**Applied Program: ECE (Electronic Control Engineering)**

Although I have completed my undergraduate program in Electronics and Information Engineering and is currently working on my Master’s program in Information and communication engineering, I am still acutely aware that that the knowledge I have acquired is not enough to make me the kind of computer and communication expert I aspire to become. To scale new academic heights, it is necessary for me to pursue a Ph. D. program at the highly respected University of xx in order for me to acquire the most cutting-edge knowledge and expertise that may equip me to face the challenges of the increasingly sophisticated world of technology.

To demonstrate my qualifications for your Ph.D. program, I would like to cite, first of all, the systematic undergraduate education I have received at University of xx. My department, which is ranked top 5 of its kind in the entire country, has given me a systematic knowledge base through a whole spectrum of specialized and supporting courses, from which I have achieved an overall GPA of 89, ranked as top in the entire class and top 6 in a total of 17 classes consisting of 527. My distinguished academic performance was indicated not only by the highest-level Scholarship for Academic Excellence I received for four consecutive years but also by a special privilege—I was admitted into Master’s program waived of the otherwise required entrance examinations on account of my distinctive scholastic aptitudes.

It was during my undergraduate program that I laid a solid foundation in electrical and communication engineering by learning important core courses including digital signal processing, principles of communication, Telecommunication and Electronics Circuit, Signal and System, Electronic Circuit Design, etc. My scores for the first two courses were particularly high, ranking top 3 and 2 in the entire grade. In learning electrical and communication engineering well, I have primarily relied on my strong aptitudes in mathematics, which constitutes the very foundation of those two subjects. My academic transcript indicates that I have achieved very high scores in all mathematics courses—during two final exams in higher mathematics, I obtained two virtual full marks, the highest in the entire grade.

Doing a good job in coursework was just part of my academic career and the development of application skills became increasingly important as I delved deeper into those two applied disciplines. In the experiments on electronic circuit and on single-chip computer, I was the first student to realize their functions through a combination of hardware and software design. Other course projects included the development of book management system by means of Sybase Power Builder 9, traffic light control circuit by programming and simulating with VHDL language, and the work attendance management system by C++ language. All those design projects involving both hardware and software deepened my understanding of the knowledge taught in individual courses. They further spurred my interest to participate in various extracurricular competitions. In the “xx Cup” Future Communication World Design Competition and Website Design Competition, I competed against powerful rivals across the country and managed to be the winner of second-class prizes.

What makes me most proud was participating, as an undergraduate, in the research group on the xx, which was part of a xx hi-tech project. I worked on the sub-project xx, focusing on the scalable video coding. I carried out performance analysis of the factors affecting the programming of the progressive fine granularity scalability, and by developing more efficient coding patterns and algorithms selections, I considerably improved the programming efficiency of the scalable video coding. The research findings became the basis of my graduation project, which was given high valuation by the academic panel.

My research capacity has been further improved during my Master’s program since this September. I have been working as RA at the xx of China based in the Research Center for Band Wireless Communication and Multimedia System. Working closely with eminent professors and group members, I am involved in framing the national audio-video standards. The establishment of those standards is an indication of the maturity of an industry and they will govern all the relevant products in the country. Performing my responsibility in this workgroup gives me a strong sense of professional achievement as a researcher.

Learning through practice has been an important way of improving my professional standards. During this summer vacation, I interned at the Customer Service Center of xx City Power Supply Bureau of xx Province. I developed an understanding of the application of information systems, learned UNIX operating system, SYBASE database, TCP/IP network operation and maintenance. By applying my knowledge to practice, I significantly broadened my academic horizon.

As a student of rounded development, I have assumed and performed many extracurricular responsibilities. When an undergraduate, I served as secretary of the Youth League of the class, and  director of the Women Students Division of the Student Union of our Department. By organizing a number of important activities, I improved my leadership, creativity and interpersonal communication. I was also affiliated with our university’s English Association, Computer Association, and Dancing Association. For my extracurricular contributions, I was honored as Outstanding Student Leader. In addition, I am the only one among the 8 Master’s students of our advisor who has won full scholarship at the very outset of our program.

In the field of communication, wireless communication, signal processing and identification, control technique, and artificial intelligence are important issues for research. In wireless communication, the efficiency of transmission and error control are of crucial importance. I am interested in acquiring advanced knowledge and expertise in those fields whereby to develop myself into a communication specialist with talents that the rapidly expanding communication engineering industry of China needs.

To assimilate the kind of cutting-edge professionalism I want, I must receive the necessary academic training through a Ph.D. program at the Department of Electrical and Computer Engineering. As one of the largest engineering departments of a Big Ten research university, your department offers a flexible curriculum, small-college environment, and tremendous academic opportunities. All your courses are taught by professors or industry professionals, not teaching assistants, allowing for ample opportunities for student-professor interaction. I would like to do flexible and extensive foundational coursework first and then narrow down to one of the three curricular tracks—Electrical Engineering, Computer Engineering, or Information Engineering (I have strong backgrounds in any of the three). I have every reason to believe that your program will be a decisive turning point in my academic and professional development.