

Woootinun Ouppapong

Department of Electrical Engineering

wouppapon3-c@my.cityu.edu.hk

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Host Institution: Carnegie Mellon University

Dear Department of Electrical Engineering,

Carnegie Mellon University (CMU) is renowned for its academic reputation and practical curriculum that brings opportunities to bridge the knowledge and industrial needs, especially in Silicon Valley. This factor motivates me to participate in the exchange and experience this dynamic and innovative environment.

CMU stands in the suburban area of Pittsburgh, Pennsylvania, where the nearby areas are not crowded or chaotic, giving a peaceful study vibe to the students and providing public buses and transport to reach the facilities inside the city or downtown for shopping. However, the choices and options are limited, and each shopping center and attraction are so far apart that public transport might take up to two hours. As a result, most students will spend their free time enjoying hanging out with homie, and peaceful activities in the city rather than going to a big event.

Throughout the exchange study, I have extensively experienced the study cultures, educational systems, and CMU's goal of education. I first noticed that each course's rubrics and assessments differed from those of Asian universities, where I have experience at CityU and National Tsinghua University, Taiwan. CMU utilized heavily weighted continuous assignments and workload, including weekly labs and homework. This method ensured that students stayed on track and caught up on the course content weekly, verified by the mean score of every test being significantly higher than 70 percent. Not only did they emphasize academics and theory, but technical classes- especially computer-science-

related courses- would have hands-on labs or projects to help the students understand the practical application by solving real-world theme questions. I have taken control theory courses with two projects using PID and LQR controllers to optimize the vehicle's speed and direction. For microelectronics, I also learned how to use Cadence Virtuoso, an industrial-standard CAD, to design semiconductor layouts and test their performance. These side projects enhanced my understanding and connected my knowledge to what industries are currently doing.

Despite the advantages, I also struggled with the adaptation to the educational structures and styles. Professors only gave basic intuitions and inspirations to the course contents during lectures. Still, many derivation and numerical details were omitted for students to self-learn, creating knowledge between the coursework and covered contents during lectures, giving unknown criteria for how much students should prepare in advance of the course contents. This brought the intensive study environments, expecting students to be on the coursework for 12 hours, including lecture duration. However, it usually exceeded the estimation by far, limiting students to less time for leisure studies or activities, which is my primary obstacle during the exchange. Since I am interested in photonics research, motivated by my last internship at CityU, I am motivated to join CMU's photonic lab directed by Professor Qing Li. This time constraint limited me to study more profoundly in the field, hence yielding experience and knowledge lower than I expected to gain. This is the challenge I found hard to conquer.

During the hard time, having community and connection significantly relieve the situation and reduce stress, smoothening my daily life and learning curve. I received invitations from Thai CMU students to join the activities organized by Thai Student Association in CMU. While most of them are postgraduate students, they helped me through academics challenges and shared some living tips and cultures to stay safe in the city and make friends with other students. This experience truly completed my purpose of exchange by having a good academic and social experience at CMU.

Yours sincerely,

Wootinun Ouppapong