Zhiping Wang

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Education

- **Bachelor of Science in Physics** — **Lanzhou,China**
  Lanzhou University — *September 2020 – Current*
  GPA:84.61/100; Ranking:4/20 in Physics Base Class(magnetism)
  Major courses: Computational Physics, Methods of Mathematical Physics, Optoelectronic Technology and Its Applications, AI and Big Data, Fourier optics, Theoretical Mechanics, Thermodynamics and Statistical Physics, Quantum Mechanics, Electrodynamics

Honors and Awards

- **China Undergraduate Physics Tournament(Northwest Region)** — **First Prize**
  As a contestant — *June 2021*
- **China Undergraduate Physics Tournament(Northwest Region)** — **Second Prize**
  As a team leader — *July 2022*
- **Outstanding Student Scholarship**
  Lanzhou University — *September 2022*

Teaching experinece

- **Computational Physics**
  Teaching Assistant — *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 and answered questions during regular office hours I held or in the class.

Computer skills

I possess a solid understanding of programming languages, including **C/C++**, **Matlab**, and **Python**, and have some experience using popular Python libraries like **NumPy**, **Pandas**, **OpenCV**, **TensorFlow**.

Research/Projects Experience

- **Solving an NP problem by means of Quantum Optics**
  School of ECE, Purdue University(Online) — *December 2022 – June 2023(expected)*
  - **Introduction:**The project plan aims to tackle some typical NP problems (such as the MAX-CUT problem) by utilizing optical parametric oscillators (OPOs) or OPO networks. The proposed approach involves abstracting the target problem as an Ising spin system and then using OPO (networks) to search the Hamiltonian ground state energy to solve the target problem.
  - **Project Progress:** Following the idea proposed in the paper to build a neural network using TensorFlow and train it in colab, the target effect was successfully reproduced (the training trend was the same as the effect in the paper) and the prediction could be successfully made.
- **Reproduction of optical design projects based on reverse learning**
  School of Physical Science and Technology — *April 2022 – March 2023*
  - **Introduction:**The goal of this project is to replicate the findings of an article authored by Yu Zongfu's team. When we encounter a partial optical structure with corresponding electromagnetic correspondence, we will employ a tandem architecture that combines forward modeling and inverse design to create an optical system.
  - **Project Progress:** By following the approach suggested in the paper, we constructed a neural network using TensorFlow and trained it in Google Colab. We successfully replicated the desired effect (the training trend closely matched that reported in the paper) and were able to make accurate predictions.
- **Palm print identification**
  School of Information Science and Engineering — *November 2021 – March 2022*
  - **Introduction:**This project utilizes publicly available datasets to develop a palmprint identification system that aims to achieve high accuracy in distinguishing the owner of a given palmprint, which is a practice project for learning neural networks.
  - **Project Progress:**After conducting extensive research, I discovered that By selecting appropriate parameters and applying adaptive binarization to the database photos, they were successfully classified with a slightly modified SVM, with an accuracy rate exceeding 98%.