

Yunping Zhang (Sherry)

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Education

The University of Hong Kong , Hong Kong SAR Ph.D. in Electrical and Electronic Engineering	2020/09 – Present
<ul style="list-style-type: none">• Research Areas: Computational imaging, digital holography, physics-informed learning, generative modeling	
Imperial College London , London, United Kingdom M.Sc. (Distinction) in Electrical Engineering	2018/09 – 2019/06
University of Glasgow , Glasgow, United Kingdom B.Eng. (1st Honor) in Electronic Engineering	2016/08 – 2018/07
University of Electronic Science and Technology of China , Chengdu, China B.Eng. in Electronic Engineering (GPA 3.92/4.00)	2014/08 – 2016/07

Research and Work Experience

Imaging Systems Lab , The University of Hong Kong <i>Ph.D. Researcher</i>	2020/09 – Present
<ul style="list-style-type: none">• Project: End-to-End Deep Learning for Holographic Reconstruction<ul style="list-style-type: none">– Developed a one-stage network (OSNet) to reconstruct 3D particle distributions from a single hologram in one feed-forward process.– Demonstrated the speed and simplicity of end-to-end deep learning approaches compared to traditional methods.• Project: Physics-Aware Holographic Imaging with Quanta Image Sensors<ul style="list-style-type: none">– Integrated a physical imaging model into neural networks via algorithm unrolling, leveraging quanta image sensors (QIS) for photon-starved holography.– Combined model-based and data-driven methods to enhance holographic reconstruction in low-photon environments.• Project: Unsupervised Digital In-line Holographic Reconstruction with Diffusion Priors<ul style="list-style-type: none">– Proposed an unsupervised reconstruction method for snapshot DIH using pre-trained diffusion priors with physics-based guidance.– Enabled accurate hologram reconstruction without requiring paired training datasets.• Project: Robust Reconstruction Under Physical Perturbations for Holographic Imaging<ul style="list-style-type: none">– Addressed holographic reconstruction under physical perturbations by parameterizing the forward model and adding a differentiable network for distance estimation.– Jointly optimized object reconstruction and propagation distance to improve robustness against deterministic perturbations.	
Meituan–Dianping , Beijing, China <i>Algorithm Engineer</i>	2020/02 – 2020/06
<ul style="list-style-type: none">• Developing advanced algorithms for map-based road network data extraction.• Supplement and improve road network data in the map database.	
MatchLab Research Group , London, United Kingdom <i>Research Assistant</i>	2019/03 – 2019/09
<ul style="list-style-type: none">• Develop a novel vehicle re-identification approach using multi-block features, integrating information fusion from intermediate layers and multi-stage supervision into a fully convolutional neural network.• Publish the results in the IET 9th International Conference on Imaging for Crime Detection and Prevention.	

Teaching Experience

Teaching Assistant at The University of Hong Kong for the following courses:

- ELEC 8503, Fourier transform and its applications Fall 2022 & Fall 2023
- ELEC 7078, Advanced Topics in EEE Spring 2022
- ELEC 3644, Advanced Mobile Apps Development Fall 2021
- ELEC 6080, Telecommunications Systems and Management Fall 2020

Publications

Journals

- **Robust holographic imaging for real-world applications with joint optimization**, Yunping Zhang, Edmund Y. Lam. *Optics Express*, 33(3), 2025.
- **Advanced optical imaging technologies for microplastics identification: Progress and challenges**, Yanmin Zhu, Yuxing Li, Jianqing Huang, Yunping Zhang, et al. *Advanced Photonics Research*, 5(11), 2024.
- **Single-shot inline holography using a physics-aware diffusion model**, Yunping Zhang, Xihui Liu, Edmund Y. Lam. *Optics Express*, 32(6), 2024.
- **Photon-starved snapshot holography**, Yunping Zhang, Stanley H. Chan, Edmund Y. Lam. *APL Photonics*, 8(5), 2023.
- **Holographic 3D particle reconstruction using a one-stage network**, Yunping Zhang, Yanmin Zhu, Edmund Y. Lam. *Applied Optics*, 61(5), 2022.

Conference Proceedings

- **Photon-Limited imaging with quanta image sensors via an unsupervised learning framework**, Haosen Liu, Yunping Zhang, Edmund Y. Lam. *IEEE MLSP*, 2024.
- **Overcoming deterministic perturbations in holographic reconstruction**, Yunping Zhang, Edmund Y. Lam. *Optica Digital Holography*, 2024.
- **Single-shot digital holography with improved twin-image noise suppression using a diffusion-based generative model**, Yunping Zhang, Xihui Liu, Edmund Y. Lam. *Computational Optical Imaging*, 2024.
- **Quantifying particle volumes with photon-counting digital holography**, Yunping Zhang, Jianqing Huang, Yanmin Zhu, et al. *Optica Digital Holography*, 2023.
- **Material analysis with polarization holography and machine learning**, Yanmin Zhu, Yuxing Li, Jianqing Huang, Yunping Zhang, et al. *Optica Digital Holography*, 2023.
- **Polarization-sensitive digital holography for microplastic identification through scattering media**, Jianqing Huang, Yanmin Zhu, Yuxing Li, Yunping Zhang, et al. *Optica Digital Holography*, 2023.
- **Enabling Low-light Digital Holography with a Quanta Image Sensor**, Yunping Zhang, Edmund Y. Lam. *Digital Holography and 3D Imaging*, 2022.
- **Recovery of 3D particles distribution from digital hologram using a one-stage detection network**, Yunping Zhang, Edmund Y. Lam. *Holography, Diffractive Optics, and Applications XI*, 2021.

Awards and Fellowships

HKU Dissertation Year Fellowship	2024 – 2025
HKU Presidential PhD Scholarship	2020 – 2024
The Bauchop Lindsay Halliday Engineering prize - UofG	2018
Major Scholarship for Outstanding Academic Performance (Top 5%) - UESTC	2017

Extracurricular Activities

Vice-President at Postgraduate Student Association, HKU	2021 – 2022
Secretary of Student Welfare Office at Postgraduate Student Association, HKU	2020 – 2021
Senior Member of Imperial Cross Country & Athletics Club, ICL	2018 – 2019
Volunteer for Sea Turtle Protection Program, Bali, Indonesia	2016/08

Skills

Programming: Python (PyTorch, TensorFlow, Pandas, GeoPandas), Matlab, C++

Software: OpenSCAD, LaTeX, Git, Blender, Adobe Photoshop

Languages: Mandarin (Native), English (Fluent), Cantonese (Basic)