# Personal Statement

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## 1 Introduction

I am Xun Zhang, a senior year student in Computing Science at the University of Glasgow. I joined the 2+2 program between Sun Yat-Sen University (SYSU) and the University of Glasgow (GU), which allows me spend two academic years in SYSU and GU respectively and obtain Bachelor's Degrees from both.

I love Operating Systems and I have a strong background of this, which motivates me to pursue a higher degree in Operating Systems. The following sections will illustrate the background preparation I have made, my research interest and my career goals.

## 2 Summary of My Undergraduate

Graduated from the best high school in my city, I went far away from my hometown, looking for a new challenging start. In Sun Yat-Sen University, all of my courses were taught in English. During the first two years, I have been trained to think in English, to express my idea in English and to write academic essays in English, which helped me quickly adapt to the English-speaking environment in the University of Glasgow.

As a Computer Science student, I have a strong background in C/C++ and my favorite course in SYSU was Data Structures & Algorithms. When I first arrived at GU, I had the feeling that I was more skilled than my classmates in handling pointers and data structures. Students here are mostly programming with Java, which is an Object-Oriented language which does not support pointers and provides a large amount of data structures. Of course Java has its own advantages such as multi-platform support, but Operating Systems uses C for a reason.

I learned a lot of things in GU, including new experience with other programming languages – Python, Java, Basic, etc. Thanks to my C++ background, I learned most of them quite fast. Among all the courses I studied in Glasgow, I found Operating Systems fascinated me the most, which made me so determined that I should devote my following years in it. I could still remember its coursework was to write a disk driver which required a lot of concurrency handling techniques. A lot of my classmates found the coursework very hard to understand but I really enjoyed writing it. I got A4 in both the coursework and the final exam. Another course I love is Advanced Programming, which taught me a lot of important programming skills and important basic concepts in concurrent programming and

I got A1 and A2 in the assessed exercises of that course. I should admit that it is Advanced Programming that gives me the chance to discover the beauty in Operating Systems.

During the summer of 2012, I was honored to have the chance working within a really great project, the Homework Project, which was a collaboration between the Universities of Nottingham and Glasgow, Imperial College London and Georgia Institute of Technology with industrial partners Microsoft Research (Cambridge) and BT. Professor Joseph Sventek was the Principal Investigator of the Project in Glasgow University who asked me whether I would like to work on a part of the Project as my summer internship. My job was to develop a low level application in the controller of the system which worked as a DNS proxy to manage DNS packets as well as other packets if necessary. To be able to work on this project, I spent a lot of time learning OpenFlow, Open vSwitch and NOX. It was quite exciting to work on one of the most popular research topics nowadays. I am truely grateful that Professor Joseph Sventek and Dr Alexandros Koliousis gave me great helps during my internship.

My final year project is about Operating Systems! I went to Professor Joseph Sventek and told him that I would like to do something on Operating Systems. He talked through some of the projects he had at the moment and he saw that I was not very interested in them. So he suggested that there was a potential project about Xen. I almost immediately made a decision that I wanted to do this project! This project is about design and implement a custom scheduler in Xen for emulating large scale of wireless sensor networks. I did a very detailed research on all the scheduler algorithms. And Professor Sventek guided me to a scheduler algorithm design based on a dual core architecture. I set up a Xen system with Mini-OS running on it and I am now working on the experiments to test the performance of Xen Credit Scheduler.

# 3 I Want To Study Operating Systems

Continuing to pursue my dream of becoming a creative scientific researcher, I am eager to achieve a Master's Degree in Stony Brook University. The two years in Glasgow made me realized that it is necessary for me to get a better academic background in the field of my choice. I determine to use my current operating systems skills in the flexible and rich environment of a great university in US. I really hope I could enrich myself in the graduate program, and make my own contribution in this field by joining some research group in the program.

If I have the chance to pursue a Master's Degree in Stony Brook University, I will put my footprints in the field of Operating Systems by giving contributions of primitive ideas and delivering those ideas to end products and customers.