

Statement of Purpose

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Two years ago, I became the maintainer of the TAT App, which gave me the idea to apply for SE MEng. My goal is to use this app to bring convenience to all teachers and students in the school. However, after a few months, I found that I not only lacked a lot of professional knowledge to practice the complete software life cycle but also lacked business-related concepts. Through the flexible design of this Program, I can not only improve my skills in software development but also have the opportunity to become a professional team leader in the future. In addition, the master project can continue to give me hands-on experience and connections in the field of software development. In the future, I want to join a software-related technology company and lead my team to develop products that can change the world.

Specifically, I want to refine my knowledge at all stages of the software development process, and implement the concept of "writing programs can't just be able to move". My motivation comes from my course projects and side projects. At the end of my freshman year, I started to maintain the TAT App, a campus life tool developed using the Flutter framework and used by thousands of people daily. It allows students to quickly check course tables, grades, calendars, etc. and provides graduation Credit calculation, course file download, and other functions. During this period, I improved many existing problems. For example, I established a Kanban Board for the project and defined the requirements and use cases for each Release milestone. In the code part, I put most of the existing business logic split into different sub-modules, combined with the concepts of Clean Architecture and Null Safety to refactor, and maintain a unit test coverage rate of more than 90%. The biggest challenge I face is that when I think about how to fix the problem of account login failure without warning, I lack the concept of designing the operation process. Therefore, I later clarified the login process by drawing a simple step-by-step flow chart, and then found the fundamental problems and repaired them. The process of overcoming difficulties and coming up with solid solutions to problems faced by users sparked my curiosity to use software engineering methods to create products that many people use.

My curiosity led me to do an internship at Taiwan's most widely used messaging app company - LINE in my junior year. The high technology and high quality here shocked me. I first joined the LINE SHOPPING App dev team, and my main task was to complete the requirements raised by the Planner in each Sprint, evaluate the new requirements with other members, and discuss the team's possible improvements. Once I received a job to improve the UI Widgets, but I had to understand the existing implementation methods before I could start, and I was stagnant for a short time. Fortunately, I discussed this with my Mentor and developed a coordinate system conversion formula to solve this difficult problem. In addition, I sorted out the pros and cons of documents in many open-source projects to think about how to improve our project's wiki, so that newcomers can more easily familiarize

themselves with the structure and development conventions of the entire project. During this period, I also served as the scrum master of the school's "Software Engineering" course project, using the knowledge I learned in the company to lead the team's development.

During college, I enjoyed gaining technical experience through hands-on experience. My partner and I recreated the game "BaBa is you" in TypeScript for the course "Object Oriented Design Practice". We use the observer pattern to subscribe and notify the movement events of each character on the screen and use the builder pattern and factory pattern to generate each animated sprite with the PixiJS framework. After combining a self-made map controller and collision detection methods, a Puzzle game with dynamic game rules is reproduced. In addition, I made a Web3 DApp with my partner in the course of "Smart Contract", the purpose is to help dog-loving charities collect funds and ensure that the flow of funds is open and transparent. We created smart contracts based on the ERC20 fungible token standard and Solidity language, and designed a web front end with Ether.js & React. In the end, we made an online fundraising system that can donate Ether according to the dog's name and photo. The practical experience makes me more effectively grasp the details and usage of technologies, and use this to cultivate better technical sensitivity and familiarity, and enhance the ability to develop complete software.

These classroom projects and internship experiences have established my determination to pursue knowledge in the field of software engineering and computer science, so I also served as an intern speaker at the annual developer conference (LINE TECHPULSE 2022) of the internship company last year, taking this opportunity to share skills I learned in the company and the reason why I became an intern in junior year. In addition, I also broaden my horizons in the field of software engineering by actively participating in various communities. When I was a freshman, I joined the Programming Club and served as a teaching assistant for Python, Java, Back-end, and Flutter courses. At the same time, I also joined the Students' Information Technology Conference as a seminar and summer camp volunteer since 2019.

Through the master's degree program, I can continue to improve my ability to solve problems in the software development process. I am very interested in Dr. xxx from the zzz Institute and eager for him to be my supervisor. Dr. xxx's papers such as "zzz" showed me the ccc approach. Under the supervision of Dr. xxx and doing a master's degree at zzz provided me with the best opportunity to enter and contribute to the field of software engineering. It has always been my dream to build efficient, safe, beautiful, easy-to-maintain, and easy-to-extend software through professional software engineering methods, and your project can help me realize it. The program is not only a technical course but also flexibly allows me to hone my leadership skills and corporate thinking. In addition, I can also meet like-minded people in related companies and student organizations, and xxx's powerful network resources allow me to be a part of this ecosystem. I believe this project can realize my ambition of changing the world with a complete software.