謝秉均老師：
持續探索 找到自己喜歡又擅長的事

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兩次轉換領域 追求內心志向

擁有德克薩斯州 A&M 大學電機博士學位的謝秉均教授，回憶求學生涯中兩次影響深遠的轉換領域經驗。碩士畢業後，謝教授到一家新創公司工作擔任類比電路設計工程師，工作期間他深刻體會到，電路設計的開發時程相當漫長，從設計到初步產出往往需要半年至一年的等待，且需要投入大量時間、確認各種 design rule 細節。在發覺自己並不適合這種研究型態後，他選擇停下腳步重新思索自己真正想做的方向，最後毅然決定轉而投入網路最佳化的領域。

第二次轉換領域，是在讀博士班的第四年，儘管當時已有一些不錯的研究成果，但他一直對於研究成果感到不踏實。「雖然我能找到最佳策略的網路演算法，但這個『最佳』總是需要建構在許多模型假設上」謝秉均教授說道。而藏在內心深處已久的問題慢慢地浮現「是否有機會在極少的模型假設下，仍然可以找到最佳策略？」同年，在因緣際會下接觸到強化學習後，回到台灣並專注於其研究。

從回答問題到提問　再定義問題

「我覺得專業知識的傳授是相對容易的，而真正不容易培養的是問問題和定義問題的技能。」謝秉均教授同時強調，往往研究問題的架構設定 (problem formulation) 有大概率就已經決定研究題目的價值。因此教學上謝秉均教授喜歡採用問答的方式，不但能刺激學生主動去思考，上課也會有比較多互動不無聊，更重要的是能讓學生第一手體會和拆解經典知識材料，以及他們回答問題所獲得的成就感。這同時也能作為問題範本讓學生參考，進而漸漸熟悉如何提問和定義問題，而在作業設計上亦是如此。

給學生的建議：持續探索 多做加法

強化學習領域中有一個重要的觀念是「exploration-exploitation tradeoff」，簡單地說，若想在未知環境中找出最大化獎勵的策略，持續探索尚未熟悉的領域是必要的，而大學正是探索最佳的時間點，每一次修課、做專題、聽演講、參加活動都是探索潛在喜愛和擅長的領域的機會。因此謝秉均教授鼓勵同學多做加法、少做減法，會有更大機會找到自己喜歡且擅長的事。

另外，他也鼓勵學生盡量利用大學四年培養有效率的自學能力。因為未來無論是從事學術研究或投入業界職場，大部分所需的技能或觀念都不存在教科書中。學會快速找到關鍵資料、自行組織看似毫無章法的知識片段、並系統化吸收是每天工作和生活中必須的技能，這同時也是做大學專題研究或是碩士班最值得花時間掌握的能力之一。

Dr. Ping-Chun Hsieh:
Keep Exploring until You Find Your Passion

Pursuing his passion after two major profession changes

Dr. Ping-Chun Hsieh, with a Texas A & M University doctoral degree in Computer Science and Engineering reflected on his two major profession change journeys. He worked as an analog circuit design engineer in a start-up company after graduating from graduate school. During the work, he often needed to spend a lot of time checking many details of design rules that usually took him half a year to one year. After realizing this type of job was not suitable for him, he then decided to enter the field of Web Marketing Optimization after consideration. It was the first direction change in his career path.

The second time when Dr. Hsieh changed his profession was during the fourth year of his doctoral program. He always felt uncertain about his research even though his research findings were often quite good. “I was able to find the best network algorithm, but it had to be built on hypothesis models”. Dr. Hsieh then continued, “I always wondered if it was possible to find the best network algorithm within the limited hypothesis models?”. In the same year, he started to learn Reinforcement Learning and returned to Taiwan to do more relevant research.

Answering, raising, and defining questions

“I think lecturing professional knowledge is easier compared to training students’ skills to ask and define questions, which are the crucial skills students should have when doing research”, said Dr. Hsieh. In addition, problem formulation can determine the value of research topics. In order to train students with these abilities, Dr. Ping-Chun Hsieh usually encourages students to think actively and raise questions in his class. During this interesting interaction, students can gain a sense of achievement to know the material knowledge and find the solutions to the raised questions. It also provides an example for students to be familiar with asking and defining questions in students’ projects and assignments.

Advice to students: keep exploring and doing things that you are good at

Dr. Hsieh said that “exploration-exploitation trade-off” is an important aspect in Reinforcement Learning. In other words, keeping exploring unfamiliar fields is the most rewarding strategy in its environment. It is very similar to the learning journey that takes place in the university. By taking courses, doing projects, and participating in different activities, students can increase the opportunities for them to find their interests and professions. Therefore, Dr. Hsieh encourages students to do more things that they are already good at to further pursue their passion in life.

He also encourages students to develop self-learning ability, an essential skill in academic studies and industries during the four-year time in university. Dr. Hsieh thinks it is crucial to know how to search for relevant information and digest the knowledge systematically because most of the skills and concepts needed for the future are not from textbooks. Most importantly, self-learning ability is required when doing university projects and completing a master’s thesis.