Yunfan LU

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RESEARCH INTERESTS: EVENT-BASED VISION

My research focuses on reconstructing imaging systems to make them more efficient. Currently, I aim to develop a series of imaging algorithms that address challenges faced by traditional cameras, *e.g.*, ISP [1,4], HDR [10], low-light enhancement [4], deblurring [2,7], frame interpolation [3,6,11], rolling shutter correction [2,12], and super-resolution [6]. Looking ahead, my broader goal is to create a fully integrated imaging system, starting with joint optimization at the sensor design and imaging algorithms.

EDUCATION

Hong Kong University of Science and Technology (Guangzhou) — Guangzhou, China
Ph.D., AI Thrust, supervised by Prof. Hui XIONG (Fellow of IEEE, AAAI and AAAS) — *01/2022 – 05/2026 (expected)*

University of Chinese Academy of Sciences — Beijing, China
Master Degree, School of Artificial Intelligence, supervised by Prof. Jun XIAO — *09/2017 – 07/2020*

INRIA and Université Paris-Saclay — Paris, France
Summer School Student, Computer Science, supervised by Prof. Jing-Rebecca LI — *07/2019 – 08/2019*

Nanjing University of Science and Technology — Nanjing, China
Bachelor Degree, School of Computer Science — *09/2013 – 06/2017*

PUBLICATION LIST (GOOGLE SCHOLAR LINK)

1. **Yunfan LU**, Yanlin Qian, Ziyang Rao, Junren Xiao, Liming Chen, Hui Xiong; **RGB-Event ISP: The Dataset, Benchmark and Direction**, *ICLR 2025*

2. Shiyang Zhou, Haijin Zeng, **Yunfan LU**, Tong Shao, Ke Tang, Yongyong Chen, Jie Liu, Jingyong Su **Binarized Semantic Mamba-Transformer for Lightweight Quad Bayer HybridEVS Demosaicing**, *CVPR 2025*

3. **Yunfan LU**, Guoqiang Liang, Yusheng Wang, Lin Wang, Hui Xiong; **UniINR: Unifying Spatial-Temporal INR for RS Video Correction, Deblur, and Interpolation with an Event Camera**, *ECCV 2024*

4. Zipeng Wang, **Yunfan LU**, Lin Wang; **Revisit Event Generation Model: Self-Supervised Learning of Event-to-Video Reconstruction with Implicit Neural Representations**, *ECCV 2024*

5. **Yunfan LU**, Yijie Xu, Wenzong MA, Weiyu Guo, Hui Xiong; **Event Camera Demosaicing via Swin Transformer and Pixel-focus Loss**, *CVPRW 2024*

6. Guoqiang Liang, Kanghao Chen, Hangyu Li, **Yunfan LU**, Lin Wang; **Towards Robust Event-guided Low-Light Image Enhancement: A Large-Scale Real-World Event-Image Dataset and Novel Approach**, *CVPR 2024*

7. **Yunfan LU**, Zipeng Wang, Minjie Liu, Hongjian Wang, Lin Wang; **Learning Spatial-Temporal Implicit Neural Representations for Event-Guided Video Super-Resolution**, *CVPR 2023*

8. Yusheng Wang, **Yunfan LU**, Ye Gao, Lin Wang, Zhihang Zhong, Yinqiang Zheng, Atsushi Yamashita; **Efficient video deblurring guided by motion magnitude**, *ECCV 2022*

9. **Yunfan LU**, Yifan Hu, Jun Xiao, Lupeng Liu, Long Zhang, Ying Wang; **Three-Dimensional Model of the Moon with Semantic Information of Craters Based on Chang' e Data**, *Sensors 2021*

10. **Yunfan LU**, Yifan Hu, Jun Xiao; **Help LabelMe: A fast auxiliary method for labeling image and using it in ChangE' s CCD data**, *Image and Graphics International Conference, ICIG 2019*

Under Review List ([Google Scholar Link](#))

11. **Yunfan LU**, Xiaogang Xu, Hao LU, Yanlin Qian, Bin Yang, Junyi Li, Qianyi Cai, Weiyu Guo, Hui Xiong; **SEE: See Everything Every Time - Broader Light Range Image Enhancement via Events**, *underreview*

12. **Yunfan LU**, Zipeng Wang, Yusheng Wang, Hui Xiong; **HR-INR: Event-guided Continuous Space-Time Video Super-Resolution via Holistic-Regional Implicit Neural Representations**, *underreview*

13. **Yunfan LU**, Guoqiang Liang, YiranShen, Lin Wang; **Remember Good Moment: Streaming Slow Motion from a Multi-Sensor-equipped UAV in Virtual Reality**, *underreview*

14. **Yunfan LU**, Yiqi Lin, Hao Wu, Yunhao Luo, Xu Zheng, Hui Xiong, Lin Wang; **Priors in Deep Image Restoration and Enhancement: A Survey**, *underreview*

15. Pengyuan Zhou, Jinjing Zhu, Yiting Wang, **Yunfan LU**, Zixiang Wei, Haolin Shi, Yuchen Ding, Yu Gao, Qinglong Huang, Yan Shi, Ahmad Alhilal, Lik-Hang Lee, Tristan Braud, Pan Hui, Lin Wang; **Vetaverse: Technologies, applications, and visions toward the intersection of metaverse, vehicles, and transportation systems**, *underreview*

Scholarships and Honours

1. Scholarship of Summer School by INRIA and Institut Français in 2019
2. **National Scholarship** for 2018 academic year (**Top 0.8%**)
3. **Silver Medal**, The ACM-ICPC Asia Regional Contest 2017 Beijing Site (rank: 34/168)
4. **Bronze Medal**, The CCF-CCPC China Contest 2017 Qianhuangdao Site (rank: 51/276)
5. **First Prize**, LanQiao Cup JiangSu Province 2016 Contest (rank: 8/467)
6. **Bronze Medal**, The Programming World Cup Final by SaiKr (rank: 31/201)

Work Experience

HKUST GZ, Teaching Assistant — GuangZhou, China
*Assisted in courses, **Data Mining** and **Autonomous AI**.* — *09/2023 - 12/2024*

HONOR, Senior Algorithm Engineer — Beijing, China
Sensor and Algorithm Solutions Department, Led by Dr. Ye GAO — *04/2021 - 01/2022*

DJI, Algorithm Engineer — ShenZhen, China
Machine Learning Department, Led by Dr. MengLong ZHU — *07/2020 - 04/2021*

Detect the impact crater and rebuild the lunar, Master Thesis Research — Beijing, China
Artificial Intelligence Institute in UCAS — *02/2019 - 06/2020*

Tencent, Research Intern — Beijing, China
Multimedia Laboratory in Tencent, Lead by Dr. Shan LIU — *09/2018 - 04/2019*

Programming Skills

- **Languages**: C/C++, Java, Python, Bazel/CMake, Matlab, HTML CSS JavaScript

- **Technologies**: CUDA, PyTorch, MxNet, TensorFlow, LaTex, Mediapipe