**Applied Program: Electrical Power**

I often admire the various and marvelous science and technologies created by man, and also exclaim the rapidly changing developments of the city that I live in----Shenyang, the largest industrial base in northeast China. However, when I further inspect such progress and development, what I am actually seeing is the backwardness of our domestic electrical power system, especially the distance of over twenty years in the electric drive and controller system from the international advanced level in this professional field. The application of electric system plays a very important role not only in national production, but also in people's lives and other aspects. But it is true that our domestic core technology and equipment in this field have long relied on the import. This reality forces me to try my best with a strong sense of responsibility to change the current situation and devote all I have to realizing the dream of harmonious development between man and energy resource.

I appreciate very much the saying "Interest is the best teacher." From an early time, I began to take part in many creative activities. Especially when I was in middle school, I invented an electrical motor with magnet and clue, and made it as a drive setting in a remote-controlling model. With this device, I got the first prize in the Design Contest of our city. This experience greatly aroused my interest in electric motor and related knowledge so that I chose Electric Engineering and Automation as my major when I went to university.

I was soon deeply attracted by the broad range of knowledge that my undergraduate studies unfolded to me. The courses, such as Basic Analog Electric Technology, Basic Digital Electric Technology, Electric Drive & Controlling Principle and Automatic Controlling, opened for me one gate of another into the core professional technical theories, and helped me grasp deep and all-round knowledge on electric motor and its system and controlling.

Meanwhile, I actively undertook every project and tried to put the knowledge I owned into practice. In the second year at university, I made full use of the courses Basic Analog Electric Technology and Basic Digital Electric Technology, to self-design and create a digital voltmeter successfully in our Digital Electric Laboratory for automatic system. As a senior student, I designed a power supply system for factories and with the vector controlling technique I designed a speed setting controller for electric motors. From all these, I learnt that, if we regard the class as a palace in which knowledge is accumulated, then the laboratory should be a golden place for experience and practice.

I encountered some difficulties when I designed the speed setting controller for alternating-current motors with the vector controlling technique. Compared to direct-current motors, alternating-current motors are simple structured and easily protected with a low cost; but because the alternating current goes through the winding of stator and rotor in the alternating-current motors, there should design a speed setting controller for alternating-current motors. The lectures in my university I believe have failed to give us a deep introduction about the vector controlling technique so that I had to collect and consult a large of materials myself during my designing process, of which most were the advanced technical information from America, and all these material and information finally set up a steady theoretical foundation for my successful project. I used computer simulation in my experiment to test all through the system, which greatly helped me increase the efficiency and also avoid many mistakes. In this experiment, the process of collecting material greatly widened my views of knowledge; at the same time, the experiment itself put all my knowledge into the practice creatively. In this way, I gradually improved my understanding on advanced science and technology and also increased the theoretical level of practice.

At present, I am practicing at Shenyang Electric Motor Plant. I design a speed setting system for direct-current electric motor with Programmable Logic Controller (PLC). During this period, I come into contact with the core technical parts of the production, and what I have seen is that there is still large distance between China and the international market not only in the technology of producing large electric power system, but also in the complete products. Most of our key advanced equipment has to depend on importing, for instance, the domestic self-designed large power vector controlling for electrical motors has serious problems in its stability so that we have to import such machines from other countries.

I feel great responsibility on my shoulder to change such situation. If there is not a strong support of the electric system, there will be a serious crisis in our products and even in people's everyday lives. As a result, what I should do now is to study the modern and professional knowledge on electric motor abroad, and then come back to my motherland to help her keep up with the international steps of developed countries.

The University of Clemson, which I am applying for, enjoys a high reputation in America for its long history and strong capabilities of science and technology. This university provides its students with well-equipped laboratories and creates a comfortable condition and circumstance for scientific researches. I hope that I can have such opportunity to share this resource, try to study theoretical knowledge well and put these theories into experiments. With abundant researching achievements, I will come back to China to promote her developments in related professional field, shorten the distance of technical level between her and developed countries, and thus carry out my own dream into reality.

**Recommendation Letter**

Dear Colleagues:

Mr. Fitzgerald Wang is currently applying for admission into the graduate school of your university. As far as I know, your university enjoys a very high reputation in the area of electrical engineering and automation. As professor and Dean of the Department of Automation of Shengyang Chemical Engineering Institute, I am very delighted in writing this recommendation letter on behalf of Mr. Wang because he used to be an excellent student in our department.

Mr. Wang's scholastic performance was rather distinguished. When he was a third-year student, I delivered a course to his class, Electromachinery and Drive Theory. The serious attitude with which he studied this course impressed me very much. He conscientiously finished all the assignments, both in class and after class, and conducted all the experimental coursework with meticulous attention. The score (93 points) that he achieved in the final examination can demonstrate his strong comprehension of academic matters, his hands-on abilities, his analytical capability and his sound judgment.

As chairman of the Academic Division of our Institute's Students Union, he displayed strong ability in leadership and organization. He treated his fellow students amicably and thus was on very good terms with them. In return, they liked to associate with him and discuss problems with him. Mr. Wang directed and organized a series of important academic events of our Institute, such as seminars at which students exchanged their respective experiences of effective studies, English competition, debates, speech contest. All those activities proved highly successful. Endowed with a strong willpower, he was always prepared to surmount difficulties and to face challenges. At one point, our institute organized the student leaders on a obligatory mission to conduct scientific education to local dwellers in a remote mountain region. Mr. Wang and others walked for more than ten miles in wind and rain until they reached their destination. There, they stayed for a month and acquitted themselves satisfactorily despite the short of water, electricity, and the biting of mosquitoes.

Mr. Wang is not only academically but also mentally prepared for his further studies. As he did in the past, he is ready to exercise his industry and perseverance in his studies. All those will serve as important guarantee for his successful completion of his program. Thus, I strongly recommend him and I am sure that you will feel proud of admitting him into your school because he will prove worthy of your expectations.