Curriculum Vitae

Dr ZHOU Lina

Department of Electrical and Electronic Engineering,

The Hong Kong Polytechnic University, Hong Kong SAR

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Education Background

09/2017–09/2021   **The Hong Kong Polytechnic University**

- ➢ **Department:** Electronic and Information Engineering
- ➢ **Research Area**: Optical imaging, Artificial Intelligence in Photonics
- ➢ **Degree:** Ph.D. Degree
- ➢ **Supervisors:** Dr CHEN Wen and Prof. YU Changyuan

09/2014–06/2017   **Zhejiang University, China**

- ➢ **Department:** College of Optical Science and Engineering
- ➢ **Research Area:** Nanophotonics
- ➢ **Degree:** Master Degree
- ➢ **Supervisor:** Prof. QIU Min

09/2010–06/2014   **Changchun University of Science and Technology, China**

- ➢ **Department:** Faculty of Science
- ➢ **Major:** Physics
- ➢ **Degree:** Bachelor Degree

Professional Experience

08/2021–Present   **The Hong Kong Polytechnic University**

- ➢ **Department:** Electronic and Information Engineering
- ➢ **Position:** Postdoctoral Fellow

09/2020–08/2021   **The Hong Kong Polytechnic University**

- ➢ **Department:** Electronic and Information Engineering
- ➢ **Position:** Part-time Research Associate

Research Interests

- ➢ Optical Imaging
- ➢ Information Photonics
- ➢ Artificial Intelligence in Photonics
- ➢ Optical Encryption and Attacking

Scholarships and Awards

[1] 09/2017-09/2020, Full Scholarships by The Hong Kong Polytechnic University, Hong Kong

[2] 09/2014-06/2017, Academic Scholarships by Zhejiang University, China

[3] 01/2014, Second-class Scholarship for Outstanding Students by Changchun University of Science and Technology, China

[4] 09/2013, Excellent Student Awards by Changchun University of Science and Technology, China

[5] 09/2014, 01/2014, 09/2013, 01/2013, Wang Daheng Institute of Science and Technology Special Scholarship by Changchun University of Science and Technology, China

[6] 09/2014, 09/2013, 01/2013, 09/2012, 01/2012, 09/2011, 01/2011, First-class Scholarship for Outstanding Students by Changchun University of Science and Technology, China

[7] 09/2012, China National Scholarship by Ministry of Education of the People's Republic of China, China

[8] 09/2012, National College Students English Competition 2nd prize by Union of National English Competition for College Students, China

[9] 01/2011, Excellent Student Cadre by Changchun University of Science and Technology, China

Five Most Representative Journal Papers

Google Scholar: https://scholar.google.com.hk/citations?user=HYJKgg4AAAAJ&hl=zh-CN&oi=ao

[1] Yin Xiao, **Lina Zhou**, and Wen Chen, "High-efficiency and high- fidelity optical signal transmission in free space through scattering media using 2D random amplitude-only patterns and look- up table," Optics and Lasers in Engineering, 155, 107059 (5pp), 2022. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

[2] Yin Xiao, **Lina Zhou**, Zilan Pan, Yonggui Cao, Mo Yang, and Wen Chen, "Analog ghost hidden in 2D random binary patterns for free-space optical data transmission," Optics and Lasers in Engineering, 150, 106880 (5pp), 2022. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

[3] **Lina Zhou**, Yin Xiao, and Wen Chen, "Learning-based optical authentication in complex scattering media," Optics and Lasers in Engineering, 141, 106570 (10pp), 2021. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

[4] Yin Xiao, **Lina Zhou**, and Wen Chen, "Wavefront control through multi- layer scattering media using single-pixel detector for high-PSNR optical transmission," Optics and Lasers in Engineering, 139, 106453(6pp), 2021. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

[5] **Lina Zhou**, Yin Xiao, and Wen Chen, "Vulnerability to machine learning attacks of optical encryption based on diffractive imaging," Optics and Lasers in Engineering, 125, 105858 (6pp), 2020. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

A Full List of Refereed Journal Papers

[1] **Lina Zhou**, Yin Xiao, and Wen Chen, "High-resolution self-corrected single-pixel imaging through dynamic and complex scattering media," Optics Express, Accepted and under Production, 2023. (Impact factor: 3.833; Web of Science (Thomson Reuters JCR): Q2, 28 of 101; Category: Optics).

