Self introduction:

Thanks for giving me the chance. Good afternoon, my name is Zhongqi Xiu, and I am here to introduce myself for the NTU EEE PhD application. I will complete my undergraduate studies in Optics and Optical Engineering at University of Science and Technology of China next year, with a GPA of 87 out of 100. My academic journey has been strengthened by rigorous coursework in Quantum Mechanics, Advanced Photonics, and Engineering Optics.

Throughout my academic journey, I have received several honors and awards, including the Outstanding Student Scholarship and the Endeavor Scholarship, which placed me in the top 5% of my cohort. I also had the opportunity to participate in the Chung-Yao Chao Talent Program, a highly selective scholarship program.

Additionally, I have gained valuable teaching experience as a Teaching Assistant for the Optics B course in 2023 Autumn. Also, my Skills in programming languages include Python, C/C++, and HTML/CSS. I have ability to study and know how to use various frameworks and software tools such as MATLAB, Solidworks, LabVIEW and COMSOL, which are critical for conducting simulations, data analysis in research work.

In terms of research, I have had the privilege of working in two major areas. First, I was involved in single-atom trapping using movable optical lattices, where I successfully demonstrated high-precision atomic position control through fluorescence detection. Additionally, I explored combining cavity cooling with feedback cooling to push temperature limits, verifying this through theoretical calculations. More recently, I have been working on single-photon emitters in atomically thin semiconductors, specifically WSe2. This research is critical to improving the purity and reliability of single-photon sources, which are key to the development of quantum light technologies.

Overall, these experiences have equipped me with a strong foundation in both theoretical knowledge and practical applications, preparing me to contribute meaningfully to the research group and academic community in the Electronic Engineering department

Strengths:

My core strengths lie in interdisciplinary problem-solving, experimental design, and sustained research focus. I have the creative ability to create automatic or computer conrolled things to help the lab deal with some repeat work. Also, I have the habit to make a plan before doing something important and think about the possible circumstances and problems in the process, also the solution for some accidents.

Weaknesses:

In my university life, I could not balance well between my coursework in classroom and research work in lab. One year ago, sometime I will be nurvous for both of them and become upset then could not deal each of them very well.

Why choose Sinapore NTU?

One of the key reasons I chose to apply to NTU is the opportunity to join Prof. Chae's lab. His group’s pioneering research in 2D materials and photonic integrated circuits for quantum processing aligns well with my academic background and research interests. I am particularly inspired by his innovative work in exploring nanoscale optomechanical interactions and developing high-precision photonic systems, which resonates with my aspiration to advance quantum materials and photonic technologies.

NTU’s interdisciplinary culture and emphasis on collaborative innovation align with my research philosophy. I am eager to contribute to pioneering advancements in material and quantum science while advancing my expertise within the university’s dynamic academic environment. Also, Singapore's unique position as a global nexus for scientific excellence and cross-cultural collaboration provides an ideal environment for research.