# Xianrui Luo

Homepage

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## BIOGRAPHY

I am pursuing a Ph.D. degree with the School of Artificial Intelligence and Automation, Huazhong University of Science and Technology, supervised by Prof. Zhiguo Cao (expected to graduate in July 2025). My research interests lie in 3D vision and image manipulation, with a particular emphasis on computational photography, including image deblurring, all-in-focus synthesis, and bokeh rendering.

## EDUCATION

**Huazhong University of Science and Technology, China**               **Sep 2020 – present**
*Doctor of Artificial Intelligence*                                                     *GPA: 90.19*

**Huazhong University of Science and Technology, China**               **Sep 2016 – Jun 2020**
*Bachelor of Automation*                                                                  *GPA: 89.2*

## PUBLICATIONS

**Journal Articles**

**Defocus to Focus:**
**Photo-realistic Bokeh Rendering by Fusing Defocus and Radiance Priors**    **Information Fusion** 2023
*Xianrui Luo\*, Juewen Peng\*, Ke Xian, Zijin Wu, Zhiguo Cao (\*Equal Contribution)*    *[Paper] [Code]*

**Point-and-Shoot All-in-Focus Photo Synthesis From Smartphone Camera Pair**    **IEEE TCSVT** 2023
*Xianrui Luo, Juewen Peng, Weiyue Zhao, Ke Xian, Hao Lu, Zhiguo Cao*    *[Paper]*

**Dual-Camera All-in-Focus Neural Radiance Fields**    **IEEE TPAMI** 2025
*Xianrui Luo, Zijin Wu, Juewen Peng, Huiqiang Sun, Zhiguo Cao, Guosheng Lin*

**BokehMe++: Harmonious Fusion of Classical and Neural Rendering for Versatile Bokeh Creation**    **IEEE TPAMI** 2024
*Juewen Peng, Zhiguo Cao, Xianrui Luo, Ke Xian, Wenfeng Tang, Jianming Zhang, Guosheng Lin*

**Conference Papers**

**Dynamic Neural Radiance Field From Defocused Monocular Video**    **ECCV** 2024
*Xianrui Luo, Huiqiang Sun, Juewen Peng, Zhiguo Cao*    *[Paper][Code]*

**Bokeh Rendering from Defocus Estimation**    **ECCVW** 2020
*Xianrui Luo\*, Juewen Peng\*, Ke Xian, Zijin Wu, Zhiguo Cao (\*Equal Contribution)*    *[Paper]*

**Interactive Portrait Bokeh Rendering System**    **ICIP** 2021
*Juewen Peng, Xianrui Luo, Ke Xian, Zhiguo Cao*    *[Paper]*

**BokehMe: When Neural Rendering Meets Classical Rendering**    **CVPR** 2022
*Juewen Peng, Zhiguo Cao, Xianrui Luo, Hao Lu, Ke Xian, Jianming Zhang*    *[Paper][Code]*

**MPIB: An MPI-Based Bokeh Rendering Framework for Realistic Partial Occlusion Effects**    **ECCV** 2022
*Juewen Peng, Jianming Zhang, Xianrui Luo, Hao Lu, Ke Xian, Zhiguo Cao*    *[Paper][Code]*

**Fast Full-frame Video Stabilization with Iterative Optimization**    **ICCV** 2023
*Weiyue Zhao, Xin Li, Zhan Peng, Xianrui Luo, Xinyi Ye, Hao Lu, Zhiguo Cao*    *[Paper][Code]*

**Selective Bokeh Effect Transformation**    **CVPRW** 2023
*Juewen Peng, Zhiyu Pan, Chengxin Liu, Xianrui Luo, Huiqiang Sun, Liao Shen, Ke Xian, Zhiguo Cao*    *[Paper][Code]*

## EXPERIENCE

**Project Officer | S-Lab for Advanced Intelligence, Nanyang Technological University**    Nov 2023-Nov 2024
Advisor: Prof. Guosheng Lin

## Project

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|---|---|
| **S-Lab Funding Project on Human Avatar Modeling** | Nov 2023 – Nov 2024 |
| I serve as a core member responsible for 3D Human Avatar Modeling. | |
| **NTIRE 2023 Challenge on Bokeh Effect Transformation (CVPR2023 Workshop)** | Jun 2023 |
| Winner Award | |
| **Vivo Funding Project on Simulation of Bokeh Effect from DSLR** | Jan 2023 – Dec 2023 |
| I serve as a core member responsible for realistic bokeh synthesis for smartphone photography. | |
| **AIM 2020 Challenge on Rendering Realistic Bokeh (ECCV2020 Workshop)** | Aug 2020 |
| Runner Up Award | |

## Awards and Honors

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|---|---|---|
| **National Scholarship** | *Huazhong University of Science and Technology* | 2024 |
| **Academic Scholarship** | *Huazhong University of Science and Technology* | 2020-2024 |
| **Outstanding Graduates** | *Huazhong University of Science and Technology* | 2020 |
| **Merit Student** | *Huazhong University of Science and Technology* | 2016, 2023 |
| **Best Poster Award** | *Artificial Intelligence Conference and Entrepreneurs Summit Forum of China's Optics Valley* | 2022 |

## Skills

| **Programming Language** | **Machine Learning Tools** | **English** |
|---|---|---|
| *Python, MATLAB, C* | *PyTorch, OpenCV* | *TOEFL 109, GRE 325 (AW 4.0)* |