

## 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), Opto-electronic 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 <sup>†</sup>, Zhiping Wang <sup>†</sup>, 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

### Research on Fast Fourier Ptychographic Based on Illumination Control

Aug 2023–present

Research Internship, Supervisor: Dr. An Pan, Pioneering Interdiscipline Center<sup>1</sup> 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.

### Reproduction of Reverse Design of Nano-Optical Structures By Neural Networks

Apr 2022–Mar 2023

Research Assistant, Advisor: Dr. Hao Jia, Lanzhou University & KAUST

- Carried out literature research on the reverse design methods for optoelectronics devices and their applications.
- Created an optical system employing a tandem architecture that combines forward modeling and inverse design based on the work of Yu Zongfu's team.
- Coded in Python using TensorFlow to capture the trends mentioned in the paper using a small sample dataset.

Here are some representative (not all) research projects. For more information, please visit my [personal website](#).

## Skills

<b>Programming:</b>	Proficient in C/C++, MATLAB, Mathematica, Python (TensorFlow, OpenCV, etc.), $\text{\LaTeX}$ /Tex
<b>Software:</b>	Familiar with Comsol, SolidWorks, Zemax, PixInsight; Proficient in Adobe Illustrator, Photoshop
<b>Computing Skills:</b>	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.

<sup>1</sup>One of the interdisciplinary research centers within the **national laboratories**, among China's **top four** optical research bases.