**Applied Program: Mechanical Engineering**

**Why I Decide to Pursue a Ph.D. Degree in the United States**

A year ago, when I announced that I had decided to pursue a Ph.D. degree in the field of Mechanical Engineering in the United States, many of my close friends expressed their utter surprise and objection. According to their judgment, I have been proceeding along a successful journey of life. There is no necessity for me to embark on a course of life with filled with self-inflicted pains and difficulties. Indeed, as a talented young lecturer working at a major university whose career is in ascendancy, I possess a sense of pride that many of my fellow compatriots do not possess: a stable job which gives me a strong sense of achievement, three-month paid vacation annually, a warm family life, research papers and research projects that far exceed those of my colleagues both in quality and in quantity, plus candidacy for this year's associate professor of xxxxxx University. If I gain a Ph.D. degree from any of the major Chinese universities, it is almost certain that within five years I would become a professor of the xxxxxxx University. Compared with this, my academic pursuit in the United States would be much more difficult and painful: long separation from my family members, cultural and linguistic disadvantages, possibly a longer program (whereas in China a Ph.D. program takes at most three years).

Nevertheless, I believe that my decision is correct. Out of my serious reflections, I have arrived at the following realizations. First, I can never develop myself into a first-rate scholar if I do not obtain a Ph.D. degree from a first-rate university. Throughout my school life, I have been endeavoring to be the top student of my class. Since I started my career as a teacher, I have also urged myself to be among the best employees. Therefore, to develop myself into a first-rate scholar is currently my most fervent aspiration. However, an event that happened three years ago changed my initial plan of undertaking my Ph.D. studies in China. Three years ago, I was working on my Master's program in motive power mechanical engineering in xxxxxxx University, which ranks among the top 5 universities in China. Its Engineering Department ranked third. At that time, my supervisor Prof. Jeff was involved in the research on the Steam Injected Gas Turbine Technology, with a state sponsorship of x00,000 US Dollars. It was one of the major research projects at that time and represented the highest research level in China in its field. When I helped my supervisor consult relevant technical literature, I was regretted to find that American scientists had already undertaken similar research ten years before that and a large number of research papers had already been published. What we were doing was simply repeating what our American counterparts had already done! The fact that what appeared to be the most sophisticated research in a first-rate Chinese university was actually a mere repetition of the research work of other scientists in more advanced countries saddened me. I decided that I would not undertake my Ph.D. program in any of Chinese universities, even a first-rate university. The United States would be my choice because only in such a country was it possible for me to perform the first-rate research and become a first-rate scientist.

On the other hand, only by pursuing my Ph.D. degree overseas will I be able to improve the living conditions of my family and allow my family members to live a better life. I now enjoy happy family life. My wife is a doctor in our city's largest hospital and we have a lovely three-year-old daughter. They love me very much and I love them very much too. They fully support me in my efforts to seek further education in America. It is precisely my love for them that makes me feel responsible for enabling them to live a rich life. It is obvious that only my career success can fulfill this wish. Upon returning to China after completing my prospective degree program, my Ph.D. degree from a renowned American university will become a golden key to the even greater success in my career and in my family life. By helping many Chinese enterprises improve their technological level and realize immense profits, I will undoubtedly be rewarded with an infinitely successful career and an enviable income.

