YUNHAO LI

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ABOUT

I'm currently a Postdoc Research Fellow at the University of Hong Kong. I received my PhD from Zhejiang University (jointly with Westlake University). I received my Master's degree from Northwestern University at Evanston, USA, and bachelor's degree from Xi'an Jiaotong University at Xi'an, China. My past and current research focus on Computer Vision, Computational Imaging, 3D Reconstruction and Robotics. So far, I have 12 journal and conference papers (9 of them published as first or co-first author).

EDUCATION

Postdoc Research Fellow: The University of Hong Kong 09/2026-Now
Major: Electrical and Computer Engineering

Doctor of Philosophy: Zhejiang University (jointly with Westlake University) 09/2022-06/2026
Major: Computer Science

Master of Science: Northwestern University, *Evanston, IL, USA* 09/2019-03/2021
Major: Computer Engineering, **GPA: 3.9/4.0**

Bachelor of Engineering: Xi'an Jiaotong University, *Shaanxi, China* 08/2015-06/2019
Major: Information Engineering, **GPA: 3.6/4.0**

Honors & Awards: Undergraduate Scholarship for 2016-2017, 2017-2018 academic year 12/2018
Xi'an Jiaotong University Outstanding Undergraduate Student 12/2017
2016 RoboCup China Open: **Bronze Medal (3rd Place)** 04/2016

PUBLICATIONS

1. **SCINeRF: Neural Radiance Fields from a Snapshot Compressive Image**
   Yunhao Li, Xiaodong Wang, Ping Wang, Xin Yuan, Peidong Liu
   2024 IEEE Conference on Computer Vision and Pattern Recognition (CVPR) ***(Highlight paper, acceptance rate: 2.8%)***
2. **DerainNeRF: 3D Scene Estimation with Adhesive Waterdrop Removal**
   Yunhao Li, Jing Wu, Lingzhe Zhao, Peidong Liu
   2024 IEEE International Conference on Robotics and Automation (ICRA)
3. **SCIGaussian-D: Dynamic Scene Reconstruction from a Single Snapshot Compressive Image**
   Yunhao Li, Yuze Yang, Yanan Hu, …, Xin Yuan, Peidong Liu
   2026 International Conference on 3D Vision (3DV)
4. **SCIPS: Single-Shot Photometric Stereo from a Snapshot Compressed Multispectral Image**
   Yunhao Li, Yanan Hu, Xiaodong Wang, …, Xin Yuan, Peidong Liu
   2026 IEEE International Conference on Image Processing (ICIP) ***(Oral paper)***
5. **DanqingScan: Low-cost 3D Scanning for Traditional Chinese Painting Analysis**
   Yunhao Li, Xing Liu, Yuchen Wu, Mingyang Xu, Wei Zhang, Yi Zhang, Wei Chen
   Visual Informatics
6. **TI-3DGS: 3D Thermal Reconstruction via Thermal Imaging-guided 3D Gaussian Splatting**
   Yong Tang*, **Yunhao Li***, Xiaodong Wang, Qiang Song, Bing Qin, Xiaocheng Feng, Xin Yuan
   2026 IEEE International Conference on Robotics and Automation (ICRA)
7. **SCI-Gaussian: Optimizing 3D Gaussian Radiance Field from a Snapshot Compressive Image**
   Xiaoyue Li*, **Yunhao Li***, Xiaodong Wang, Xin Yuan, Mark Butala, Gaoang Wang
   2025 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)
8. **SkinScan: Low-Cost 3D-Scanning for Dermatologic Diagnosis and Documentation**
   Merlin Nau, Florian Schiffers, **Yunhao Li**, Bingjie Xu, …, Oliver Cossairt
   2021 IEEE International Conference on Image Processing (ICIP)
9. **A Low-Cost Solution for 3D Reconstruction of Large-Scale Specular Objects**

Yunhao Li, Chia-Kai Yeh, Bingjie Xu, …, Oliver Cossairt
Computational Optical Sensing and Imaging (COSI). Optical Society of America, 2021

10. **A Method of Partially Overlapping Point Clouds Registration Based on Differential Evolution Algorithm**
Xuetao Zhang, Ben Yang, **Yunhao Li**, Xuewei Wang, Wanxu Zhang,
PLOS ONE
11. **A Method of Solving the SFM Scale Factor Based on Monocular Camera and a Single Laser**
Yunhao Li, Jifa Sun, Ying Wang, Xuetao Zhang
2017 Chinese Automation Congress (CAC)
12. **Learning Radiance Fields from a Single Snapshot Compressive Image**
Yunhao Li, Xiang Liu, Xiaodong Wang, Xin Yuan, Peidong Liu
Submitted to International Journal of Computer Vision (IJCV)

RESEARCH EXPERIENCE

Zhejiang University and Westlake University 09/2022-06/2026
***Supervisor**: Prof. Peidong Liu, Prof. Xin Yuan, Prof. Wei Chen*

i. 3D Scene Deraining

- Designed a 3D scene estimation framework with waterdrop removal capabilities.
- A paper published on *IEEE ICRA 2024*.

ii. Single Image to 3D based on Snapshot Compressive Imaging

- Designed a series of 3D scene acquisition and reconstruction frameworks based on snapshot compressive imaging (SCI).
- A paper published on *IEEE/CVF CVPR 2024* ***(Highlight paper, acceptance ratio: 2.8%)***.
- Two papers published on *IEEE ICASSP 2025 and 3DV 2026.*

iii. 3D Reconstruction based on Thermal Images

- Designed a high-quality pure thermal 3D reconstruction method based on 3D Gaussian Splatting (3DGS).
- A paper accepted by *IEEE ICRA 2026.*

Northwestern University Computational Photography Lab 09/2019-03/2021
***Supervisor**: Prof. Oliver Cossairt, Prof. Aggelos Katsaggelos*

i. Large-Scale Specular Object 3D Reconstruction

- Designed and built the hardware and software of a low-cost structural light 3D reconstruction system for large-scale specular objects based on Deflectometry.
- A paper published on *Imaging and Applied Optics 2021, OSA Technical Digest.*

ii. Human Skin 3D-Scanning for Dermatologic Diagnosis

- Designed a low-cost 3D scanning system for human skin based on 3D gradient illumination.
- A paper published on *2021 IEEE International Conference on Image Processing (ICIP)*

2018 UCLA Cross-disciplinary Scholars of Science and Technology (CSST) 07/2018-09/2018
*Highly Competitive Research Internship Program (**~10%** student admitted from top 20 universities in China and Japan)*
***Lab**: UCLA Biomechatronics Lab in Dept. of Mechanical and Aerospace Engineering; **Supervisor**: Prof. Veronica Santos*

- Developed a machine learning-based robot tactile sensor calibration algorithm.
- Analyzed human eye gaze point distribution during different subtasks.

Institute of Artificial Intelligence and Robots, Xi'an Jiaotong University 09/2016-06/2019
***Supervisor**: Prof. Xuetao Zhang*

- Designed a method of Structure from Motion (SfM) method with physical scale factor retrieval using monocular camera and single laser emitter.
- Designed a point cloud registration method based on differential evolution algorithm.
- Two papers published on *2017 Chinese Automation Congress* and journal *PLOS ONE*.

ENGLISH PROFICIENCY

TOEFL: 111 (R: 28, L: 28, S: 27, W: 28)
GRE: Verbal: 156, Quantitative: 170, Analytical Writing: 4.0