**Applied Program: Mechanical Engineering**

In China there is an old custom called one-year anniversary fortune-telling: by the time the new born is one year old, its family prepares a lot of objects of different shapes and functions for it to choose from. The first object that attracts its eyes and hands is supposed to be a symbol of the baby’s future career. Unscientific as it is, it truly predicted my profession and future. At that time the toy car in my hand greatly aroused my wonder at the wheeled monster. As I grew up, I was no longer satisfied with collecting car pictures and making car models. I was determined to be an expert in automobile design and manufacturing. As it turned out, the specialized education I have received in both my undergraduate and graduate programs have fully equipped me for undertaking more ambitious academic tasks in the field of mechanical control.

I know I am no genius and I also know that success is to result from extraordinary efforts. I chose as my starting point Beijing Institute of Technology, one of the 3 universities in China that majored in automobile research. There besides the specialty and theory studies, I made use of my free time to read large quantities of references both in Chinese and English, to catch up with the latest development in theory and to be immersed in the widest range of information. As a graduate, my academic performance had always ranked No.1 in my class, especially for the 20 also specialty courses in the junior and senior years, among which Automotive Manufacturing got full scores. For 4 years I got the first or the second class scholarships consecutively and was awarded many honors such as Outstanding Student, Outstanding Cadre, as well as appraised by the department leader as the best student in the recent 5 years.

The strong interests in automobile forever stimulated my enthusiasm in study and motivated me to equip myself with specialty knowledge to the greatest possible extent. Apart from the study task, I also served as teaching assistant in the course of vehicle electronic technology. As a post graduate and with the specialty knowledge getting more and more profound, I worked as a research assistant in the laboratory and came to better my ability to apply theory into practice, thus capable of carrying out scientific research activities independently. Meanwhile I took part in many research and development projects and accumulated rich experiences on that. In the joint-venture project between our school and the first automobile manufacturing plant in China, I was responsible for building up experimental framework composed of the electric motor, hydrostatic gearbox, loading device and the control system and carried out the functional adjusting of the automatic shift, thus getting a better knowledge of the power train. The experiment was a great success and provided reliable support for the overall vehicle experiment.

The thesis for my master degree is Research of Loader with Automatic Shift Technology and Fuzzy Control Strategy. At present, China’s research on automation of construction machinery has not started yet. I choose this subject in order to realize automatic shift control and computerization of construction machinery. It is mainly concerned with coordination control of the engine and the gearbox, power distribution, recognition and fuzzy control of the working state of construction machinery and so on. This is based on the joint venture----the automatic shift control of ZL50 loader between our school and a gearbox manufacturing plant in Hunan. The purpose of this research project is to change the loader’s original manual shift into automatic shift control. The stumbling blocks here are the recognition of different working states, the coordination of the engine and the gearbox and the realization of the potential engine power to the greatest possible extent.

In that project I was responsible for the whole process from the project demonstration, program selection, simulation research and project implementation. We largely enhanced the automation level and working efficiency of ZL50 loader and made convenient its operation. At the same time I benefited a lot from a deeper understanding of the essence of automatic shift techniques. Apart from the completion of my graduation thesis and based on the experimental statistics and the project’s early stage work summary, I published, on the national central periodical named Construction Machinery, a paper titled Research on the Mechanical Parts of Electronically Controlled Automatic Shift on ZL50 Loader and also another paper, on Construction Machinery and Equipment, titled Research of ZL50 Loader with Electronic Controlled Automatic Shift System, which has the project outcome as its theoretic basis. They were highly praised by experts in this field for their values in academic research and of creativity. Because of the need to collect large quantities of experimental data for possible future renovation reference, I independently developed a set of data collecting soft ware, with the transmitter soft ware written in C language and the receiver soft ware written in VC++, communication between the two through series connections. This soft ware was highly usable throughout the whole experiment and greatly increased my work efficiency.

Automobile industry is the main industry for a country. It started very late in China and lags far behind the advanced countries such as the United States, Germany, Canada and others, its competency comparatively low. To shorten the distance, it is necessary to go abroad and learn from the developed countries the advanced automobile manufacturing technology and for that reason it is also urgent to perfect my knowledge structure and enhance my specialty level. The specialty of mechanical engineering in University of Michigan ranked No. 11 in the United States. It has rich technical resources and its research centers and laboratories are proud of state-of-the-art equipments. The research work of Vehicle Power train Dynamics and Control being carried out there by many famous professors well fits into my postgraduate research work. So I wish to continue my education in your university. A scrutiny of my educational background and of the research projects that I have performed will indicate that I have a solid foundation in mechanical control. Therefore, my knowledge and specialized trainings in mechanical control will also enable me to prove competent in control-related programs. If my qualifications suit me also for a program in mechanical control, do not hesitate to transfer me to such program because I am equally interested in those programs. My study plan is to learn the fundamental knowledge first and then, based on my own research background, decide on a research direction that will best facilitate the development of China’s automobile industry. In this way I will try to work out valuable academic achievements and write high-level doctorate thesis. Eventually I will return to China to contribute my learning to the development of automobile industry in my fatherland and thus realize the dreams of my childhood.