

Xianrui Luo

Homepage

📍 Singapore, Singapore

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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 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. I am currently working on integrating 3D vision into computational photography.

EDUCATION

Huazhong University of Science and Technology, China
Doctor of Artificial Intelligence

Sep 2020 – present
GPA: **90.19**

Huazhong University of Science and Technology, China
Bachelor of Automation

Sep 2016 – Jun 2020
GPA: **89.2**

PUBLICATIONS

Journal Articles

Defocus to Focus:

Photo-realistic Bokeh Rendering by Fusing Defocus and Radiance Priors
*Xianrui Luo**, Juewen Peng*, Ke Xian, Zijin Wu, Zhiguo Cao (*Equal Contribution)

Information Fusion 2023
[\[Paper\]](#) [\[Code\]](#)

Point-and-Shoot All-in-Focus Photo Synthesis From Smartphone Camera Pair
Xianrui Luo, Juewen Peng, Weiyue Zhao, Ke Xian, Hao Lu, Zhiguo Cao

IEEE TCSVT 2023
[\[Paper\]](#)

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

IEEE TPAMI 2023
Under Review

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

IEEE TPAMI 2024

Conference Papers

Dynamic Neural Radiance Field From Defocused Monocular Video
Xianrui Luo, Huiqiang Sun, Juewen Peng, Zhiguo Cao

ECCV 2024
[\[Paper\]](#) [\[Code\]](#)

Bokeh Rendering from Defocus Estimation
*Xianrui Luo**, Juewen Peng*, Ke Xian, Zijin Wu, Zhiguo Cao (*Equal Contribution)

ECCVW 2020
[\[Paper\]](#)

Interactive Portrait Bokeh Rendering System
Juewen Peng, *Xianrui Luo*, Ke Xian, Zhiguo Cao

ICIP 2021
[\[Paper\]](#)

BokehMe: When Neural Rendering Meets Classical Rendering
Juewen Peng, Zhiguo Cao, *Xianrui Luo*, Hao Lu, Ke Xian, Jianming Zhang

CVPR 2022
[\[Paper\]](#) [\[Code\]](#)

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

ECCV 2022
[\[Paper\]](#) [\[Code\]](#)

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

ICCV 2023
[\[Paper\]](#) [\[Code\]](#)

Selective Bokeh Effect Transformation
Juewen Peng, Zhiyu Pan, Chengxin Liu, *Xianrui Luo*, Huiqiang Sun, Liao Shen, Ke Xian, Zhiguo Cao

CVPRW 2023
[\[Paper\]](#) [\[Code\]](#)

EXPERIENCE

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

Nov 2023-Now

PROJECT

NTIRE 2023 Challenge on Bokeh Effect Transformation (CVPR2023 Workshop) Winner Award	Jun 2023
Vivo Funding Project on Simulation of Bokeh Effect from DSLR I serve as a core member responsible for realistic bokeh synthesis for smartphone photography.	Jan 2023 – Dec 2023
“DigiX Joint Innovation Center of Huawei-HUST” Funding Project I serve as a core member responsible for dual-camera all-in-focus synthesis.	Mar 2021 – Mar 2022
AIM 2020 Challenge on Rendering Realistic Bokeh (ECCV2020 Workshop) Runner Up Award	Aug 2020

AWARDS AND HONORS

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

SKILLS

Programming Language <i>Python, MATLAB, C</i>	Machine Learning Tools <i>PyTorch, OpenCV</i>	English <i>TOEFL 109, GRE 325 (AW 4.0)</i>
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