

Zekun Lou (娄泽坤)

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Education

B.S. in Physics, Fudan University, China Fall 2019 - Present

- Fourth year, GPA 3.81, rank 6/103.
- Relevant courses: Computational Physics, C / C++ / Python Language Programming, Solidstate Physics, (Advanced) Quantum Mechanics.

Pre-college Education, in Henan, China Born - Summer 2019

Research Projects

Reversible bialloy descriptor Spring 2022 - Present

- Tutor: Prof. Hongjun Xiang.
- Search for "good" descriptors of bialloy structures, and build proper generative neural networks for inverse design.

Pirani gauge teaching experiment Summer 2021 - Summer 2022

- Tutor: Prof. Yongkang Le.
- Develop a Pirani gauge teaching experiment. Everything starts from zero, including circuit designing, SCM programming, PID tuning, and user instructions.

Vacuum chamber and puck design Autumn 2021 - Spring 2022

- Tutor: Prof. Yuanbo Zhang.
- Design equipment for an ultra-low temperature & strong magnetic field dilution refrigerator, including sample pucks and functional vacuum chambers.

Course Projects

Invisible cloak Sep. 2021 - Dec. 2021

- Course project in *Electrodynamics I*.
- Design electromagnetic field controlling meta-materials based on the theory of transformation optics and conformal mapping and optimize the structures by meta-surfaces.
- Verify the theoretical results by COMSOL FEA simulation.

Heisenberg model in nano particles

Mar. 2021 - Jun. 2021

- Course project in *Statistical Physics I*, best two in all thirteen projects.
- Research the behaviors of anisotropic Heisenberg model in nanomagnetic particles by Monte Carlo Metropolis algorithm.

Drifting Speckles in laser spots

Sep. 2019 - Oct. 2020

- Course project in *Physics Modelling*.
- Research the properties and theories in laser speckle phenomenon, mainly Fourier optics.

Skills

Second language: English (IELTS 7.0, CET6 617)

Languages: Python, C/C++, Wolfram Language, L^AT_EX, PowerShell, Bash.

Applications: VS Code, MS Office, Wolfram Mathematica, COMSOL, LAMMPS, Ovito, Arduino, Solidworks, Multisim, Mathcha Notebook.

Miscellaneous: Software configuration management, verbal and written communication skills, ability to understand new knowledge quickly, good team skills.

Awards & Prizes

National top student project in basic science (基础学科拔尖学生培养计划)	2020, 2021
Honored student in physics department (物理学系荣誉学生)	2020, 2021
First class scholarship of Fudan University (CNY 10000)	2021
National undergraduate scholarship (CNY 8000)	2020
Freshmen scholarship of Fudan University (CNY 10000)	2019
First prize in National Undergraduate Physics Experiment Competition	2021
Second prize in China Undergraduate Physics Tournament (CUPT)	2020
Second prize in China Physics Olympiad (CPhO)	2018

Interests

Academic: Solid state physics, quantum computing, machine learning (especially deep learning and AI4science).

Sports: Badminton, swimming.

Musical: Accordion.