My growth environment and hands-on practices cultivate my interest and draw me to explore the depth and width of field I am passionate about.

In my childhood, when the peer child asked parents to buy remote cars, my toys were just cables, switches, sockets and bulbs. The best thing I enjoyed at that time was watching my grandparent (an engineer) fixing the broken appliances. In primary school, serving as the team leader in the robot team was the first time my interest could be shown off. I programmed my first program for the LEGO robot when I was in Grade 5. Although that program cannot really be called as a program since we used the very modern and well-designed GUI programming software, it did raise me a lot of interest and laid a base for the future. In high school, I accidentally attended a competition for the Texas Instruments microcontroller due to another candidate was ill. Although I didn’t get any award since there were only three days for me to prepare and I need to learn the C language from the beginning, this competition did give me a clear mind of the hardware and software relations. Later on, I studied the Mechanical Engineering in George Fox University at first, but later I found that more and more traditional mechanical parts used to control by complicated hydraulic pipes can be easily replaced by the microcontroller and servo motors which the control data can be easily acquired and further processed. This reminded me of the programming experience for the microcontroller in my high school, which led me to change my major to Electrical and Electronic Engineering and reapplied to the University of Nottingham. From Mechanical Engineering at George Fox University in America and finally to Electrical and Electronic Engineering at the University of Nottingham, in-depth study and understanding help me continuously adjust the direction moving forward.

In the first year at Nottingham, I participated in a project to design a robot car to achieve some advanced functions such as line following by applying Open CV to cameras and PID control. Besides, there were some other modules like RFID sensor, gyroscope, accelerator, ultrasonic sensor as well as a remote controller where powered by Arduinos and a Raspberry Pi. In this project, I did 85% of the programming and hardware designing. Therefore, I further realized that programming was the methods and tools for all the engineering subjects. From my perspective, I think if I could learn more programming skills and applied with my electronic hardware skills, I could have a better ability to design and to understand electronic items. Thus, I changed my major from Electrical and Electronic engineering to Electronic and Computer Engineering in my second year.

During the second year, I involved in the electronic project to design a doppler radar prototype. I was mainly responsible for the hardware and circuit design. For the computing project, we built the software which could visualise and load 3D models by using the VTK library. Yet in this computing project, I did not play a critical role for my limited skills. Therefore, during Christmas, I self-studied the C++ (during the first year, we only learnt C) to get the basic knowledge of the Object-Oriented Programming and I successfully applied my skills in the second semester. This gave me a clearer mind that the programming is not that hard than I thought. Actually, I was doing pretty good.

I furthered my programming skills in the third year through the module called Scalable Cross-Platform Software Design. In this module, we further learnt C++ programming skills including generic programming, code optimisation and parallel computing. Besides, we also learnt Java programming for Android application development. Moreover, the optional modules Embedded Computing and Robotics, Dynamics and Control consolidated my programming skills. All these I believe will lay a solid basis for the courses I have chosen for my master’s degree.

Aside from academic learning and projects, I also plunged myself into various internships. In my freshman summer, I went to my friend’s company and helped them write the Android application, for which my self-studied Java and a little bit of python came in handy. Besides, we built a website based on my previous knowledge of CSS and HTML. These awakened me that programming is the best thing I have ever leant. With such accumulation, I started to pay more attention to the relevant subject based on programmings such as artificial intelligence and machine learning. I accidentally got a VR device from my friend this summer, and I played the flight simulator with it. The immersion feeling made me feel that this is the future. Just like 15 years ago, we were still using the CRT televisions, and nobody can believe that the screens can be so tiny like today. I am not a person who can foresee the future or create some revolutionary products. But I can use the current technology and make them the best which will lay the solid basis for the next-generation technology.

All above witness my efforts and will support me to apply for the MSc Advanced Computing at IC, which attracts me for its worldwide reputation, research excellence and well-structured curricula. Besides, the modules I learnt in my bachelor’s degree covered both electronic modules and computing modules: The electronic modules involved from basic electronic components and circuit design to advanced robotics control; The computing modules involved hardware programming such as FPGA Verilog and object oriented programming such as C++ and Java. I believe this knowledge I have learnt have laid a solid basis for the course I am applying for. After graduating from the IC, I will probably join a hardware-based company such as Dji or Siemens instead of an Internet-based company. The hardware knowledge I have learnt will provide me with a new experience in these companies than those people only studying computer science. My computing knowledge I learnt from IC will also give me extraordinary skills in computing and data analysis. Therefore, I believe I can become an all-around talent in the technology and engineering area in my career.