

# KAICHU CHEN

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Xi'an Jiaotong University, No.28, Xianning West Road, Xi'an, Shaanxi, 710049, P.R. China

## EDUCATION

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| Xi'an Jiaotong University  | Xi'an, China         |
| B.S. in Physics, Quantum Information and Quantum Optics<br>(Strengthening Basic Disciplines Program) | Aug. 2020 – Present  |
| B.S. in Finance (Minor)  | Feb. 2022 – Present  |
| GPA: 85.6/100<br>(rankings are not accessible currently)   | Ranking: Top 3 of 22 |

## RESEARCH INTERESTS

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quantum information, quantum computing, artificial intelligence and quantum neural networks.

## RELATED COURSEWORK

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- Computational Physics: 96/100
- Quantum Mechanics: 89/100
- Opto-electronics: 95/100

## RELATED EXPERIENCE

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### Quantum Devices Research Training

- Implement images denoising with FFT in matlab.
- Mentor: Spintronic Materials and Quantum Devices Research Center, Tao Li
- January 2021-March 2021

### Quantum Resource Theory Salon

- Improve research capacities in latex and endnote; Discuss around the foundation of quantum resource theory.
- Mentor: Quan Quan
- March 2021-June 2021

### Quantum Sensing Research Training

- Study around quantum optics and NV center system: a proof-of-concept gyroscope based on Nitrogen nuclear spin in NV system that measuring rotation speed in double quantum Ramsey procession.
- Mentor: Pengbo Li
- October 2021-November 2022

### Quantum Summer Seminar of USTC

- Discuss and research around Quantum Computation and Quantum Information, Neilson & Chuang and pioneering papers in the field of quantum information and quantum computing.
- Mentor: Zhaofeng Su
- July 2022-October 2022

### Quantum Foundations Research

- An attempt for quantitatively analyzing the genuine tripartite nonlocality of general three-qubit states and canonical forms of quantum states under local operations.

- Mentor: Zhaofeng Su
- October 2022-March 2023

#### Quantum Metrology Summer Research of HKU

- Overcome the no-go theorem of quantum metrology via Petz recovery map; Denoise to enhance the precision of quantum metrology by using physical form of recovery map.
- Mentor: Yuxiang Yang
- July 2023-August 2023

#### Research Assistant of HKUST-GZ

- Quantum Scrambling, Quantum CNNs and Platform development.
- Mentor: Xin Wang
- October 2023-Now

#### Final Coursework of Electrodynamics Course

- Presentation about Josephson junction, superconducting quantum interference Device and superconducting quantum computation systems.
- Mentor: Hongfei Zhang

#### Final Coursework of Opto-Electronics Course

- Presentation about application of NV center to quantum computation.
- Mentor: Hong Gao

#### Final Coursework of Computation Physics Course

- Implement semiclassical quantization of molecular vibrations that uses appropriate integral function and root function in matlab; Implement numerical analysis of white dwarf models in matlab.
- Mentor: Jianxing Li

#### Final Coursework of AI course

- Implement an intelligent Go program that uses MinMax and Alpha Pruning algorithms in Python to achieve the optimal Go strategy and defeat robots and competitors; Presentation about HHL algorithm and Quantum SVM algorithm.
- Mentor: Hui Cao

The Third Prize Scholarship

XJTU; 2020-2021, 2021-2022

#### SKILLS

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|------------|------------------------------------|
| Languages  | C, Python, Matlab, Latex           |
| Tools      | Cmsol, Origin, Endnote             |
| Frameworks | Paddle Quantum, Pytorch            |
| Utilities  | Anaconda, Jupyter Notebook, Github |

#### PERSONAL

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| Club      | Karate, Robomaster, Table tennis                |
| Volunteer | National College Physics Experiment Competition |