# Haotian Chen (Chahot)

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Google Scholar Technical Blog

***Life Philosophy:*** *"A mighty tree starts from a tiny shoot; a towering building begins with a pile of soil; even a slow horse, through perseverance, can travel a thousand miles".*

I am not a naturally gifted person, but a relentless explorer. My growth has always come from learning through mistakes. In an era obsessed with speed, I believe that true success lies in solid foundations, not superficial results.

Quantum technologies do have promise, but we're not there yet. We won't get there by faking it. Now is the time for hard work, not glib marketing.

## Research Interests

| | |
|---|---|
| Quantum Cryptography | Exploring quantum technologies for secure communication and cryptographic frameworks. |
| Quantum Information | Investigating quantum coding techniques relevant to cryptographic applications. |
| Cybersecurity | Transitioned from broad cybersecurity domains to specialized quantum security research, integrating classical and quantum security mechanisms. |

## Experience

Oct. 2024 — Apr. 2025
**National University of Singapore**, Singapore
**Research Assistant**, Centre for Quantum Technologies
**Overview**: Initially explored various aspects of quantum computing while auditing courses on quantum many-body physics and quantum information theory. Later identified a potential approach for quantum authentication, currently under investigation. The core idea involves certifying quantum capabilities by requiring the prover to invert a unitary operation, with trap gates ensuring security.

Dec. 2023 — Jul. 2024
**Publishing House of Electronics Industry**, Beijing, China
**Independent Author**
**Overview**: Contracted with China's fourth-ranked technology publisher to independently author a technical book. The work aimed to provide a macro-level understanding of the transition from classical cryptography to quantum security frameworks.

Sep. 2021 - Oct. 2023
**Seoul National University of Science and Technology**, Seoul, South Korea
**Ph.D. Scholar**, Department of Computer Science and Engineering
**Overview**: Initially explored various domains in cybersecurity, including blockchain, digital twins, machine learning, and applications in IoT, metaverse, and smart cities. In late 2022, shifted focus toward integrating quantum computing with security frameworks.

Feb. 2022 — Nov. 2023
**Seoul National University of Science and Technology**, Seoul, South Korea
**Assistant Lab Manager**, Ubiquitous Computing and Security Lab
Assisted in research grant applications, drafting project proposals, and coordinating research activities. Managed laboratory operations, facilitated project execution, and ensured smooth communication with funding agencies and institutional stakeholders. Oversaw administrative tasks related to research projects, including documentation, budgeting, and compliance.

## Education

Sep. 2021 – Nov. 2023

**Ph.D.(Program Withdrawn), Seoul National University of Science and Technology.** Department of Computer Science and Engineering.
**Specialization**: Cybersecurity in IoT
**Thesis title**: *A Smart Contract and Digital Twin-based Heuristic Multi-Cooperation Scheduling Framework for Smart Manufacturing in IIoT Environments.*
**GPA:**4.27/4.50, 97.4/100
Discontinued Ph.D. program to pursue a specialized career path in quantum security.

Mar. 2017 – Aug. 2021

**Bachelor of Science in Computer Science and Engineering, Seoul National University of Science and Technology.** Department of Computer Science and Engineering.
**Specialization**: Information Security
**Thesis title**: *Servers—Client Mini-Network Security Prototype Based on VMWare and GNS3.*
**GPA:**3.64/4.50, 90.2/100
**Rank**: Ranked **10th** among Department of Computer Science and Engineering graduates in the Class of 2021.

## Teaching & Academic Services

Mar. 2022 - Sep. 2023

**Teaching Assistant** at Seoul National University of Science and Technology
Assisted in course administration, student coordination, and exam logistics. Responsible for designing exam questions, grading exams and assignments, and maintaining academic records.

Sep. 2019 - Dec. 2020

**Physics Mentor** at Seoul National University of Science and Technology.
Provided one-on-one tutoring to undergraduate students, assisting them in mastering fundamental physics concepts and problem-solving techniques.

## Skills

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|---|---|
| Languages | Chinese (Native); English (IELTS 7.0); Korean (TOPIK Lv.6). |
| Coding | Python, Qiskit, Java, C++, LaTeX. |
| Software and Tools | Docker, Wireshark, Nmap, Jupyter Notebooks, GNS3, VMware, OpenAI API, Scopus, Web of Science, Deepseek, ChatGPT. |
| Miscellaneous | Strategic gaming, fitness and swimming, technical blogging, intercultural communication, psychology and philosophy |

## Recognitions

### Scholarships

2017 — 2021

**Scholarship for Outstanding Achievement for Foreigners** for each semester of my undergraduate studies.

2021 — 2023

**Scholarship for Outstanding Achievement for Foreigners** for each semester of my graduate studies.

## Recognitions (continued)

### Best Paper Award

2022

- The 2022 World Congress on Information Technology Applications and Services Jeju, Korea
- The International Conference on Big data, IoT, and Cloud Computing, Jeju, Korea
- The International Conference on Future Information Technology, applications and services, Seoul, Korea
- The International Conference on Computer Science and its Applications, Vientiane, Laos

### Certification

2023

- **Alibaba Cloud Developer Community-Blogging Expert**. Alibaba Changfengzhe Program.
- **CSDN-Blogging Expert**. Subscriptions more than 20,000 and total number of visits is about 600,000.
- **Examiner**. Working for the security section of the Korean Information Processing Technology Professional Certification Examination.

