Yunping Zhang (Sherry)

ypzhang96@outlook.com | +852 93544738

Education

The University of Hong Kong, Hong Kong SAR — Sept 2020 – Present
Ph.D. in Electrical and Electronic Engineering

- Research Areas: Computational imaging, digital holography, physics-informed learning, generative modeling

Imperial College London, London, United Kingdom — Sept 2018 – Jun 2019
M.Sc. (Distinction) in Electrical Engineering

University of Glasgow, Glasgow, United Kingdom — Aug 2016 – Jul 2018
B.Eng. (1st Honor) in Electronic Engineering

University of Electronic Science and Technology of China, Chengdu, China — Aug 2014 – Jul 2016
B.Eng. in Electronic Engineering

Research and Work Experience

Imaging Systems Lab, The University of Hong Kong — Sept 2020 – Present
Ph.D. Researcher

- Project: End-to-End Deep Learning for Holographic Reconstruction
  - 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
  - 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
  - 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
  - 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 — Feb 2020 – Jun 2020
Algorithm Engineer

- 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 — Mar 2019 – Sept 2019
Research Assistant

- 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	Aug 2016

Skills

Programming: Python (PyTorch, TensorFlow, Pandas, GeoPandas), Matlab, C++
Software: OpenSCAD, LaTex, Git, Blender, Docker
Languages: Mandarin (Native), English (Fluent), Cantonese (Basic)