

Laura, Liu Leran

Tel: (+852) 6096 5082

Email: leran@connect.hku.hk

laurensWonderland99@gmail.com



Self Introduction

I am pursuing Ph.D degree in quantum computing and information, focusing on the development of quantum cryptographic schemes via Quantum Merlin-Arthur (QMA)-complete problems, in particular, the quantum marginal problem or consistency of local density matrices.

Before transitioning into the physics community, I engaged in interdisciplinary work spanning architecture, finance, and other fields. I highly value intellectual exchanges with experts across disciplines and actively seek to broaden my perspectives. I am multilingual—fluent in Mandarin, English, Japanese, and Cantonese and is currently studying French.

Academic Background

Ph.D. candidate in Physics (Quantum Computing and Information) **University of Hong Kong**
2021–Present

Thesis: *A New Approach to Modern Security via Quantum Cryptography*

Advisor: Prof. Zidan Wang

Bachelor of Science in Physics

University of Hong Kong

2018–2021

Thesis: *Shor's algorithm and Quantum computing*

Exchange program

University of California San Diego

2020/09–12

Related Course: *PHYS212* by Prof. Yizhuang YOU

Bachelor of Surveying in Real Estate and Construction

University of Hong Kong

2017–2018

Transferred to Physics

Professional Activities

- Speaker at Chip Hub for Integrated Photonics Xplore (CHIPX), Shanghai Jiao Tong University on Quantum Cryptography invited by Prof. Xianmin Jin (2025/05)
- Participated in ICBS 2024 (International Congress of Basic Science) hosted by Tsinghua University
- Talk on Thermal State Preparation (2022/08) at Department of Physics, the University of Hong Kong
- Academic Visit to Institute of Physics, Chinese Academy of Sciences during 2020/01–02
- Participated in QIP (Quantum Information Processing) 2019 hosted by Pengcheng Lab, Shenzhen

Academic Honors & Awards

- C.D. Belling Memorial Prize in Theoretical Physics (2020): Awarded to one or two students for merit-based achievements in Physics
- HKU Foundation Scholarship (2017–2021) : Recognized for academic excellence throughout undergraduate studies

Working Experience

- Assembled a specialized team with Mr. Ruijiang Wu, previously a senior engineer at TuSimple (NASDAQ: TSP) for the establishment of a large-language model (LLM) application company, focusing on technological implementation and strategic development during 2025/03–05. Identified enterprise demand and structured business requirements for AI-driven solutions.
- Contributed to fundraising efforts alongside Ms. Xiuqi Wang (Investment Director at Golden Sands Capital) to establish the Hubei Aerospace Development Fund during 2024/09–10. Assisted in sourcing potential investors and structuring funding strategies.
- Worked with Prof. Ziyang Meng at the Department of Physics, the University of Hong Kong, assisted on scientific and graphic illustrations on academic papers and department websites during 2019–2020.
- Worked with Dr. Tamama, director at CITIC securities, CLSA, developed a platform on high-performance computing, a mixed-reality device during 2019/06–08.
- Worked with Prof. Yunran Zhang at Chinese University of Hong Kong (CUHK), conducted sociological research and interview at Guangdong Dianbai Drug Rehabilitation Center during 2018/08
- Worked with Prof. Bin, Jiang at Department of Landscape, the University of Hong Kong, processed interview-related data from Foxconn Technology Group employees in 2017/09–12.
- Worked with Dr. Qiancheng Wang at University of Cambridge on student-initiated company on 3D construction, established a reading corner at University of Sichuan and a 3D printed building supported by local government of Ya'an, Sichuan from 2017–2019.

Teaching Experience

- Teaching Assistant at PHYS8352 Quantum information
- Teaching Assistant at PHYS4151 Data analysis and modeling in physics
- Lab Demonstrator at PHYS2255 Introductory electricity and magnetism

Other Activities and Earlier Experiences

- Produced a documentary, named 360 in Sham Shui Po, interviewing local residents of Hong Kong, screened at the United Nations General Assembly in New York (2019)
- Organized several major events in HKU as Member of Chinese Students and Scholars Association (CSSA) during 2018/09-12: Class of 2018 Graduation Banquet; Ocean Park Spring Trip for Mainland Students (2018)
- Received awards in National Academic Olympiad competitions: second prize in Physics and Mathematics during high school (2016) and second prize in Computer Science/Informatics during middle school (2013)
- Achieved as the provincial first-place winner in the University of Science and Technology of China (USTC) Young Talent Program's college entrance exam (2016)
- Achieved second prize, ranking fifth in the Hong Kong-wide Innovation and Entrepreneurship competition (2018)