Peiyuan Wang

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School Work Experience

TA of Principles and Applications of Quantum Information Sep 2021 - Jan 2022

Instructor: Prof. Shengjun Wu

Prepared problem sets and graded assignments for students.

Assisted the instructor in editing course materials and textbook content, covering core topics and exercises in quantum information theory.

Vice President, Astronomy Enthusiasts Association Jul 2020 - Jul 2021

Organized regular stargazing events and public science lectures on campus.

Managed the association's social media account and produced promotional videos through self-taught video editing with Adobe Premiere Pro.

Other

- Participated in multiple teaching support programs, including the Yangtze River Delta Four Universities Honors College Joint Teaching Support Team, the Green Mountain Companion Teaching Support Team, and the South Wind Teaching Support Team, developing extensive experience in student mentoring and classroom instruction.
- Served as Captain of the Table Tennis Team at Kuang Yaming Honors School, Nanjing University.
- Worked at the Student Center of the Student Union, Kuang Yaming Honors School, Nanjing University.

Projects

The International Mathematical Contest in Modeling (MCM) Feb 2021

Formulated a multi-species fungal competition model based on modified Lotka–Volterra/Logistic dynamics, coupling two-dimensional colony expansion, humidity adaptability, and wood decomposition rates.
Conducted numerical simulations and sensitivity analysis to evaluate ecosystem stability across climatic conditions; primarily responsible for model formulation, with contributions to code refinement and manuscript writing.
Awarded Finalist in MCM/ICM, ranking within the top 0.2

GRID Project Feb 2021-Feb 2022

Worked on gamma-ray burst data processing in the scientific data team; previously coordinated literature review and background research within the survey group.
Explored machine learning approaches for light-curve signal detection and improved programming skills through astrophysical data analysis. Learned how to use LSTM, CNN, and many other models.
Contributed to the discovery of GRID's first gamma-ray burst and co-authored a related arXiv paper.

Summer Research Project Jul 2022 - Dec 2022

Conducted research on the symmetric mass generation (SMG) model under the supervision of Prof. Yizhuang You, University of California San Diego. Developed a deeper understanding of condensed matter theory, especially interacting fermion systems and many-body physics. Used Mathematica for analytical calculations and symbolic computation, and gained exposure to applications of artificial intelligence in physics research.

Education

2024 - present	PhD (Physics) at **Hong Kong University**	
2019 - 2023	Bachelor's Degree at **Nanjing University**	(GPA: 4.4/5.0)
2016 - 2019	**Tianjin Yaohua High School**	(Grade: 693/750)

Publications

Wang, Xiangyu Ivy et al. (2021). "GRB 210121A: a typical fireball burst detected by two small missions". In: *The Astrophysical Journal* 922.2, p. 237.

Zhang, Chen et al. (2025). "Brillouin platycosms and topological phases". In: *Physical Review Letters* 135.13, p. 136601.