**My Study and Research Experience**

In 19-- I was enrolled in the reputed xxxxxx University where I specialized in the motive power mechanical engineering. As a top xx university among a total of 1000 institutions of higher learning in China, it is sometimes referred to as "the Oriental MIT". Also, as one of China's xx universities with the longest history, it is the cradle for numerous accomplished engineers and important people. Mr. , the current President of China, is a graduate of this university. As a top university, its entrance examination is inevitably extremely competitive. A total of 300 freshmen were admitted into the Department of Engineering and my score at the entrance examination was the highest. For the first two years of my undergraduate study, my GPA ranked among the top three of the entire class. According to the conventions of the university, top students have the right to attend whatever courses offered by other departments as auditors. Hence, for the last two years, I audited many courses that I considered to be both interesting and useful such as Automation Control Theory, Signal and Systems, and Digital Signal Processing at the Department of Automation, Operation Systems and Data Structure at the Department of Computer Science, Digital Circuits and Analog Circuits, Principles of Communication, and Computer Principles and Interface Technology at the Department of Electrical Engineering. Although attending too many courses at the same time affected my GPA negatively, the interdisciplinary studies that I carried out during this period exerted an important impact on my outlook, making me realize that a well-trained engineer must possess knowledge in diverse fields. Only by means of a comprehensive application of knowledge in machinery, computer technology, automation and electronics can an engineer produce useful products and valuable research findings. Before I graduated, I chose Prof. Jeff as the supervisor of my graduation project and thesis. At that time, Prof. xxxx had just returned to China from Japan as a visiting scholar and from him I learned programming by using C Language. I became one of a limited number of people in the university who could manipulate C Language for programming. For three months, I solved the data transmission problem between a FFT analyzer and a PC of B & K Company through GPIB Interface using C Language. At the end of my thesis, I attached the research findings of a computer virus monitoring software that I developed during this period. On account of those research results, Prof. xxxx praised me as "the most outstanding student" he had ever seen. Throughout those years, we have been maintaining a close friendship.

Perhaps the fact that both my parents and my elder sister are all teachers prompted me to become a university teacher at the College of Marine Transportation in xxxxx University. I taught Automation Control Theory and Automation Equipment of Ships. I enjoyed my teaching career. In 19---, I collaborated with two friends and established our xxxx xxxx Computer Co. Ltd. Our 3-person company was very small at the beginning, involved in the development and sale of computer software and I was the company's technician. Apart from my regular teaching at the university, I devoted all my spare time to the software development. In this period, working till 2 o'clock in the morning was common for me. The first software that we developed was called Hotel Management and Telephone Calling Fee-Calculation System. In this system, I used Foxpro as the front-end database to manage all the data of the hotel and in the rear-end database I used Assembler Language to develop a built-in stationary program (TSR) that resembled DOS virus, whose purpose was to complete the data communication between the PC and hotel's programmed exchanger. This technology was quite sophisticated at that time.

However, the initial application of this system turned out to be a failure. After 5-day operations, the system collapsed. In the following three days, I ferret out the cause of the disorder and eliminated all the BUGs. This accident made me recognize that there was a world of difference between an artifact created in a university laboratory and a truly commercial product. Due to its advanced technology, we sold five sets of this software system that year and later on sold another 15 sets. Even now, which is eight years later, six hotels are still using our software. The central parts of this software technology have been incorporated in the three formal research papers that I have published. Later, we developed The Tax-Payment Database Management System for xxxxx Municipal Taxation Bureau and The Hospital Fee-Charging Management System for xxxx Municipal Public Health Bureau. The sale of those software systems was highly successful and by the end of 19-- the number of employees in our company increased to 15. I was the chief engineering of the company. My three-year experience in the company enabled me to further develop the ability of analytical reasoning and professional expertise that I acquired from my university training. It also enabled me to develop such precious assets as leadership, effective interpersonal communication, and hands-on and problem-solving skills. I believe that those qualities in me can ensure a higher probability of success in my future career that other applicants.

Nevertheless, I decided to leave that company because the 3-year work in the company had exhausted all my 4-year undergraduate knowledge. What I needed most was to return to my Alma Mater to "upgrade" and "update" myself. In September 19---, I embarked on my Master's Program in motive power mechanical engineering. My supervisor was Prof. Jeff, my former class director. I chose Digital Analysis and Processing of Burning Flames as my research subject. I looked up the latest international literature and research findings in this field. I built a quartz glass burning chamber for conducting my experiments and took pictures with a digital camera of the flames under different working conditions. On the basis of my solid computer expertise, I developed my own software to make digital analysis of the flame images and studied how to infer in a reversed way the distribution of different temperature fields based on the digital flame images. All the research findings in this project were subjected to the most rigorous theoretical analysis and experimental verification. Eventually, I obtained my Master's degree with extremely high comments from my supervisor. The two-year-and-a-half program taught me how to single out an academically valuable research project and how to undertake and design that project.