[2] **Lina Zhou**, Yin Xiao, and Wen Chen, "High-visibility orthonormalized ghost imaging with self-correction through dynamic and complex scattering media at low sampling ratios," Applied Physics Letters, Under review, 2023. (Impact factor: 3.971; Web of Science (Thomson Reuters JCR): Q2, 50 of 161; Category: Physics, Applied).

[3] **Lina Zhou**, Yin Xiao, and Wen Chen, "High-contrast gradient ghost imaging through dynamic and complex scattering media," Optics Letters, Under review, 2023. (Impact factor: 3.56; Web of Science (Thomson Reuters JCR): Q2, 32 of 101; Category: Optics).

[4] **Lina Zhou**, Yin Xiao, and Wen Chen, "Gradual ghost imaging of moving objects through dynamic and complex scattering media," Optics Letters, In preparation, 2023. (Impact factor: 3.56; Web of Science (Thomson Reuters JCR): Q2, 32 of 101; Category: Optics).

[5] Zilan Pan, Yin Xiao, Yonggui Cao, **Lina Zhou**, and Wen Chen, "Optical data transmission through highly dynamic and turbid water using dynamic scaling factors and single-pixel detector," Optics Express, Accepted and in Press, 2022. (Impact factor: 3.833; Web of Science (Thomson Reuters JCR): Q2, 28 of 101; Category: Optics).

[6] Yonggui Cao, Yin Xiao, Zilan Pan, **Lina Zhou**, and Wen Chen, "Physically-secured ghost diffraction and transmission," IEEE Photonics Technology Letters, 34 (22), 1238 – 1241, 2022. (Impact factor: 2.414; Web of Science (Thomson Reuters JCR): Q3, 56 of 101; Category: Optics).

[7] Yonggui Cao, Yin Xiao, Zilan Pan, **Lina Zhou**, and Wen Chen, "High-fidelity temporally-corrected transmission through dynamic smoke via pixel-to-plane data encoding," Optics Express, 30 (20), 36464 – 36477, 2022. (Impact factor: 3.833; Web of Science (Thomson Reuters JCR): Q2, 28 of 101; Category: Optics).

[8] Yin Xiao, **Lina Zhou**, and Wen Chen, "High-resolution ghost imaging through complex scattering media via a temporal correction," Optics Letters, 47 (15), 3692 – 3695, 2022. (Impact factor: 3.56; Web of Science (Thomson Reuters JCR): Q2, 32 of 101; Category: Optics).

[9] Zilan Pan, Yin Xiao, Yonggui Cao, **Lina Zhou**, and Wen Chen, "Accurate optical information transmission through thick tissues using zero-frequency modulation and single-pixel detection," Optics and Lasers in Engineering, 158, 107133 (7pp), 2022. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

[10] Yonggui Cao, Yin Xiao, Zilan Pan, **Lina Zhou**, and Wen Chen, "Direct generation of 2D arrays of random numbers for high- fidelity optical ghost diffraction and information transmission through scattering media," Optics and Lasers in Engineering, 158, 107141 (8pp), 2022. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

[11] Yin Xiao, **Lina Zhou**, and Wen Chen, "High-efficiency and high- fidelity optical signal transmission in free space through scattering media using 2D random amplitude-only patterns and look- up table," Optics and Lasers in Engineering, 155, 107059 (5pp), 2022. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

[12] Yin Xiao, **Lina Zhou**, Zilan Pan, Yonggui Cao, and Wen Chen, "Physically-secured high-fidelity free-space optical data transmission through scattering media using dynamic scaling factors," Optics Express, 30 (5), 8186 – 8198, 2022. (Impact factor: 3.833; Web of Science (Thomson Reuters JCR): Q2, 28 of 101; Category: Optics).

[13] **Lina Zhou**, Yin Xiao, Zilan Pan, Yonggui Cao, and Wen Chen, "Visual cryptography using binary amplitude-only holograms [Invited]," Frontiers in Photonics, 2, 821304 (10pp), 2022.

[14] Yin Xiao, **Lina Zhou**, Zilan Pan, Yonggui Cao, and Wen Chen, "Physically- enhanced ghost encoding," Optics Letters, 47 (2), 433 – 436, 2022. (Impact factor: 3.56; Web of Science (Thomson Reuters JCR): Q2, 32 of 101; Category: Optics).

