Heidrich, K. Kutulakos

Diffuse Mirrors: 3D Reconstruction from Diffuse Indirect Illumination Using Inexpensive Time-of-Flight Sensors CVPR 2014
F. Heide, **L. Xiao**, W. Heidrich, M. Hullin

Compressive Rendering of Multidimensional Scenes Video Processing and Computational Video 2011
P. Sen, S. Darabi, **L. Xiao**

SKILLS

Programming languages: PyTorch, Python, C++