

# CAO, Wen (曹雯)

✉ wencao2ty@connect.hku.hk | 🌐 <https://wencao2025.github.io>

## EDUCATION

### The University of Hong Kong (HKU)

2025.05 - Present

D.Eng. in Electrical and Electronic Engineering

**Advisor:** Prof. *Evan Peng*

### Zhejiang University (ZJU)

2022.09 - 2025.03

M.Eng. in Optical Engineering

**Advisor:** Prof. *Cuifang Kuang*

### Zhejiang University (ZJU)

2018.09 - 2022.06

B.Eng. in Opto-Electronics Information Science and Engineering

**Advisor:** Prof. *Cuifang Kuang*

- GPA: 3.94/4.0

## PUBLICATION

1. **Cao, W.**, Bai, L., Tao, S., Tian, Z., Xu, Y., Kuang, C., Liu, X. (2025). Tilt-corrected reflective ptychography based on automatic differentiation. *Optics and Laser Technology*, 185, 112419. DOI: <https://doi.org/10.1016/j.optlastec.2025.112419>
2. **Cao, W.**, Bai, L., Xu, Y., Kuang, C., Liu, X. (2025). Fast autofocusing strategy for phase retrieval based on statistical gradient optimization. *Optics and Lasers in Engineering*, 184, 108636. DOI: <https://doi.org/10.1016/j.optlaseng.2024.108636>
3. **Cao, W.**, Bai, L., Tao, S., Tian, Z., Xu, Y., Kuang, C., Liu, X. (2024). Optimal phase mask design for coherent modulation imaging by deep learning. *Optics and Laser Technology*, 176, 110951. DOI: <https://doi.org/10.1016/j.optlastec.2024.110951>
4. Bai, L., **Cao, W.**, Tao, S., Tian, Z., Xu, Y., Kuang, C., Liu, X. (2024). Single-shot multi-wavelength coherent diffractive imaging based on sparse representation and modulation optimization. *Applied Physics Letters*, 124(18). DOI: <https://doi.org/10.1063/5.0194876>
5. Xu, Y., Sun, Y., Wu, H., **Cao, W.**, Bai, L., Tao, S., ... Liu, X. (2024). Regularized deconvolution for structured illumination microscopy via accelerated linearized ADMM. *Optics and Laser Technology*, 169, 110119. DOI: <https://doi.org/10.1016/j.optlastec.2023.110119>

## AWARD/HONOR

- **National Scholarship**, Ministry of Education of P.R. China (**Top 0.2% across China**) 2024
- ZJU Award of Honor for Graduate 2023, 2024
- ZJU Graduate with Merit A Performance 2023, 2024
- ZJU Lbtek Optics Scholarship 2023, 2024
- ZJU/Zhejiang Provincial Outstanding Graduate 2022

## PATENT

1. Kuang, C., **Cao, W.**, Xu, Y., Liu, X., ... Tian, Z. (2023). A Defect Detection System and Method for Extreme Ultraviolet Lithography Mask Based on Photon Sieve. (**No.202311333714X, Granted**)
2. **Cao, W.**, Xu, Y., Kuang, C., Bai, L., ... Liu, X. (2022). An Extreme Ultraviolet Ptychography Method Based on Random Phase Modulation. (**No.2022116235603**)
3. Xu, Y., Kuang, C., **Cao, W.**, Tao, S., ... Liu, X. (2022). A Non-Line-of-Sight Imaging System and Method Based on Spectral and Spatio-Temporal Dual Encoding. (**No.202211624120X**)

4. Xu, Y., Kuang, C., **Cao, W.**, Tao, S., ... Liu, X. (2022). A Non-Line-of-Sight Imaging System Based on Multi-channel Parallel Detection. **(No.2022116180456)**

5. Bao, Y., Huang. L., **Cao, W.**, Wang, K. (2021). An Intelligent Smartphone-Compatible Lossless Sugar Content Detection Device and Its Detection Method. **(No.2021107320231, Granted)**

RESEARCH EXPERIENCE

- State Key Laboratory of Extreme Photonics and Instrumentation Zhejiang University**
- 2024.06 - Present
  - Advisor: Prof.Cuifang Kuang and Dr.Yueshu Xu
  - Topic: Physics-informed self-supervised phase retrieval in low light imaging.
- State Key Laboratory of Extreme Photonics and Instrumentation Zhejiang University**
- 2024.03 - 2024.06
  - Advisor: Prof.Cuifang Kuang and Dr.Yueshu Xu
  - Topic: Fast autofocusing for phase retrieval using statistical optimization.(Published)
- State Key Laboratory of Extreme Photonics and Instrumentation Zhejiang University**
- 2023.10 - 2024.03
  - Advisor: Prof.Cuifang Kuang and Dr.Yueshu Xu
  - Topic:Tilt-corrected reflective pty- chography based on automatic differentiation.(Published)
- State Key Laboratory of Optics Zhejiang University**
- 2022.09 - 2023.10
  - Advisor: Prof.Cuifang Kuang and Dr.Yueshu Xu
  - Topic:Optimal modulation design in CMI based on deep learning.(Published)
- State Key Laboratory of Optics Zhejiang University**
- 2021.09 - 2022.06
  - Advisor: Prof.Cuifang Kuang and Dr.Yueshu Xu
  - Topic: Non-line-of-sight imaging using ADMM and deep learning.

SKILLS

**Language** English (TOEFL: 109), Mandarin (Native)

**Software** Python, MATLAB, PyTorch, TensorFlow, LabVIEW

EXTRACURRICULAR ACTIVITIES

<b>Volunteer Work</b>	Astronomy Club Teaching Activities at Qiu Shi Primary School; Summer Music Festival at Zhejiang University; Anniversary Celebration of the College of Optical Science and Engineering at Zhejiang University; Guide of Xiaoying Lane; Reading Activity: ‘Embrace Youth’; ‘Traditional Culture Construction Week’; ‘Create Youth’ Entrepreneurship Competition; Yunfeng Freshman Sports Meeting.
<b>Sports/Art</b>	Dance Competition at Zhejiang University; Choral Competition at Zhejiang University.
<b>Organization/Club</b>	Media Center of the Student Union of the College; News and Information Department in Qiushi Chao; Advocacy group in Zhejiang University Esports Association.