**Applied Program: Electrical Engineering**

As early as a senior middle school student, I held in great adoration of Chengning Yang and Tsung-dao Lee, two most prominent Chinese-born physicists to have won Nobel Prizes. Thenceforward, I have cherished the constant aspiration of becoming a renowned physicist myself the way these two Nobel laureates did. Even one decade later, I can still recall the first experiment I did in the physics course. When a transmitter in one corner of the lab was connected with electricity, a little bulb connected to a reception antenna in another corner lit up. Though by no means dazzling in itself, this light with its stunning magic ushered me as if into a wonderland, a world replete with intriguing mysteries that only belong to the realm of physics. I believed that I belonged to this special world. That marked the turning point in my life and with it I commenced my quests for answers capable of unraveling those mysteries.

With an unusually solid foundation in physics laid during senior middle school (I received straight A’s in virtually every physics exam), I entered the Physics Department of Dalian Marine University. By the time I graduated in four years, which could only be described as transitory, I found that I had become emotionally attached to this discipline. Realizing that undergraduate studies had only exposed me to the relatively fundamental knowledge of this subject, I embarked on a Master’s program, through very competitive entrance examinations, in fiber-optical communication at the College of Telecommunication Engineering, the University of Beijing Posts and Telecommunications (UBPT).

The moment I came into contact with this brand-new field represented by telecommunications(China tends to lag behind western countries in scientific and technological develop in any given field by many years or even decades), I was filled with excitement over the wonderful prospect that this industry could enjoy. I yearned to be satiated with new concepts, new knowledge, and new expertise and I devoted myself to my program with indefatigable efforts. To my regret, after completing our share of research responsibilities in the 863 Project under the direction of my supervisor, we had no further opportunities to participate in any meaningful projects. I had no alternative but to duplicate the Nonlinear Optical Loop Mirror and its Applications in OTDM System which had already been completed by scientists abroad and to verify their research findings by means of computer simulations. It was precisely those backward research conditions and the lack of challenging projects that prompted me to generate the idea of seeking further studies abroad. I believed that the status quo would impose serious restrictions on the development of my intellectual capacities and on the exploitation of my academic potential.

But for two years before I could bring my overseas studies into a reality, I worked at the leading enterprise in the country’s telecommunications industry—China Telecom Beijing Branch Company. As broadband networks engineer and as technical support engineer, I was responsible for the design and operation of four major projects—Construction of Broadband Integrate Services Experimental Network, Experiment and Construction of Broadband DSL Network in Beijing, Test of Timing Clock of Beijing SDH Networks and Equipment Selection for Beijing CDMA Wireless Network. My distinguished work performance resulted in my being sent to Marconi Company’s American headquarters to receive professional trainings in ATM technology. Nevertheless, I still felt that in a company environment work was routinized and technology lacked innovativeness, falling far short of my passions and ambitions. The work was meaningful only to the extent of serving as a means of livelihood. Refusing to be mired in a mediocre condition, I decided that the time had come for me to pursue research work that I had always loved.

Relying on my solid foundation in physics, my well-trained experimental skills and hands-on abilities that I developed over the heretofore studies and work, I succeeded in entering the University of Texas at Arlington (UTA). In the superior laboratory conditions, for the first time in my life I had a proud feeling of being involved in real scientific research. When I see how my inspirations turn into reality in the laboratory, once again for the first time in my life I feel that I am creating a kind of wealth far more precious and valuable than money –knowledge. I realized that I had made an absolutely correct decision to come to the United States. At the Center of Nanostructure Materials and Quantum Device Fabrication and Electro Optical Research Center, I have done two years coursework and one year and half lab research. They have significantly enhanced my ability to solve research problems independently. Since last year, I have conducted extensive experiments in the field of nanotechnology and Semiconductor and optoelectronic elements. Although the approaches and solutions I generate during those experiments frequently differ from those of my supervisor’s in many important aspects, I have merited positive comments from him. I am fully confident that by the end of this year my research efforts would come into full fruition.

Nevertheless, I still feel discontented. In retrospect, I developed a commitment to scientific research very early and have persevered under the spirit of this commitment. After my arrival in the United States, I realized that there is tremendous research potential in me to be tapped. All I need to do is to find an appropriate academic environment. Even UTA disappoints me in that I have been kept waiting for nearly four year before I could embark on a major research project that promises important research findings. I have come to the conclusion that whether in China or in the United States it is simply a waste of time passively waiting for research projects. Consequently, the best course of action for me to take is to pursue seek a Ph.D. program at one of the top American universities.

The University of # # # comes on top of my priorities because it is a top ranking university in the United States itself and in the entire world. In the field of Electrical Engineering, in particular, it enjoys an unparalleled position. It offers many research-intense programs and the research environment is impeccable. I am deeply aware that for a person who seeks excellence and who wishes to achieve some innovative research results in Electrical Engineering, it is imperative that he or she plunge into an environment which is as challenging and competitive as it is stimulating, promising the realization of one’s ambitions. If admitted, I plan to take advantage of the research resources to their fullest extent and within 4 to 5 years achieve major breakthroughs in research based on what I have so far accomplished. I expect that this may lay a solid foundation for me to undertake lifelong research at some reputed research institutes of American universities or world-class companies like Intel and IBM.

The conventional technology based in communication, control, date processing, signal processing, medical instrumentation and in mainstream computers is in a transition from electronics to optoelectronics and optically enabled technologies. Future generations of integrated circuits, the foundation of current high technology infrastructure, are expected to incorporate significant optical functionality. I hope that my prospective studies at your prestigious universities can solidify my knowledge and bring into full play my latent intellectual capacities. I have experienced too many disappointments and frustrations and what I look for is some truly creative and innovative research work that can lead to important breakthroughs, which can permit me to join the rank of elitist scientists exemplified by Prof. Cheng ning Yang and Prof. Tsung-dao Lee whom I idolize.