

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 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
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

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

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

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|------------------------------|---|------------|
| Academic Scholarship | <i>Huazhong University of Science and Technology</i> | 2020-2023 |
| 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*Python, MATLAB, C***Machine Learning Tools***PyTorch, OpenCV***English***TOEFL 109, GRE 325 (AW 4.0)*