

Zi Wang

Phone: (+86)189-6392-0491

Email: zeromakerwz@foxmail.com

Personal webpage: zeromakerplus.github.io

Research Interests

Computational imaging, spectrum reconstruction and deep learning.

Education

Shanghai Institute of Technical Physics, Chinese Academy of Sciences, Shanghai, China

ShanghaiTech University, Shanghai, China

Ph.D, Electronic Engineering, 2019 - 2025(expected)

BeiHang University, Shanghai, China

B.Eng., Electronic Engineering, 2015 - 2019

RESEARCH EXPERIENCE

Non-line-of-sight Imaging

Non-line-of-sight imaging is a technology that enables visualization of objects not directly in the field of view by analyzing light reflections from the surrounding environment, such as walls. The effectiveness of this technology relies heavily on the reconstruction algorithms (Publication #3, #6) and an optimized optical setup (Publication #7).

Neural Miniaturized Spectrometers

Miniaturized spectrometers are crucial in both research and industry. They have recently shown high-accuracy spectral resolution, along with an ultra-small footprint. However, their performance largely depends on the algorithm used to reconstruct the spectrum (Publication #1, #4).

Computational Hyperspectral Imaging

Computational hyperspectral imaging is a technique that offers detailed spectral and spatial data about a scene. It can even capture hyperspectral video using computational algorithms. (Publication #2, #5)

Publication

†: Equal contributions. *: Corresponding authors.

- #1 Jingyi Wang[†], Beibei Pan[†], **Zi Wang[†]**, Jiakai Zhang, Zhiqi Zhou, Lu Yao, Yanan Wu, Wuwei Ren, Jianyu Wang, Jingyi Yu* and Baile Chen*. “Single-pixel p-graded-n junction spectrometers.” Nature Communications(NC). 2024.

- #2 Yang Yang[†], **Zi Wang**[†], Pengyu Wang, Guoliang Tang, Chengyu Liu, Chunlai Li* and Jianyu Wang*. “Robust gas species and concentration monitoring via cross-talk transformer with snapshot infrared spectral imager.” *Sensors and Actuators B: Chemical(SNB)*. 2024.
- #3 Siyuan Shen[†], **Zi Wang**[†], Ping Liu, Zhengqing Pan, Ruiqian Li, Tian Gao, Shiyong Li* and Jingyi Yu*. “Non-line-of-Sight Imaging via Neural Transient Fields.” *IEEE Transactions on Pattern Analysis and Machine Intelligence(TPAMI)*. 2021.
- #4 Zhiyi Xuan, **Zi Wang**, Qingquan Liu, Songlei Huang, Bo Yang, Liyi Yang, Zhiqin Yin, Maobin Xie, Chenlu Li, Jingyi Yu, Shaowei Wang* and Wei Lu. “Short-Wave Infrared Chip-Spectrometer by Using Laser Direct-Writing Grayscale Lithography.” *Advanced Optical Materials(AOM)*. 2022.
- #5 Guoliang Tang, **Zi Wang**, Shijie Liu, Chunlai Li* and Jianyu Wang*. “Real-Time Hyperspectral Video Acquisition with Coded Slits.” *Sensors*. 2022.
- #6 Yanhua Yu, Siyuan Shen, **Zi Wang**, Binbin Huang, Yuehan Wang, Xingyue Peng, Suan Xia, Ping Liu, Ruiqian Li and Shiyong Li*. “Enhancing Non-line-of-sight Imaging via Learnable Inverse Kernel and Attention Mechanisms.” *2023 IEEE/CVF International Conference on Computer Vision (ICCV)*. 2023.
- #7 Pan, Zhengqing, Ruiqian Li, Tian Gao, **Zi Wang**, Siyuan Shen, Ping Liu, Tao Wu, Jingyi Yu and Shiyong Li. “Onsite Non-Line-of-Sight Imaging via Online Calibration.” *IEEE Photonics Journal*. 2022.

Teaching Experience

Digital Signal Processing

Spring 2022

Teaching Assistant, with Prof. Wuwei Ren, at ShanghaiTech University.

(Informal) Talks

Talks on Non-line-of-sight imaging in computational photography course host by Jingji Yu at ShanghaiTech University. (Nov. 2021)

Skills

Python, MATLAB: very familiar.

Optical and imaging setup: familiar.

Circuits and system, Labview: familiar.

Language

Chinese: Native.

English: Good user. IELTS (taken in Sept. 2018) Overall: 7.0. Listening: 6.5, Reading: 8.5, Writing: 6.0, Speaking: 6.0.

Reference

Prof. Jingyi Yu

Deputy Provost, Executive Dean, Professor. School of Information Science and Technology, ShanghaiTech University.

yujingyi@shanghaitech.edu.cn Webpage (86)-021-20685380

Prof. Jianyu Wang

Dean of the Hangzhou Institute for Advanced Study, University of Chinese Academy of Sciences. Researcher at the Shanghai Institute of Technical Physics of the Chinese Academy of Sciences.

jywang@mail.sitp.ac.cn Webpage(Chinese)

Prof. Baile Chen

Associate Professor, ShanghaiTech University.

chenbl@shanghaitech.edu.cn Webpage (86)-021-20685596