**Program: Wireless Systems**

The first time I participated in specific research project, my advisor Prof. XXX assigned me to a ”mission impossible.” Two flaw detectors were diagnosed by professional maintenance worker as “beyond repair” and I was required to repair them. My advisor was too busy to provide me with adequate guidance and the only surviving blueprints proved that they did not actually match with the circuits in those machines.

For me, the only way out of this dilemma was to draw up a totally new circuit pattern by examining all the components one by one. In order to prevent the seriously outdated circuit board from incurring any irreversible damages, I did not remove any component from the circuit board in the entire process of re-establishing the circuit pattern. To make matters worse, the signal interferences from different circuit components made my precise determination of the circuit difficult. For nearly a month, I was in a constant state of anxiety. As long as I felt sober enough, I performed deductions and analysis of all possibilities and hypotheses in my mind. Over-fatigue resulted in my contraction of serious cerebral ischemia. Nevertheless, my hard efforts paid off—the two detectors were saved and were put into use again.

Although this research experience happened outside the field of wireless communication, it nevertheless testifies to my academic dedication. As an undergraduate majoring in measurement technology & instrument at the College of Communication Engineering of XX University, arguably the best university in Northeaster China, I have always regarded the attainment of academic excellence and the improvement of practical abilities as my primary objectives. For the past three years in my rewarding undergraduate program, I have developed a systematic command of specialized knowledge in my major, laying a solid foundation in communication engineering. Communication engineering has a special appeal to me because, by applying proper processing to the collected signals, we can retransmit the signals and in the process exercise control over those signals to produce desired effects. As I like to perform analysis and design, I have a genuine interest in the subject. Courses like Principles of Automatic Control, Digital Signal Processing, Principles of Communication, and Signals and Systems remain my favorites. With quite satisfactory academic performance in almost all the specialized courses, I am ranked top 3 of my class. For my distinguished academic performance, I have been awarded first-class scholarship for three consecutive years.

As a student of communication engineering, I have paid special attention to developing my aptitudes in mathematics and in computer science and technology, two important subjects that will prove extremely crucial to wireless systems. Prior to my university education, I have excelled in mathematics throughout my primary and middle schools, and I have continued to develop this talent in XX University. In the mathematical modeling contest launched by my university early this year, I won the first prize and, in September, representing my university, I participated in the nationwide contest of mathematical modeling for university students in which I won the third prize. Besides mathematics, courses in computer science and technology such as Principles of Computer Composition and Microcomputer Interface Technique have enriched my knowledge buildup as an engineering student. In addition, they have also improved my creative thinking and hands-on abilities.

Not contented with acquiring knowledge simply from formal academic education, I have tried to venture beyond the campus into the larger world to apply and test my knowledge. In the first semester as a junior student, and at the strong recommendation of my advisor, I participated in the development of XX for the XX Plant. By carefully studying the overall design plan, I realized that, as the system is to be applied to a wide variety of environments, it must maintain high performance under different conditions of temperature, humidity, pollution and vibration. I collected a large amount of technical literature concerning relevant components from libraries and local manufacturers, comparing and verifying the technical parameters of individual types of components. In the circuit design, I consciously expanded the range of the working conditions that the main modules apply to, thereby providing sound hardware basis for the realization of the entire system. So far, the system has been put into actual operation.

Having savored a sense of achievement in this research project, I have become increasingly aware of the importance of developing my research capacity as an engineering student. At present, I am making extensive research for completing my graduation project XX. The MPEG-4 technology is a live subject for many research teams on video technology and existing bibliography indicates that mature systems have not yet been developed in China. For an undergraduate like me, this is a rather challenging task. Underlying this project is my strong interest in real-time network transmission technology.

Now, on the verge of completing my undergraduate program and having a solid foundation in communication engineering, I would like to apply for a Master’s program in XX. In China, wireless communication is dominated by 2G technology whereas in XX 3G technology has become rather popular and in some countries even 4 G technology has been used, allowing the transmission of large quantities of data with greatly improved quality. As the central technology in wireless communication, wireless systems will determine the future trends of communication technology. I wish to receive more advanced education in this fascinating technology and become a leading specialist in this field in China five years from now.

In my proposed program, I would like to concentrate on (a) Information Theory and Communication Theory (specifically source-channel coding, coding for wireless communications, space-time coding, detection and estimation), (b) Audio-Visual Mobile Internetworking, and (c) 4G Wireless Infrastructure and Blue-Tooth Wireless. The key courses I plan to attend include Digital Communication, Introduction to Signal Theory, Statistical Digital Signal Processing and Modeling，Wireless Networks, and Antenna Theory. I would like to identify Prof. XX as my potential advisor, from whom I can learn a lot in Information Theory and Communication Theory.

As captain of our College’s basketball team, I am fully aware of the importance of leadership, teamwork, and indefatigable will in achieving success in any undertaking. In applying for your program, I have set me to yet another major challenge—to acquire the most advanced education and professional training in wireless systems. But the greater the challenge, the greater the satisfaction that I derive from meeting this challenge.