Statement of Purpose

Self-Introduction & Motivation for graduate study

Hello, my name is Yu-Chien Tsai (蔡予謙). I am a senior EE (Electrical Engineering) student from National Taiwan University (NTU) who plan to graduate at June 2021. I applied to NTUEE in the past since I performed pretty well in physics and mathematics. However, when studying in EE I discovered that it is more about passion and interests that can support me conducting further research and endure any longer pressure accompanying with it.

Through different courses in EE, I found myself favoring *Introduction to Computer Networks*. To me, computer networks is more about solving the problems with critical thinking from dozens of different factors and tradeoffs. Researches related to it allow me to be able to view problems in a larger scale and give me more space to clarify my problems. Supplemented by all the skillsets learned from EE, I see myself confronting all the challenges in graduate study with consistent self-improvement and passion.

Academic experiences & Interests related to Computer Science (CS group)

The event encouraged myself to explore deeper is a project where me and my EE teammate Hsuan-Jui Chen (陳宣叡) worked together. We developed an online multiplayer game based from Unity and C#. Most of the time, we were trying to improve quality of experience (QoE) by decreasing overhead, imposing lag compensation and stabilizing the server. Processing through the project, I learned more comprehensively about how network works and how QoE is important.

To challenge my ambition toward this field, I joined Polly's nslab for further study. From reviewing contents of *Linear Algebra* and *Probability and Statistics* to extending paper reading about multimedia networking, neural-enhanced live streaming and operational 5G, I sharpened my basic knowledge. Then I joined the lab project about CDN size estimation later, learning about how to implement open population models, and also realizing the possible repetitiveness works to do in deeper study. Every step enforced my determination and skills I need before studying in graduate school of data science and smart networking.

Senior & Graduate Study Plans

To improve myself besides *Special Project* (專題研究), I have read papers from ACM or IEEE about related topics like p2p or blockchain to widen my vision and to communicate better with others. In the short term, I am taking advanced courses like *Operating System* and planning to take courses like *EE Lab (networking and Multimedia)*, *Network Virtualization and Security* and *Queueing Theory*. For mid-term goals, besides taking more graduate level courses, I will like to focus more on my graduate-school projects and the rapid progress of related knowledge. In the long term, I will consider my next step of either going abroad study, going PhD study or getting into formal jobs.