Zhiping WANG

wang-zhiping.github.io
+86 18311151638
Chinese
0009-0004-9890-9809
w17611688963@gmail.com
zhpwang818@gmail.com

Education

School of Physical Science and Technology, Lanzhou University (Project 985) *Lanzhou, China*
One of China's top 10 science universities *Sep 2020 – Present*

***Major**: Physics (in National Training Base for Research and Teaching Talents in Basic Science Disciplines)*
Bachelor of Science degree expected in July 2024
***GPA**: 85.25/100, **Ranking**: 4/20 (20 Selected from 52)*

***Major courses:**Fourier optics(89), Computational Physics (100), Methods of Mathematical Physics II (99), Optoelectronic Technology and Applications(94), AI and Big Data(97), Theoretical Mechanics, Statistical Physics, Electrodynamics, Quantum Mechanics, Ferro Magnetism, Magnetic Materials and Measurements, Linear Algebra.*

Honors and Awards

Excellent Bachelor's Thesis		*Jun. 2024*
Outstanding Student Scholarship		*Sep. 2023 and Sep. 2022*
China Undergraduate Physics Tournament(Northwest Region)	Second Prize	*Jul. 2022*
China Undergraduate Physics Tournament(Northwest Region)	First Prize	*Jun. 2021*

Publication

[1] Zhiping Wang, Tianci Feng, and An Pan. ***Fusion-Based Enhancement of Multi-Exposure Fourier ptychographic microscopy***.

* The project's result can be found at the project link.

– Submitted to the journal ***APL Photonics***.

[1] Fannuo Xu †, Zhiping Wang †, Zipei Wu, Houyou Lai, Yizheng Liao, and An Pan. ***Slicing-free, wide-field quantitative phase imaging via feature-domain Fourier ptychographic microscopy***.

– Submitted to the journal *Optics Letters* (Manuscript ID531347) and under peer review.

[3] Tianci Feng, Aiye Wang, Zhiping Wang, Yizheng Liao, and An Pan. ***A Linear-Space-Variant Model for Fourier Ptychographic Microscopy***.

– Proposed linear space-variant FPM model, which better matches the raw data to reduce global artifacts.

– **Accepted** and produced by ***Optics Letters*** in Link. (DOI:10.1364/OL.522745)

[4] Fannuo Xu, Zipei Wu, Chao Tan, Yizheng Liao, Zhiping Wang, Keru Chen, and An Pan. ***Ten Years On: A Review of Fourier Ptychographic Microscopy***.

– **Accepted** by *Cells* on February 8, 2024, accessible via the following link.(DOI:10.3390/cells13040324)

- Zhiping Wang. ***Performance of Coherent Ising Machine on Weighted NP-hard Problem***.

  * The project's code and result can be found at the GitHub project link.

  – Preprint

- Zhiping Wang, **Bachelor's Thesis**: Exploring Advancements in Slicing-free Fourier Ptychographic Microscopy.

  * Instructor: Dr. Hao Jia (Lanzhou University and KAUST) and Dr. An Pan (Chinese Academy of Sciences)

  – Summarized some of my work on Fourier Ptychographic Microscopy.

  – Achieved an **excellent** rating for my thesis through **oral defense**.

Research/Projects Experience

Here are several representative ongoing or completed research. For more information, please visit my personal website.

Research on Fast Fourier Ptychographic Based on Illumination Control *Aug 2023–present*
Research Internship, Supervisor: Dr. An Pan, Pioneering Interdiscipline Center [1] of Chinese Academy of Sciences

* The project's result can be found at the GitHub project link1 and GitHub project link2.
- Studied articles related to the principles of Fourier Ptychographic Microscopy and actively participated in experiments to gain insights into the details.
- Performed numerical simulations to assess the effect of various led on image restoration, explored relevant literature and theory to seek support for reducing overlap rates; experiment still in the planning.
- Successfully implemented rapid imaging on a miniaturized system using the new algorithm, simultaneously expanded, with the potential to cross-link with image fusion techniques for enhanced phase recovery.

Exploring the Performance of Coherent Ising Machine in weighted NP-Hard Problems *Dec 2022–Aug 2023*
Independent Study, Advisor: Jie Zhu, School of ECE, Purdue University

* The Project's code and details can be viewed at the GitHub project link.
- Replicated prior research using an Optical Parametric Oscillators (OPO)-based coherent Ising machine for numerical simulations, utilizing theoretical equations, and applying the Runge-Kutta method to solve differential equations in Python.
- Utilized coherent Ising machine to address number partitioning problems and MAX-CUT in unweighted graphs, for the MAX-CUT problem, the success possibility of the Ising machine approach was higher.
- Applied the MaxCut problem to weighted graphs and found similar trends, suggesting that the success possibility might be associated with the weights.

Skills

Programming:	Proficient in C/C++, MATLAB, Mathematica, Python (TensorFlow, OpenCV, etc.), LaTeX/Tex
Software:	Familiar with Comsol, SolidWorks, Zemax, PixInsight; Proficient in Adobe Illustrator, Photoshop
Computing Skills:	Experienced in supercomputing environments for high-performance computing tasks Competent in Linux for system administration and scripting Familiar with CUDA for GPU-accelerated computing

Teaching Experience

School of Physical Science and Technology, Lanzhou University *Lanzhou, China*
Teaching Assistant for the Computational Physics Class *September 2021 – January 2022*

- Reviewed and graded student assignments, provided constructive feedback to students, and helped teachers with ongoing evaluation.
- Assisted students with course material, answered questions during regular office hours I held or in the class, and conducted supplemental study sessions to enhance students' understanding of complex topics.
- Collaborated with the course instructor to develop educational materials, including presentations and assignments, to improve the overall learning experience.

[1] One of the interdisciplinary research centers within the **national laboratories**, among China's **top four** optical research bases.