

PERSONAL ESSAY

The dream that I have had since childhood, that something I always wanted to do, was creating invention that would help people enjoy their lives more comfortably and safely. After high school graduation, I first became interested in the area of creating new material, and applied to New Materials Engineering. Unfortunately, after a year of studying and after receiving career advice, I came to realize that I was not on the path that I wished to take. Without specific vision, I figured it would be a waste of time to continue my undergraduate studies and decided to enlist in the military. Upon my enlistment, I began to design my future again, but this time thoroughly. Since I had been a private, I spent moments of free time with pen and notebook, drawing a decision tree. From one to another, the lines crept as time passed. By the time I had become corporal, the decision was made: after military service, I would transfer to Computer Science. As most innovative inventions including smartphones were based on computers, I was sure that any repetitive action would be made possible through the use of computers in the future. Therefore, computers would not only provide comfort for human beings, but also reduce most incidents that may occur in our daily lives by the automation of computer systems. If sleeping on the wheel is automatically detectable, if criminal activities are automatically monitored, if responses to natural disasters are made quickly, incidence occurrence rates throughout the world will decrease, and human beings will lead safer lives without fear of accidents, criminals, and disasters. These were interesting thoughts, and so was Computer Science.

I have enjoyed math since I was young, and thanks to thinking based on logic, I even dreamed of programming in C. And, there it was—Computer Science—just like cloths that perfectly fit. I was hooked. During my junior year, I interned for the BoB program of the Ministry of Science, ICT and Future planning: the program that brought me my first experience of research and, at the same time, a contribution to society. During the time, numerous startup companies were actively developing smartphone apps; however, their tendencies to speed through development and their lack of funds led to

overlooking application security. This got me interested in improving app security to protect the public from cybercrimes, which will in turn benefit society. However, the project was not as easy as it seemed. I was the leader of this project composed of 4 other members who had not experienced such subject content, and because of the difficulty in concept, they were on the verge of giving up. After some thought, I realized that my team members lacked basic skills for programming. As a result, we scratched the original plan to meet five hours a day set aside for coding and meetings and instead assigned a single 20 hour weekly session in addition to four days of self-research time to acquire the necessary knowledge for the 20hr coding marathon. With plenty of time to research, coding became a lot more efficient than before, and as the project developed little by little, team members recovered their confidence. In case of problems, I didn't hesitate to visit my mentor face to face, day or night. I even went to the extent of emailing authors of related dissertations dozens of times. Our work paid off at the end of the project when we came out as the most successful among other interning teams. Our program identified and reported critical vulnerabilities of numerous android apps and apps that were used by major banks. In conclusion, I realized how a small mistake made by a developer can have enormous rippling effects. The internship helped me realize also how much my research can be beneficial to a number of people, and from then on, more and more, did I want to do work that will contribute to society and to research deeper into the field of computers.

Ever since I started to get more involved in studying Computer Science, I have had the habit of going to bookstores every weekend to look up computer related technical documents. One day at the bookstore, while I was taking a look at a book related to Python programming, I saw that the popular documents written in Korean were mere translations of American literature that had already been published 3 to 5 years earlier. Thinking that the skills I was learning at the time were already outdated techniques that programmers in American had already acquired 5 years earlier, I felt sheltered as a frog in well—Korea seemed so small. My English at the time was marginal and that's why I refrained from reading books as well as websites in English. But, upon my realization at the bookstore, I found English

necessary as an expert and to become a global leader, and the more curious I became of how academic research is conducted in the United States. So, to study English, I went language training abroad and visited 14 computer science top schools, including USC, to observe research trends whenever I had the chance. The professors were extremely busy, so I asked doctorate students about the manner in which research was conducted with sufficient English probably awkward, however, at the time. With their answers, I was able to compare research in Korea and America. Research in Korea focused on government assigned tasks to make money while that of America was driven for humanity in a truly free environment. To make what I want—the innovation that will change the world—I was filled with hope to see America where research and development occur so freely. In an abroad language training at a school in Philadelphia, I wanted to know how an American computer engineer lived, so using the AirBnB, I focused for two weeks on looking for a host working at an IT corporation. Eventually, I found the host I wanted, and during my two months stay, I received much information on American corporate tendencies, work and daily life of an engineer. The developmental culture in America is flexible and unrestricted, allowing creative research and development whereas, in Korea, development policies and businesses usually passes through complicated processes. My experiences led to the conclusion that I needed to learn the more advanced skills from an IT advanced country, the US. And so, I pledged further academic pursuance at an American university.

My experiences and passion for Computer Science have brought me this far—to the decision to apply to USC—and will carry me on to study with others students as well as professors who have similar goals and interests. By developing professionally and making practical use of research, I shall create program that helps us all live in a safer world. Of that eventual goal, the USC Master program is my cornerstone.