

RESEARCH STATEMENT	My research interests lie in <b>quantum computation</b> and <b>quantum information theory</b> , with a particular focus on their practical applications. I am also interested in the <b>intersection between quantum science and artificial intelligence</b> .	
EDUCATION	<b>School of Data Science, The Chinese University of Hong Kong, Shenzhen</b> Shenzhen, China <i>B.Sc. in Data Science and Big Data Technology</i> 2022.9 - 2026.7 <ul style="list-style-type: none"> <li>CGPA: 3.89/4.00, Major Rank: 7/150.</li> <li>Dean's List, 2023.6.</li> <li>Dean's List, 2024.6.</li> <li>Academic Performance Scholarship: Class B, AY2023–2024.</li> </ul> <b>Berkeley Global Access program, University of California Berkeley</b> Berkeley, U.S. <i>Exchange student</i> 2024.8 - 2024.12 <ul style="list-style-type: none"> <li>GPA: 4.00.</li> </ul>	
EXPERIENCES	<b>Prof. Kun Fang's Group</b>   School of Data Science, The Chinese University of Hong Kong, Shenzhen 2025.6 - Current <ul style="list-style-type: none"> <li>First author on the paper <i>Resource Theory of Asymmetric Distinguishability with Partial Information</i> completed with Prof. Kun Fang.</li> <li>Formulated and analyzed distinguishability distillation and dilution tasks, established optimal rates' connection with quantum divergences, and proved a reversibility theorem based on regularized quantities.</li> <li>Led core derivations and paper drafting; strengthened skills in mathematical reasoning, collaborative research, and communicating complex theoretical ideas under pressure.</li> </ul> <b>Dr. Jingyi Zhao's Group</b>   Shenzhen Research Institute of Big Data 2024.12 - 2025.6 <ul style="list-style-type: none"> <li>Conducted research on Learning to Optimize (L2O) and Mixed Integer Non-Linear Programming (MINLP). Contributed to the paper Learning to Optimize for Mixed-Integer Non-linear Programming with Feasibility Guarantees.</li> <li>Built a <i>predict-then-optimize</i> framework to solve a real-world wind power optimization problem in Shanxi Province, incorporating techniques such as Mixture of Experts (MoE) for forecasting and MINLP for constrained optimization.</li> </ul> <b>Prof. Kai Zhou's Group</b>   School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen 2024.08 - 2025.08 <ul style="list-style-type: none"> <li>Explored theoretical foundations and practical applications of score matching and flow matching.</li> <li>Investigated rectified flow and stochastic interpolation methods.</li> <li>Conducted research on the paper Energy based diffusion generator for efficient sampling of Boltzmann distributions, successfully reproduced the results, and proposed to replace its core procedure with stochastic interpolation.</li> </ul> <b>Prof. Junfeng Wu's Group</b>   School of Data Science, The Chinese University of Hong Kong, Shenzhen 2024.01 - 2024.08 <ul style="list-style-type: none"> <li>Studied Simultaneous Localization and Mapping (SLAM), Neural Radiance Fields (NeRF), and privacy-preserving techniques in machine learning, including Federated Learning and Split Learning.</li> <li>Contributed to the Split-NeRF project, which applies Split Learning to NeRF to enhance data privacy during 3D scene reconstruction.</li> </ul>	

PROJECTS	<b>Comparing Traditional Methods and Diffusion Models for Hybrid Image and Visual Anagram Generation Tasks</b>   2025 Summer <ul style="list-style-type: none"> <li>Implemented hybrid image and visual anagram generation using diffusion model and traditional methods such as image pyramids.</li> <li>Systematically compared the performance using multiple metrics such as visual quality and CLIP similarity score.</li> <li>Link: <a href="https://github.com/YaoSiqi2003/ECE4513-Image-Processing-and-Computer-Vision">https://github.com/YaoSiqi2003/ECE4513-Image-Processing-and-Computer-Vision</a>.</li> </ul>
	<b>Building Interpretable Emotional Dialogue Agents via Chain-of-Thought Reasoning</b>   2025 Spring <ul style="list-style-type: none"> <li>Developed a unified framework for machine emotional intelligence that integrates emotion recognition, cause inference, shift detection, and dialogue generation using Chain-of-Thought (CoT) reasoning.</li> <li>Link: <a href="https://github.com/YaoSiqi2003/DDA4210-Advanced-Machine-Learning">https://github.com/YaoSiqi2003/DDA4210-Advanced-Machine-Learning</a>.</li> </ul>
	<b>ICU Simulation and Resource Optimization</b>   2024 Fall <ul style="list-style-type: none"> <li>Utilize simulation frameworks to optimize resources in the Intensive Care Unit (ICU), including critical components such as beds and nursing staff.</li> <li>Key components include ICU queue simulation, nursing staff Workflow simulation and various optimization methods such as exhaustive search, heuristics, and Pareto frontier-based method.</li> <li>Link: <a href="https://github.com/YaoSiqi2003/IND-ENG-174">https://github.com/YaoSiqi2003/IND-ENG-174</a>.</li> </ul>
	<b>AI Programming and Applications</b>   2024 Fall <ul style="list-style-type: none"> <li>Implement various applications of AI, including search algorithms, multi-agent systems, reinforcement learning, probabilistic reasoning and deep learning.</li> <li>Link: <a href="https://github.com/YaoSiqi2003/CS188-Introduction-to-Artificial-Intelligence">https://github.com/YaoSiqi2003/CS188-Introduction-to-Artificial-Intelligence</a>.</li> </ul>
INTERNSHIPS	<b>Shenzhen Guanghuiyuan Asset Management Co., Ltd.</b>   Shenzhen, China 2023.07 - 2023.08 <ul style="list-style-type: none"> <li>Studied and participated in value investment research.</li> </ul>
SKILLS	<b>Languages:</b> Mandarin, English, Cantonese. <b>Skills:</b> Python, Qiskit, TensorFlow, PyTorch. <b>Others:</b> Solid math foundation. Eager to learn new things.

Last updated: 2025.8.27