Zhiping WANG

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Education

Bachelor of Science in Physics   *Lanzhou China*
Lanzhou University   *September 2020 – Present*
GPA:84.6/100;
Ranking:4/20 in Physics Base Class
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)   *2021*
China Undergraduate Physics Tournament(Northwest Region)   Second Prize(As a team leader) *2022*
Outstanding Student Scholarship   *2022*

TA Experience

Computational Physics   *September 2021 – January 2022*
Teaching Assistant   *Lanzhou University, China*

- Reviewed and graded student assignments, provided constructive feedback to students and helped teachers with ongoing evaluation.
- Assisted students with course and answered questions during regular office hours I held or in the class.

Research/Projects Experience

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

Improving the efficiency of photoacoustic conversion in photoacoustic imaging   *May 2023 – Present*
Professor Fei Gao, School of Information and Engineering, ShanghaiTech   *Shanhai,China*
Photoacoustic imaging can be abstracted as a damped oscillation model and resonance enables the generation of a narrowband, high-intensity signal, facilitating signal processing. In this study, I'm exploring resonance parameters to align the intrinsic and central frequencies of the medium, such as contrast agents and biological tissues. The project is in the early stages of development.

Solving an NP problem by means of Quantum Optics   *December 2022 – August 2023(expected)*
School of ECE, Purdue University   *Online*
Solving NP problems is a crucial task, particularly in the field of combinatorial optimization. It is worth noting that some combinatorial optimization problems share similarities with the Ising model in terms of their objective functions and Hamiltonian. Building upon the previous work on using coherent Ising machines with optical parametric oscillators (OPOs) to solve the MAX-CUT problem, I have made attempts to solve the Number Partitioning problem and have achieved promising results. The numerical simulations have been largely completed, and I am now in the process of writing the research article.

Reproduction of Reverse design of nano-optical structures   *April 2022 – March 2023*
Professor Hao Jia,Lanzhou University & KAUST   *Lanzhou China*
The goal of this project is to replicate 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. Following the author's proposed approach and using the provided training data, I successfully built a code in **Python** using **TensorFlow**. Using this code, I was able to capture the trends mentioned in the paper using a small sample dataset. This project has strengthened my understanding of neural network coding fundamentals and parameter tuning. However, due to limited computational resources, I was unable to fully reproduce all the results.