Kaizhang Kang

Home Page www.cocoakang.cn
Mobile Phone +86 178 1685 8995 / +1 412 726 1233
Email generous.kkz@gmail.com

Education

Sep. 2018 - June 2023 **Zhejiang University**

Integrated Master and Ph.D. Program in Computer Science
(Supervised by Hongzhi Wu)

Sep. 2014 - June 2018 **Zhejiang University**

B.S. in Computer Science
Honors Degree from Chu Kochen Honors College

Research Interests

I am broadly interested in computational imaging. During my Ph.D. study, I focused on appearance/geometry acquisition & modeling. I developed a series of high-performance acquisition hardware systems from low-level circuit design to high-level control software. Based on proposed differentiable acquisition framework, the published works mainly adress how to efficiently and accurately digitize real objects.

As a postdoctoral researcher in Professor Wolfgang Heidrich's group, I have taken the opportunity to broaden my research into microscopy, snapshot spectral imaging, and other areas of computational imaging.

Looking ahead, I aim to explore novel and unconventional directions in computational imaging, pushing the boundaries of what has previously been considered possible.

Publications

Microscopy & Computational Imaging

- **High-throughput space-time Fourier ptychography for motile microorganisms**

  *Ming Sun** , ***Kaizhang Kang**** , *Yogeshwar Mishra, Wolfgang Heidrich*
  accepted to ***Optics Express***
  * Contributed equally

- **High-Speed Fourier Ptychographic Microscopy System for Live Microorganisms Imaging**

  Kaizhang Kang*, Ming Sun, Yogeshwar Mishra, Wolfgang Heidrich*
  Proc. ***Optica Imaging Congress 2025 (COSI)***

- **Efficient Depth- and Spatially-Varying Image Simulation for Defocus Deblur**

  Xinge Yang, Chuong Nguyen, Wenbin Wang, ***Kaizhang Kang****, Wolfgang Heidrich, Ginger Li*
  ICCV 2025 *Workshop*

- **Latent Space Imaging**

  Matheus Souza, Yidan Zheng, ***Kaizhang Kang****, Yogeshwar Nath Mishra, Qiang Fu, Wolfgang Heidrich*
  Proc. ***CVPR 2025***

Appearance/Geometry Acquisition & Modeling

- **Designing and Fabricating Color BRDFs with Differentiable Wave Optics**

  Yixin Zeng, Kiseok Choi, Hadi Amata, ***Kaizhang Kang****, Wolfgang Heidrich, Hongzhi Wu, Min H. Kim*
  Conditionally accepted to ***SIGGRAPH Asia 2025***

- **Learning Photometric Feature Transform for Free-form Object Scan**

  *Xiang Feng, **Kaizhang Kang**, Fan Pei, Huakeng Ding, Jinjiang You, Ping Tan, Kun Zhou and Hongzhi Wu*
  *IEEE **TVCG**, 31, 9 (Sep. 2025), pp. 6398-6409*

- **Differentiable Dynamic Visible-Light Tomography**

  ***Kaizhang Kang**, Zoubin Bi, Xiang Feng, Yican Dong, Kun Zhou and Hongzhi Wu*
  *Proc. **SIGGRAPH Asia 2023***

- **Neural Reflectance Capture in the View-Illumination Domain**

  ***Kaizhang Kang**, Minyi Gu, Cihui Xie, Xuanda Yang, Hongzhi Wu and Kun Zhou*
  *IEEE **TVCG**, 29, 2 (Feb. 2023), pp. 1450-1462*

- **Learning Efficient Photometric Feature Transform for Multi-view Stereo**

  ***Kaizhang Kang**, Cihui Xie, Ruisheng Zhu, Xiaohe Ma, Ping Tan, Hongzhi Wu and Kun Zhou*
  ICCV 2021

- **Free-form Scanning of Non-planar Appearance with Neural Trace Photography**

  *Xiaohe Ma, **Kaizhang Kang**, Ruisheng Zhu, Hongzhi Wu and Kun Zhou*
  *ACM Trans. Graph. (Proc. **SIGGRAPH 2021**), 40, 4 (Aug. 2021), 124.*

- **Learning Efficient Illumination Multiplexing for Joint Capture of Reflectance and Shape**

  ***Kaizhang Kang**, Cihui Xie, Chengan He, Mingqi Yi, Minyi Gu, Zimin Chen, Kun Zhou and Hongzhi Wu*
  *ACM Trans. Graph. (Proc. **SIGGRAPH Asia 2019**), 38, 6 (Nov. 2019), 165.*

- **Efficient Reflectance Capture Using an Autoencoder**

  ***Kaizhang Kang**, Zimin Chen, Jiaping Wang, Kun Zhou and Hongzhi Wu*
  *ACM Trans. on Graphics (Proc. **SIGGRAPH 2018**), 37, 4 (Aug. 2018), 127.*

Honors & Awards

ACM SIGGRAPH Student Research Competition (2nd Place, Undergraduate Category) 2018

Microsoft Research Asia Fellowship 2021

Lu Zengyong CAD&CG High Technology Award (2nd Place) 2019

Work Experience

Feb. 2024 - Now King Abdullah University of Science and Technology
Postdoc

My main research project is about designing and building a lightweight spectral camera for determining coral health status.

Aug. 2022 - Jan. 2023 Meta Reality Labs
Research Scientist Intern.

The project is to estimate appearance of human head with multi-view images under any lighting conditions.

Skills

- **Deep learning.** I use deep learning in previous work to solve modeling problems for both geometry and appearance, and the algorithms are implemented with Pytorch/Tensorflow.
- **Computer vision & graphics.** My research in the past mainly focuses on computer vision & graphics about how to digitize 3D objects in both high efficiency and high quality manner.
- **Hardware design.** I built hardware prototypes of lightstage and hand-held scanner from scratch, including PCB design, FPGA programming.

Invited Talks

Nov. 2022
Computer Graphics Group (Julie Dorsey & Holly Rushmeier Lab), Yale
Differentiable Acquisition of Appearance & Shape

Mar. 2022
Smart Geometry Processing Group (Niloy Mitra Lab), UCL
Differentiable Acquisition of Appearance & Shape

Dec. 2019
Graphics And Mixed Environment Seminar (Online)
Learning Efficient Illumination Multiplexing for Joint Capture of Reflectance and Shape

Academic Service

Committee Membership SIGGRAPH Asia Technical Communications & Posters Committee (2024, 2025)

Reviewer SIGGRAPH, SIGGRAPH Asia, ICCV, WACV, AAAI, etc.

Languages

English	Proficient
Mandarin	Native
Japanese	Competent

Referees

Name	Hongzhi Wu
Affiliation	State Key Lab of CAD&CG, Zhejiang University
Position	Professor
Homepage	http://hongzhiwu.com
Contact	hwu@acm.org

Name	Kun Zhou
Affiliation	State Key Lab of CAD&CG, Zhejiang University
Position	Cheung Kong Professor, Director of State Key Lab of CAD&CG
Homepage	http://kunzhou.net
Contact	kunzhou@acm.org

Name	Xin Tong
Affiliation	Microsoft Research, Beijing
Position	Principal Researcher, Research Manager
Homepage	https://www.microsoft.com/en-us/research/people/xtong/
Contact	xtong@microsoft.com