## Research Publications

### Journal Articles

1. **H. Chen**, A. E. Azzaoui, H. Park, D. Camacho, and J. H. Park, "A comprehensive study of quantum computing technologies in smart city: Review and future directions," *Human-centric Computing and Information Sciences*, vol. 14, 2024, Impact Factor: 3.9, JCR Q2 Top 26.3%.
2. S. Jeremiah, **H. Chen**, S. Gritzalis, and J. H. Park, "Leveraging application permissions and network traffic attributes for android ransomware detection," *Journal of Network and Computer Applications*, vol. 230, p. 103 950, 2024, Impact Factor: 7.7, JCR Q1 Top 4.2%.
3. **H. Chen**, A. Azzaoui, S. Jeremiah, and J. H. Park, "A novel smart contract based optimized cloud selection framework for efficient multi-party computation," *Journal of Information Processing Systems*, vol. 19, no. 2, pp. 240–257, 2023, Scopus.
4. **H. Chen**, S. Jeremiah, C. Lee, and J. H. Park, "A digital twin-based heuristic multi-cooperation scheduling framework for smart manufacturing in iiot environment," *Applied Sciences*, vol. 13, no. 3, p. 1440, 2023, Impact Factor: 2.5, JCR Q2 Top 24.3%.
5. A. Azzaoui, **H. Chen**, S. Kim, Y. Pan, and J. H. Park, "Blockchain-based distributed information hiding framework for data privacy preserving in medical supply chain systems," *Sensors*, vol. 22, no. 4, p. 1371, 2022, Impact Factor: 3.4, JCR Q2 Top 30.9%.

### Conference Proceedings

1. **H. Chen** and J. H. Park, "Quantum-powered secure multi-party collaboration framework for smart manufacturing," in *Proceedings of the International Conference on Big Data, IoT, and Cloud Computing (BIC)*, Jeju, Korea, Aug. 2023.
2. A. E. Azzaoui, **H. Chen**, and J. H. Park, "Qaoa: A quantum approximate optimization algorithm for optimal base station selection in 6g networks and beyond," in *Proceedings of the International Conference on Computer Science and its Applications (CSA)*, National University of Laos, Laos, Dec. 2022.

3. **H. Chen**, T. W. Kim, and J. H. Park, "Smart contract-based secure multi-party computation for cloud privacy preserving," in *Proceedings of the World Congress on Information Technology Applications and Services (World IT Congress)*, Jeju, Korea, Feb. 2022.

4. **H. Chen**, T. Kim, J. Park, and J. H. Park, "Optimized node selection method for efficient cloud computing based on smart contracts," in *Proceedings of the Korean Information Processing Society Conference*, vol. 29, 2022, pp. 48–51.

5. **H. Chen** and J. H. Park, "Bdt: Blockchain and digital twins-based secure framework for efficient data processing in smart manufacturing," in *Proceedings of the International Conference on Big Data, IoT, and Cloud Computing (BIC)*, Jeju, Korea, Aug. 2022.

6. **H. Chen** and J. H. Park, "Quantum homomorphic cryptography-based efficient medical imaging architecture for iomt in smart city environments," in *Proceedings of the International Conference on Future Information Technology, Applications and Services (IFIT)*, Seoul, Korea, Oct. 2022.

7. **H. Chen**, T. Kim, J. Park, and J. H. Park, "Secure multi-party computation based on homomorphic encryption for privacy preserving in iot networks," in *Proceedings of the Korea Information Processing Society Conference*, 2021, pp. 189–192.

8. **H. Chen**, T. Kim, and J. H. Park, "Multi-blockchain system based on directed acyclic graph for improving data processing performance," in *Proceedings of the Korean Information Processing Society Conference*, vol. 28, 2021, pp. 25–28.

### Books

1. Chahot, *Quantum Security: A New Era in Information Protection*. Publishing House of Electronics Industry, 2024, ISBN: 9787121481369. URL: https://www.phei.com.cn/module/goods/wssd_content.jsp?bookid=65109.

## References


**Laurence T. Yang**
Academic Vice-President
Zhengzhou University, China
References available on request

**Prof. Divesh Aggarwal**
Principal Investigator, Centre for Quantum Technologies
Associate Professor, School of Computing
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References available on request

**Prof. Jong Hyuk Park**
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*(Further references can be provided upon request)*