

计算机与人工智能学院

SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE

School of Computer Science and Artificial Intelligence

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Letter of Recommendation

To Whom It May Concern,

It is my pleasure to recommend Mr. Haotian Chen for admittance to the PhD program in the National University of Singapore. I have been currently serving as Academic Vice-President in Zhengzhou University. During the last two years, I have been closely observing Haotian's career development and professional commitment and dedication.

Haotian and I first met during an international academic workshop jointly organized by Huazhong University of Science and Technology and Seoul National University of Science and Technology. Despite the limited amount of time, we spent together during the workshop, I was already impressed by Haotian's initiative and interdisciplinary approach to such cybersecurity related topics. Approximately six months after that meeting, he contacted me to ask if I would be willing to recommend a manuscript of a technical book he planned to write. I made acceptance of his offer contingent on the receipt of a proper book structure and a fully developed manuscript.

Six months later, Haotian contacted me again to tell me that he already had a full version of the book ready for the publication. The title of the book is 《量子安全: 信息保护新纪元》 which may be translated as Quantum Security: A New Era in Information Protection. It was published in July 2024 by the Publishing House of Electronics Industry, one of the major China's technical publishers strongly related to the science and technology. This fact alone reflects the value and quality of the Haotian's work. Comprising well over 400 pages, the book comprehensively covers a wide range of foundational and advanced topics in modern information security and quantum computing. Starting with classical cryptography and information security principles, it moves on to the mathematization and physics of quantum systems, and ends with cryptographic quantum algorithms and practical programming through frameworks such as Qiskit and IBM Quantum. Furthermore, it also touches the field of post-quantum cryptography, quantum-enhanced networks as well as possible applications ranging from blockchain to quantum machine learning. Completing such a challenging project at his career level, Haotian does not only demonstrate his mastery of subject matter but also determination and an inner drive to academically contribute.

Returning to his qualifications for doctoral study, in my opinion, Haotian displays several empowering qualities. First, he can work on a team and individually as well. Regarding the joint China-Korea project, Haotian was included as part of a group of Korean leadership, and from what I have seen, he was active in liaising between institutions. Moreover, in Seoul National University of Science and Technology he also collaborated with his advisor on research and was involved in administrative work. Second, due to my experience as an academic professional, I fully understand that it requires diligence, attention, and



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patience to produce technical manuscripts. Haotian has shown all these qualities. What is most essential, his area of focus has become sharper over time. At the beginning of his research journey, he tried working on different areas in cybersecurity, including blockchain, digital twin, cryptography, and some other related technologies. Later, he has found a clear subject of study in the form of quantum technologies. His work with the Centre for Quantum Technologies at NUS can be viewed as a testament to that.

In conclusion, considering the above insights, I am quite positive that Haotian will not only cope with the challenges that PhD research typically involves, but will also significantly contribute to NUS's research community. I give my fullest support to his application and urge you to provide him with the full scholarship grant, if possible. In case you have any questions or need more detailed information on Haotian, feel free to contact me.

Yours Sincerely,

Dr. Laurence T. Yang, Chair Professor
FCAE, FEIC, MAE, MRAE, MNAAI, FIEEE
Academic Vice-President and Dean
Zhengzhou University, China