[15] Yin Xiao, **Lina Zhou**, Zilan Pan, Yonggui Cao, Mo Yang, and Wen Chen, "Analog ghost hidden in 2D random binary patterns for free-space optical data transmission," Optics and Lasers in Engineering, 150, 106880 (5pp), 2022. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

[16] Zilan Pan, Yin Xiao, Yonggui Cao, **Lina Zhou**, and Wen Chen, "Optical analog-signal transmission and retrieval through turbid water," Applied Optics, 60 (34), 10704 – 10713, 2021. (Editors' Pick) (Impact factor: 1.905; Web of Science (Thomson Reuters JCR): Q3, 70 of 101; Category: Optics).

[17] Zilan Pan, Yin Xiao, **Lina Zhou**, Yonggui Cao, Mo Yang, and Wen Chen, "Non-line-of- sight optical information transmission through turbid water," Optics Express, 29 (24), 39498 – 39510, 2021. (Impact factor: 3.833; Web of Science (Thomson Reuters JCR): Q2, 28 of 101; Category: Optics).

[18] Zilan Pan, Yin Xiao, **Lina Zhou**, Yonggui Cao, Mo Yang, and Wen Chen, "Non-line-of- sight optical information transmission through turbid water," Optics Express, 29 (24), 39498 – 39510, 2021. (Impact factor: 3.833; Web of Science (Thomson Reuters JCR): Q2, 28 of 101; Category: Optics).

[19] **Lina Zhou**, Yin Xiao, Zilan Pan, Yonggui Cao, and Wen Chen, "Optical hiding based on single- input multiple-output and binary amplitude-only holograms via the modified Gerchberg-Saxton algorithm," Optics Express, 29 (16), 25675 – 25696, 2021. (Impact factor: 3.833; Web of Science (Thomson Reuters JCR): Q2, 28 of 101; Category: Optics).

[20] Yin Xiao, **Lina Zhou**, and Wen Chen, "High- fidelity ghost diffraction and transmission in free space through scattering media," Applied Physics Letters, 118(10), 104001 (5pp), 2021. (Impact factor: 3.971; Web of Science (Thomson Reuters JCR): Q2, 50 of 161; Category: Physics, Applied).

[21] **Lina Zhou**, Yin Xiao, and Wen Chen, "Learning-based optical authentication in complex scattering media," Optics and Lasers in Engineering, 141, 106570 (10pp), 2021. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

[22] Yin Xiao, **Lina Zhou**, and Wen Chen, "Optical information authentication using phase- only patterns with single-pixel optical detection," Applied Optics, 60(10), B1 – B7, 2021. (Impact factor: 1.905; Web of Science (Thomson Reuters JCR): Q3, 70 of 101; Category: Optics).

[23] Yin Xiao, **Lina Zhou**, and Wen Chen, "Wavefront control through multi- layer scattering media using single-pixel detector for high-PSNR optical transmission," Optics and Lasers in Engineering, 139, 106453 (6pp), 2021. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

[24] **Lina Zhou**, Yin Xiao, and Wen Chen, "Learning complex scattering media for optical encryption," Optics Letters, 45(18), 5279 – 5282, 2020. (Impact factor: 3.56; Web of Science (Thomson Reuters JCR): Q2, 32 of 101; Category: Optics).

[25] Yin Xiao, **Lina Zhou**, and Wen Chen, "Secured single-pixel ghost holography," Optics and Lasers in Engineering, 128, 106045 (14pp), 2020. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

[26] **Lina Zhou**, Yin Xiao, and Wen Chen, "Learning-based attacks for detecting the vulnerability of computer- generated hologram based optical encryption," Optics Express, 28(2), 2499 – 2510, 2020. (Impact factor: 3.833; Web of Science (Thomson Reuters JCR): Q2, 28 of 101; Category: Optics).

[27] **Lina Zhou**, Yin Xiao, and Wen Chen, "Vulnerability to machine learning attacks of optical encryption based on diffractive imaging," Optics and Lasers in Engineering, 125, 105858 (6pp), 2020. (Impact factor: 5.666; Web of Science (Thomson Reuters JCR): Q1, 18 of 101; Category: Optics).

[28] Yin Xiao, **Lina Zhou**, and Wen Chen, "Single-pixel imaging authentication using sparse Hadamard spectrum coefficients," IEEE Photonics Technology Letters, 31(24), 1975 – 1978, 2019. (Impact factor: 2.414; Web of Science (Thomson Reuters JCR): Q3, 56 of 101; Category: Optics).

