

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

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.

“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

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

Python, MATLAB, C

Machine Learning Tools

PyTorch, OpenCV

English

TOEFL 109, GRE 325 (AW 4.0)