Zhiping WANG

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Education

Master of Science, University of Basel — *Basel, Switzerland*
Biozentrum — *Sep. 2024 – Jan. 2026 (expected)*
Major: *Master of Science in Physics of Life (Fellowship)*

Bachelor of Science in Physics, Lanzhou University (Project 985 in China) — *Lanzhou, China*
School of Physical Science and Technology — *Sep. 2020 – Jul. 2024*
Major: *Physics (magnetic track)*in National Training Base for Research and Teaching Talents in Basic Science Disciplines
Ranking: *4/20 (20 Selected from 52)* ***GPA***: *85.25/100*

Honors and Awards

Biozentrum Fellowship for Master's Study	University of Basel	*Jun. 2024 - Jan. 2026*
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 *Advanced imaging*.

[2] Fannuo Xu †, Zhiping Wang †, Zipei Wu, Houyou Lai, Yizheng Liao, and An Pan. *Wide-Field Quantitative Phase Imaging Without Slicing Via Feature-Domain Fourier Ptychographic Microscopy*.

– Submitted to the journal *Optics & Laser Technology* 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)

[5] Yanqi Chen, Jiurun Chen,Zhiping Wang, Yuting Gao, Yhonghong He, Yishi Shi, and An Pan. *Fast full-color pathological imaging using Fourier ptychographic microscopy via closed-form model-based colorization*.

– Submitted to the journal *Advanced Photonics*.

[•] 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 High-effective Fourier Ptychographic *Aug 2023–present*
Research Internship, Supervisor: Dr. An Pan, Pioneering Interdiscipline Center 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.
- Discovered that block stitching is a cause of many issues in the field of FPM. Through MATLAB simulations and using Arduino to control the LED array for illumination modulation, progressively expanded the field of view in single imaging (0.2mm-1mm-3.3mm) using an improved collaborative algorithm.
- Noticed some deficiencies in the algorithm. By drawing on the concept of image fusion, successfully utilized existing multi-exposure images for innovative nonlinear stitching, significantly improving the imaging quality.

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

Programming:	Proficient in C/C++, MATLAB, Mathematica, Python (TensorFlow, OpenCV, etc.), LaTeX/Tex
Software:	Familiar with Comsol, SolidWorks, Zemax, PixInsight; Proficient in Adobe Illustrator, Photoshops
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.