[29] **Lina Zhou**, Yin Xiao, and Wen Chen, "Machine-learning attacks on interference-based optical encryption: experimental demonstration," Optics Express, 27(18), 26143 – 26154, 2019. (Impact factor: 3.833; Web of Science (Thomson Reuters JCR): Q2, 28 of 101; Category: Optics).

[30] **Lina Zhou**, Yin Xiao, and Wen Chen, "Imaging through turbid media with vague concentrations based on cosine similarity and convolutional neural network," IEEE Photonics Journal, 11(4), 7801315 (15pp), 2019. (Impact factor: 2.25; Web of Science (Thomson Reuters JCR): Q2, 60 of 101; Category: Optics).

[31] Yin Xiao, **Lina Zhou**, and Wen Chen, "Experimental demonstration of ghost- imaging- based authentication in scattering media," Optics Express, 27(15), 20558 – 20566, 2019. (Impact factor: 3.833; Web of Science (Thomson Reuters JCR): Q2, 28 of 101; Category: Optics).

[32] Yin Xiao, **Lina Zhou**, and Wen Chen, "Direct single-step measurement of Hadamard spectrum using single-pixel optical detection," IEEE Photonics Technology Letters, 31(11), 845 – 848, 2019. (Impact factor: 2.414; Web of Science (Thomson Reuters JCR): Q3, 56 of 101; Category: Optics).

[33] Yin Xiao, **Lina Zhou**, and Wen Chen, "Fourier spectrum retrieval in single-pixel imaging," IEEE Photonics Journal, 11(2), 7800411 (11pp), 2019. (Impact factor: 2.25; Web of Science (Thomson Reuters JCR): Q2, 60 of 101; Category: Optics).

[34] **Lina Zhou**, Jinsheng Lu, Hangbo Yang, Si Luo, Wei Wang, Jun lv, Min Qiu and Q iang Li, "Optically controllable nanobreaking of metallic nanowires," Applied Physics Letters, 110(8), 081101, 2017. (Impact factor: 3.971; Web of Science (Thomson Reuters JCR): Q2, 50 of 161; Category: Physics, Applied).

[35] Jinsheng Lu, Hangbo Yang, **Lina Zhou**, Yuanqing Yang, Si Luo, Qiang Li and Min Qiu, "Light- induced pulling and pushing by the synergic effect of optical force and photophoretic force," Physical Review Letters, 118(4), 043601, 2017. (Impact factor: 9.185; Web of Science (Thomson Reuters JCR): Q1, 8 of 86; Category: Physics, Multidisciplinary).

A Full List of Refereed Conference Papers

[1] Zilan Pan, Yin Xiao, **Lina Zhou**, and Wen Chen, "Optical transmission through thick biological tissue using optical modulation," International Conference on Optical and Photonic Engineering (icOPEN 2022), 24-27 November 2022, Nanjing, China.

[2] **Lina Zhou**, Yin Xiao, and Wen Chen, "Learning enabled optical encryption in complex scattering media," The 43rd PhotonIcs and Electromagnetics Research Symposium (PIERS), IEEE Xplore, 21 November 2021 – 25 November 2021, Hangzhou, China. **(Invited Speaker)**

[3] **Lina Zhou**, Xudong Chen, and Wen Chen, "Deep learning based attack on phase-truncated optical encoding," 2020 IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization (NEMO2020), 7 December 2020 – 9 December 2020, Hangzhou, China.

[4] **Lina Zhou**, Xudong Chen, and Wen Chen, "Imaging through turbulent media using deep learning method," 18th IEEE International Conference on Industrial Informatics (INDIN2020), IEEE Xplore, 20 July 2020 – 23 July 2020, The University of Warwick, Coventry, UK.

[5] Yin Xiao, **Lina Zhou**, and Wen Chen, "High-quality object reconstruction based on ghost imaging," PhotonIcs & Electromagnetics Research Symposium (PIERS2019), IEEE Xplore, 17 – 20 December 2019, Xiamen, China.

[6] **Lina Zhou**, Yin Xiao, and Wen Chen, "Image recovery through turbid water under wide distance ranges," International Conference on Optical and Photonic Engineering (icOPEN 2019), Proceedings of SPIE, 16 – 20 July 2019, Phuket, Thailand.

