Statement of Purpose

Starting from 17 years ago, when my family bought the first computer, I was so attracted to this very original machine that I spent all my childhood fiddling with it, letting my toy guns covered with thick dusts. The first time that I tasted the joy computers gave me was in a computer class in elementary school. Our teacher secretly installed a video game in all the machines that we used, and when other classmates were only able to follow instructions and type in the alphabets, I had already have the ability to search the MS-DOS system and play the hidden game. This special skill had gave me admirations from the classmates and great satisfactions, which ignite my passion to computers.

As time passed, I was lucky to get into the best high school with a ranking of top 600 in the city. Because of my interests in mathematics and computer technologies, I joined the Olympiad informatics contest team and tried to learn computer programming by myself. In the three years, I started from basic algorithms such as depth first search, building up my self-learning, researching and document reading skills step by step, as well as trained my teamwork skills during frequent academic communications with teammates. As a turnout, not only did I learned more advanced algorithms, data structures, and programming skills, but also the abilities with time management, requirement interpretation and work allocation during intense contests. Most importantly, these experiences helped me understand that algorithms and data structures are the core elements of computer science.

Unlike most of the undergraduate students in China, I recently granted both my bachelor's degrees in computer science from George Mason University, Virginia and Southwest Jiaotong University, China via a dual-degree exchange program. In this program, I completed 90 out of 120 credits that the computer science department required in George Mason University in 2 and a half years and was awarded Dean's List in both semesters in 2013. At George Mason University, because American education emphasize more on practical application than intellectual knowledge, not only did I learned about a number of computer science related concepts and knowledge, but also have extensively acquired the ability to adapt theoretical knowledge to application, which enhanced my research and teamwork skills and laid a solid foundation for my professional career. Besides, I became so adapted to the living and learning environment in the United States that I will not have the obstacles that newcomers usually have. Therefore, I can devote myself into the academic study more easily and quickly.

Noticeably, when students from China realized that in American universities we have complete control of designing and scheduling our own class timesheets, many of them had a hard time figuring out the best schedules or worried about missing the registration deadlines, or even trying to enroll the classes that are taught by professors with high

scores on ratemyprofessors.com. I have also had the same experience, except that I solved the problem by developing a software application to automatically generate all the possible class scheduling solutions based on customized user preferences, such as do not take morning classes and condense all the classes into 4 days. To begin with, I created two web crawler programs, one for gathering data related to George Mason University instructors from ratemyprofessors.com, the other for collecting course data from the university website, and yield useful information by analyzing the DOM trees from the data collected. Then I designed an evaluation algorithm using the information from before to calculate the value of a specific timesheet based on the preference given by the users, and run a simple searching algorithm with a few pruning strategies to generate the top schedules. Even though I was unable to release my work to the public for university network security reasons and intellectual property limitations, I enjoyed every minute of the whole process of solving problems.

During my graduation at George Mason University, the office of international programs and service sent an invitation to my parents. As much as they are thrilled to visit my campus and the United States, they were unable to speak English, and they have had a serious challenge dealing with the flight transitions and almost missed their flight to Washington, DC. So with this thing in mind, when I got back from the U.S., I decided to start a new web service that would help people with the same situation as my parents had. In order to do so, the web service would provide a platform so that users can post their travel plans including their itinerary and a little bit of bounty, and other users who happen to have the same flights can see the requests and offer their help. Besides, users can also ask to see if anyone would help deliver small objects overseas rather than paying for expensive international mailing fees. Just like Airbnb, this application will provide a new way for people to help each other and potentially increase people's social connection radius. It also allows international students and tourists to make a small profit on their trips.

However, I am not yet capable of making this project a practical application. Due to the nature of it, there is a possibility that I need to store and manipulate a large amount of data, such as saving user behavior history and analyzing statuses of the users so that they can be fed with the most useful information; or dealing with the bandwidth and other system performance problems. These requires the ability to create magnificent systems, manage large databases, and so much more I have not yet think of. The USC data science program would be a huge help not only for developing my projects, but also for giving me the ability to learn more advanced technologies and widening my vision to see more potentials in future career. More importantly, USC provides a great environment so that students from different areas of study and cultures can work together easily. I have known one of the USC interactive media alumni, Jenova Chen for a long time because he is now a one-of-a-kind game producer in China. While at USC, he teamed up his fellow student Kellee Santiago, who made an inspiring speech on the TEDxUSC event about how video games can be artistic, to start a game design company and made great achievements in that field. I see this as an excellent gift that

USC gives because it shows that in there, no matter where you come from or who you are, as long as you have someone who appreciate your ideas and dreams, you may find your future partner. This is more than valuable for an international student like me.

Over these activities and experiences, I became familiar with more programming methodologies and I am exceptionally attracted to data science technologies. I would like to become an industry expert to bring people convenience in daily life with data-centric technologies, which almost requires me to be a leader of a group of talented people to make it happen. I used to be uncertain of how to approach this goal, until I saw the Master of Computer Science program with a focus on data science at Viterbi School of Engineering, USC. After reading every word on the website, which introduced this program in detail, personally, I thought that this is where I would belong to, because what I had done and what I have passion for – programming, algorithm designing, data management, software performance optimization, and leadership – could be perfectly covered and concluded in this program.

After over 8 years of learning computer science, I have eventually found what I am mostly interested in and I am prepared to devote myself into the area of data science to bring the world more valuables. I would like to support myself to learn the newest computer science theories and technologies through the Master of Computer Science program at University of Southern California. The variety of projects and specialized curriculums in the program strongly attract me. I also believe that I am capable of bringing abundant resources to university's academic and cultural communications, as well as boost and broaden the development of burgeoning technologies.