Statement of Purpose

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After my first experience using Windows XP in elementary school, I was captivated by its practical window function. This sparked my interest in programming and computer science, and I began to self-study by reading relevant books. In junior high, I developed software to calculate rankings and was praised by my classmates. This boosted my confidence in using programs to solve problems, which led me to study Electrical Engineering and Computer Science at the National Taipei University of Technology. However, my knowledge is not sufficient to build a practical and reliable system like Google's search engine because there are many details and technical complexities involved in creating such a system. That is why I am eager to continue learning about software engineering through a postgraduate program in an effort to fulfill my dream of developing a large-scale and widely-used system.

At the end of my freshman year, I joined the TAT App project as a lead developer. TAT is a campus life tool developed using the Flutter framework and used by thousands of students at the National Taipei University of Technology. During this period, our 4-member team has fixed many existing problems. For example, we established a Kanban Board for the project and defined the requirements and use cases for each Release milestone. In the code part, we put most of the existing business logic split into different submodules, combined with Clean Architecture and Null Safety concepts to refactor and maintain a unit test coverage rate of more than 90%. The most difficult challenge I faced was that I was short of the concept to design the operation process when I wanted to fix the problem of account login failure without warning. Therefore, I tried to clarify the login process by drawing a step-by-step flow chart and then solved those problems. The experience of overcoming these challenges sparked my curiosity to further explore how to develop software architecture and manage quality.

My curiosity led me to undertake an internship at LINE, Taiwan's most widely used messaging app company, in my third year. Through agile development on the LINE SHOPPING App project, I improved my team collaboration skills and learned the importance of asking "useful questions" in problem-solving. I also developed strong communication skills and eventually led a 3-member team in the backend department to develop a new microservice architecture system. In this role, I guided team members in using clean architecture and carefully considered the impact of changes on system performance and security. I also learned how to deploy containers to Kubernetes and monitor and schedule them. At LINE TECHPULSE 2022, I shared my experiences of wanting to improve my implementation skills through internships and my work experiences, which helped to structure my thoughts and express complex ideas effectively. It was also a great opportunity to experience the feeling of presenting a world-class product, just like Craig Federighi at Apple's WWDC conference.

As the **scrum master** for the "Software Engineering" course project, I tried to use my agile development experience from the LINE SHOPPING App team to help our 5-person team successfully deploy an open-source project data visualization system using **Spring Boot**. However, I found that refactoring the backend system and adding new Web API designs was a challenging task, and it will be even more difficult for future large services like GitHub. Therefore, I want to further study the knowledge of **refactoring** and **API design** to achieve my goal of maintaining large systems.

It was my passion for object-oriented programming that led me to score 99% in the course with the same title and even recreate a game called "BaBa is You" using OOP in the following year's implementation course. To reduce complexity in the command-passing between objects, my partner and I created a centralized character movement command publishing and collision detection system using the observer and command patterns. After we completed the game, I realized that I am eager to explore the application of design patterns in the interactions of game characters or develop new software using more advanced OOP methods. Besides, my enthusiasm for new technology led me to take the "Smart Contracts" course in my third year. Our team ended up creating a fundraising platform for dog lovers that uses Ethereum and ERC-20 fungible tokens to facilitate transactions.

To summarize, I want to be a part of a development team in a large technology company like Google, Microsoft, or Apple in the future. Programming is my passion and expertise, and using it to change the way the world operates is my goal. Although I am able to achieve something now, I feel that I need to study software engineering more deeply to solve more complex problems. I also hope to have the opportunity to live in the UK to increase my participation in offline activities with large technology companies and related communities.

I believe that the MSc in Advanced Software Engineering at the King"s College London can help me attain my career ambition. Through this program, I will not only gain the abilities that I lack but also be able to explore more unknown fields of knowledge. I am especially interested in modules, such as "Software Measurement & Testing", "Security Engineering", and "Agent & Multi-Agents Systems". After graduating from this program, my short-term goal is to join Google within two years and accumulate more practical experience in the workplace. Then, I hope to become a leader of development teams such as Gmail, Chrome, and Flutter in the next 10 years, leading the direction of world-class software services. Additionally, if given the opportunity, I wish to lead my team to develop software services to help people and countries that have been devastated by war. I sincerely hope you will give my application favorable consideration so that my goal can be realized.