Ze Ouyang

Website: ze-ouyang.github.io
Email: ze_ouyang@utexas.edu
Address: 2515 Speedway, Austin, TX
Phone: +1 (626)-320-0834
LinkedIn: linkedin.com/in/ouyangze/

EDUCATION

The University of Texas at Austin   Austin, U.S.
Ph.D. candidate in Physics, Advisor: Michael Downer   Fall 2022–Current

Huazhong University of Science and Technology   Wuhan, China
B.Sc. in Physics, Advisor: Pengshun Luo   Fall 2018–Summer 2022

- Thesis: "Experimental search for exotic spin-spin interactions at the micrometer range"

RESEARCH INTEREST

- Diagnostics for laser wakefield acceleration
- AI for science, such as neural network approach for inverse problems and partial differential equations
- Experimental search for new physics

EXPERIENCE

The University of Texas at Austin   Austin, U.S.
Research Assistant in LWFA Group (Experimental laser physics)   Fall 2022–Current

Huazhong University of Science and Technology   Wuhan, China
Research Assistant in ENP Group (Experimental condensed matter physics)   Spring 2019–Summer 2022

- Simulation of condensed matter phenomenon by finite element analysis
- Proposal of an experiment to search for exotic spin-spin interactions
- Theoretical motivation of the axion

The Chinese University of Hong Kong   Hong Kong, China
Honorary Research Assistant in The Jianfang Wang Group (Nanophotonics)   Summer 2021

- Synthesis of nanoparticles including nanospheres, nanoplates, nanorods, and et al
- Optical characterization of the nanoparticles

PUBLICATIONS

1. Proposal for the search for exotic spin-spin interactions at the micrometer scale using functionalized cantilever force sensors.

   Qian Wang, **Ze Ouyang**, Pengshun Luo✉et al, Phys. Rev. D, 107, 015005 (2023)

2. Reconstruction, Analysis of the Process ggH Decay to ll$\nu\nu$ Monte Carlo with MH=125 GeV and Introduction of the Physical Background.

   Fanli Zeng✉, Yiwei Liu, **Ze Ouyang** et al, J. Phys.: Conf. Ser., 2287 012030 (2022)

Softwares

- cupyint: A CuPy-based Python package for numerical integration on GPU.
- torchint: A PyTorch-based Python package for numerical integration on GPU, especially for machine learning.
- numpyint: A NumPy-based Python package for numerical integration on CPU.

Skills

- **Programming:** C++, Python (Machine learning), Fortran
- **Simulating:** COMSOL
- **Data processing:** MATLAB, Mathematica, Origin
- **Other:** LaTeX, Github

Teaching

- **Lab Teaching Assistant** at The University of Texas at Austin — Fall 2024
  Lab for PHY 302L/303L/317L (PHY 105N, Unique number: 56365)
  Instructor: Prof. Perera

- **Lab Teaching Assistant** at The University of Texas at Austin — Fall 2024
  Lab for PHY 302L/303L/317L (PHY 105N, Unique number: 56405)
  Instructor: Prof. Perera

- **Lab Teaching Assistant** at The University of Texas at Austin — Spring 2024
  Lab for PHY 302L/303L/317L (PHY 105N, Unique number: 55710)
  Instructor: Prof. Loveridge

- **Lab Teaching Assistant** at The University of Texas at Austin — Spring 2024
  Lab for PHY 302L/303L/317L (PHY 105N, Unique number: 55575)
  Instructor: Prof. Loveridge

- **Lab Teaching Assistant** at The University of Texas at Austin — Fall 2023
  Lab for PHY 302L/303L/317L (PHY 105N, Unique number: 57430)
  Instructor: Prof. Loveridge

- **Lab Teaching Assistant** at The University of Texas at Austin — Fall 2023
  Lab for PHY 302L/303L/317L (PHY 105N, Unique number: 57460)
  Instructor: Prof. Loveridge

- **Lab Teaching Assistant** at The University of Texas at Austin — Summer 2023
  Lab for PHY 302K/303K/317K (PHY F105M, Unique number: 86935)
  Instructor: Prof. Loveridge

- **Teaching Assistant** at The University of Texas at Austin — Spring 2023
  Quantum Mechanics I (PHY 373, Unique number: 57005)
  Instructor: Prof. Onyisi

- **Teaching Assistant** at The University of Texas at Austin — Spring 2023
  Modern Physics and Thermodynamics (PHY 355, Unique number: 56965)
  Instructor: Prof. Raizen

- **Teaching Assistant (Grader)** at The University of Texas at Austin — Fall 2022
  Modern Physics and Introduction to Thermodynamics (PHY 355, Unique number: 57430)
  Instructor: Prof. Onyisi

Languages

- **Mandarin Chinese:** Native or bilingual proficiency
- **English:** Professional working proficiency

Last updated on February 27, 2025