In March 19---, I returned to the xxxxxx University to resume my teaching career. I continued to teach two compulsory courses Automation Control Theory and Automation Equipment of Ships. I also deliver two optional courses Computer Principles and Interface Technology and Computer Network. I am one of the best-acclaimed teachers of my university and, as one of the three key members of a research team, I participate in research project called Diagnosis of Twisting and Vibration Disorders in the Axis of Vessels which is sponsored by xxxxx Provincial Government and xxxxxx Municipal Government. My responsibility is to design the computer interface and software. For the algorithm of disorder judgment, we mainly apply the research findings from the fuzzy mathematics. So far, we have produced our sample machine and we are now busily testing the machine on actual ships. The research results in the first stages of the project have won the Excellent Research Award of Scientific and Technological Progress of xxxx in xxxxx.

Over the past three years, I have published a total of 15 research papers, among which two were published in English at international symposiums. There are approximately 50 teachers in the College of Marine Transportation of xxxxx University, I have published by far the largest number of research papers. The University issues its annual K.C. Wong Award to two most distinguished among a total of 800 young teachers and I am one of the two winners of this award in xxxx. I have also been nominated as a candidate for associate professorship and I am a member of the China Mechanical Engineering Association, member of the China Computer Association, and the director of the Computer Science Team of xxxxxx Provincial Vessel Manufacturing Engineering Association.

My Understanding of the Science of Mechanical Engineering  
For the past ten years since I graduated as an undergraduate, I have been engaged in the multi-disciplinary research of mechanical engineering, computer technology and automation control. I believe that the technology of electromechanical integration plays a decisive role in both the industrial and the economic level of a country. Out of my contacts with the entrepreneurs of many medium- and small-sized manufacturing plants in xxxxx, I have noticed that their greatest concern is how to introduce advanced technologies to renovate the existing outmoded electromechanical equipment in their factories so that they can enhance the competitiveness of their products. It has been said that mechanical engineering is a conventional research field. I maintain that, with the increasing penetrations of computer technology into this field, this time-honored discipline is being rejuvenated. A host of new issues await to be studied and solved. It is becoming an immensely fascinating subject with an infinite prospect of application, making me all the more enamored of it. At present, I am most interested in the technology of electromechanical integration and in the advanced manufacturing technology/CIMS technology. Equipped with 10-year experience of study, work and research, I am fully convinced that I am qualified to undertake further research in those fields.

More than ten years ago when I was a mere junior undergraduate, I already learned from my teacher about the esteemed University of ----------. As a reputed university that is widely influential in the field of mechanical engineering, your university has attracted many of my teachers and outstanding alumni to study there. Their stories about your university have been lingering in the innermost recesses of my heart for the past ten years. Today I would like to follow their footsteps and send you my application for a Ph.D. Program in Mechanical Engineering at your prestigious university. I would greatly appreciate it if you could accept me into your program and offer me whatever financial support that you might be able to offer.

**My Future Career Objective**

I plan to return to China upon completing my degree program at your university. More specifically, I will return to xxxxx University to teach and research as a professor, to contribute my newly-acquired knowledge of mechanical engineering to my future students. On the other hand, I will cooperate closely with the local entrepreneurs in the manufacturing sector to translate my research findings into practical products. With my due efforts and those of my colleagues, I hope to help xxxxx University develop its first-rate mechanical engineering research center.

**Epilogue**

In the course of my life heretofore, I have come to many important cross-sections and had to make many difficult decisions and choices. Faced with new challenges each time, I have always required myself to select the most difficult, the most "thorny" route. I have done so out of the sheer belief that "no pains, no gains" and that only the hardest efforts can lead to the most exciting and most glorious achievements. At this very moment, I seem to be standing at yet another cross-section of my life. My conviction is that my determination to pursue my Ph.D. Program at your respected university is definitely one of the many correct decisions that I have made in my life.