Xianrui Luo

Homepage

📍 Wuhan, China

@ Email: xianruiluo@hust.edu.cn

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 2025). My research interests lie in computer vision and image manipulation, with a particular emphasis on computational photography, including image deblurring, all-in-focus synthesis, and bokeh rendering. I am currently working on integrating 3D vision into computational photography.

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 (**IF=18.6**)
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 (**IF=8.4**)
Xianrui Luo, Juewen Peng, Weiyue Zhao, Ke Xian, Hao Lu, Zhiguo Cao [Paper]

Dual-Camera All-in-Focus Neural Radiance Fields **IEEE TPAMI** 2023 (**IF=23.6**)
Xianrui Luo, Zijin Wu, Juewen Peng, Huiqiang Sun, Zhiguo Cao, Guosheng Lin ***Under Review***

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-Now
Advisor: Prof. Guosheng Lin

PROJECT

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.

"DigiX Joint Innovation Center of Huawei-HUST" Funding Project   Mar 2021 – Mar 2022
I serve as a core member responsible for dual-camera all-in-focus synthesis.

AIM 2020 Challenge on Rendering Realistic Bokeh (ECCV2020 Workshop)   Aug 2020
Runner Up Award

Awards and Honors

Academic Scholarship	*Huazhong University of Science and Technology*	2020-2023
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)*