[7] Yin Xiao, **Lina Zhou**, and Wen Chen, "Off-axis digital hologram retrieval based on single-pixel optical imaging," OSA Imaging and Applied Optics Congress, OSA Publishing, 24 – 27 June 2019, Munich, Germany.

[8] **Lina Zhou**, Yin Xiao, and Wen Chen, "Learning based holographic reconstruction through a diffuser," PhotonIcs & Electromagnetics Research Symposium (PIERS 2019), IEEE Xplore, 17 – 20 June 2019, Rome, Italy.

[9] Yin Xiao, **Lina Zhou**, and Wen Chen, "Multiple-plane object reconstruction using single-pixel digital holography," IEEE 28th International Symposium on Industrial Electronics (IEEE ISIE2019), IEEE Xplore,12 – 14 June 2019, Vancouver, Canada.

[10] Hangbo Yang, **Lina Zhou**, Jinsheng Lu, Shuowei Dai, Min Qiu and Qiang Li, "Laser assisted welding of layered metallic nanostructure," IEEE 15th International Conference on Optical Communications and Networks (ICOCN), IEEE Xplore, 1 – 3 March 2016, Hangzhou, China.

[11] **Lina Zhou**, Guoping Liu, Si Luo, Qiang Li and Min Qiu, "Laser assisted welding of gold nanowires," 5th International Conference on Advances in Optoelectronics and Micro/Nano-optics (AOM 2015), Journal of Physics: Conference Series, 680, 28–31 October 2015, Hangzhou, China

Research Projects

[1] **Key Participant (Dr ZHOU Lina)**, "Single-pixel optical big-data encryption for securing information", Funded by Hong Kong Research Grants Council Early Career Scheme, Project period from 01-Jan-2017 to 30-Jun-2020, Funding amount HKD$568470.

[2] **Key Participant (Dr ZHOU Lina)**, "Research on dual- layer optical information encryption and nonlinear optical information verification methods based on optical ciphertext hiding", Funded by Shenzhen Science and Technology Innovation Commission, Project period from 30-Aug-2016 to 31-Aug-2018, Funding amount RMB¥300000.

[3] **Key Participant (Dr ZHOU Lina)**, "Research on optical decrypted- image authentication system based on holographic encryption technology and ciphertext compression", Funded by National Natural Science Foundation of China, Project period from 01-Jan-2017 to 31- Dec-2019, Funding amount RMB¥200000 (Direct Budget) plus matching amount (HKD$47428).

[4] **Key Participant (Dr ZHOU Lina)**, "Multi-scale spatiotemporal single-cell in-situ analysis: mechanism and biomedical applications", Funded by Hong Kong Research Grants Council Collaborative Research Fund, Project period from 1 May 2020 to 31 October 2021, Funding amount HKD$2349052.

[5] **Key Participant (Dr ZHOU Lina),** "Research on lossless optical- information transmission through complex scattering media in space", Funded by Huawei Technologies Co., Ltd., Project period from 25 July 2020 to 31 December 2022, Funding amount HKD$1000000.

[6] **Key Participant (Dr ZHOU Lina)**, "High- fidelity free-space optical data transmission in complex environments with computer-generated hologram and orbital angular momentum multiplexing", Funded by Hong Kong Research Grants Council General Research Fund, Project period from 1 January 2022 to 31 December 2024, Funding amount HKD$838393.

[7] **Key Participant (Dr ZHOU Lina)**, "Research on single-pixel optical information authentication methods", Funded by GuangDong Basic and Applied Basic Research Foundation (Department of Science and Technology of Guangdong Province), Project period from 1 January 2022 to 31 December 2024, Funding amount RMB$100000.

[8] **Key Participant (Dr ZHOU Lina)**, "Compensation-free high-fidelity and high-dimensional free-space optical communication through complex, dynamic and highly strong turbulence media using untrained neural networks", Funded by Hong Kong Research Grants Council General Research Fund, Project period from 1 Sep. 2022 to 31 Aug. 2025, Funding amount HKD$1033290.

Professional Services

I am an active reviewer for the following international journals:

- ➢ Optica
- ➢ Optics and Lasers in Engineering (Elsevier)
- ➢ Optics Express
- ➢ Scientific Reports
- ➢ Frontiers in Photonics
- ➢ Applied Optics
- ➢ Frontiers in Marine Science