

# Entong He July 26, 2003

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The University of Hong Kong • Pokfulam, Hong Kong Island, Hong Kong SAR • China

## RESEARCH INTERESTS

Quantum and quantum-inspired algorithms, Interplay of quantum non-locality and quantum complexity theory, Statistics of quantum mechanics.

## EDUCATION

### The University of Hong Kong

POKFULAM, HONG KONG SAR, CHINA

#### Bachelor of Engineering in Computer Science

Sep. 2021 - present

- Cumulative GPA: 3.85/4.3 (3.81/4.0 in WES Evaluation) – **top 10** in the same cohort.
- Selective coursework: advanced probability (measure-theoretic), cryptography, advanced algorithm design & analysis, intro. to optimization, principles of operating systems, robotics, multivariable calculus, etc.

### National University of Singapore

SINGAPORE

#### Exchange student at School of Computing

Spring 2024

- Coursework: quantum computing, stochastic operations research, game theory, Bayesian statistics.
- Semester GPA: 4.75/5.0.

## EXPERIENCE

### HKU Undergraduate Research Fellowship Programme 2024 – Advisor: Prof. [Yuxiang Yang](#)

Sep. 2024 - present

- Research focus: topics in quantum complexity theory, quantum tomography and quantum metrology.

### Mitacs Globalink Research Internship 2024 – Advisor: Prof. [Anne Broadbent](#)

Summer 2024

- Research focus: quantum non-locality, algebra of non-local games and quantum complexity theory.
- The project was co-advised by Dr. [Connor Paddock](#).

### HKU Summer Research Programme 2023 – Advisor: Prof. [Chenshu Wu](#)

Summer 2023

- Research focus: sensing with quantum metrology and sensor localization algorithms with quantum ranging.
- The project was co-advised by Prof. [Yuxiang Yang](#).

### Student Teaching Assistant at HKU – Supervisor: Prof. [Tatwing Chim](#) / Dr. [Failung Tsang](#)

Fall 2022 & Fall 2023

- (1) Hosted problem-solving session for COMP2113/ENGG1340 (Programming technologies); (2) Conducted example and remedial classes for MATH1851/1853 (Introduction to calculus/linear algebra).

### Research Assistant at CUHK SEEM – Advisor: Prof. [Daniel Zhuoyu, Long](#)

Summer 2022

- Research focus: resource allocation with proactive upgrade scheme. Proved the submodularity property of 3- and 4-product revenue functions on a variant of the Hamilton-Jacobi-Bellman equation.

## AWARDS

HKU Undergraduate Research Fellowship

2024

2024 Mitacs Globalink Research Internship Award

2024

C.V. Starr Scholarship

2024

HKU Presidential PhD Scholarship (HKU-PS) - conditional offer for Fall 2025 intake

2023

HKU Summer Research Programme 2023 Research Scholarship

2023

2021-2022 Dean's Honour List Award - HKU Faculty of Engineering

2023

36<sup>th</sup> & 37<sup>th</sup> Chinese Physics Olympiad - Provincial Second Prize

2019 & 2020

## PUBLICATIONS AND PREPRINTS

- *Topics in Non-local Games: Synchronous Algebras, Algebraic Graph Identities, and Quantum NP-hardness Reductions* [\[arXiv\]](#)

Entong He

2024

- *QuERLoc: Towards Next-Generation Localization with Quantum-Enhanced Ranging* (Under review) [\[arXiv\]](#)

Entong He, Yuxiang Yang, Chenshu Wu

2024

- *Quantum Ranging Enhanced TDoA Localization* [\[ICASSP 2024\]](#)

Entong He, Yuxiang Yang, Chenshu Wu\*

2024

## SERVICE

- Reviewer for 2025 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2025)

## SKILLS

- **Technical specialties:** (1) **Mathematical skills:** calculus, linear algebra, abstract algebra, measure-theoretic probability, discrete algorithms, optimization. (2) **Programming skills:** C, C++, Python, git, Mathematica.
- **Natural languages:** Mandarin (native) • English (TOEFL: 107, 25 in speaking; IELTS: 7.5) • Cantonese (fluent)