**Applied Program: Wireless Telecommunications**

On August 27, 2002, at the Central Institute of the Datang Telecom Technology and Industry Group based in Beijing, a young woman, full of energy and self-confidence, was giving a presentation entitled “The Design of the Switching Numerical Method of the Radio Resource Management (RRM) Strategy in TD-SCDMA, and the Testing of Its Simulated Systems,” which received rapt attention and high remarks from all the experts in Computer and Telecommunications who attended the meeting. That woman was I. At present, TD-SCDMA, W-CDMA, and CDMA 2000 are considered the main technological standards in the third generation of the world’s technological development in mobile telecommunications. And the design of a switching computation method for the RRM Strategy is a key element and technological crux for the TD-SCDMA technology. In retrospection, I found that it was my great enthusiasm for mobile telecommunications, and my persistent pursuit of accuracy and perfection that have helped me win accolades from colleagues and experts.

In China, since the TD-SCDMA uses a smart antenna, it makes a demand for a finer research on the computation method for the RRM Strategy, in areas such as PC, DCA, and HC. To me, a new starter in the company, it was a real challenge. Since the research team was new, it lacked engineering data and practical experience, although the equipment of the lab was quite advanced. It was only after much library research, thinking, and consultation with experts did I find a RRM computation method suitable for a smart antenna. Because a smart antenna has its advantages of a more accurate VE locating and reduced searching areas, this computation method effectively lowers the complexity of the switching process and its failure rate. During the time when I worked for the project, I often stayed up several days in a roll to perfect a lab test. But I also derived an enormous sense of satisfaction and fulfillment after overcoming obstacles, which more than compensated the pains and difficulties that I had to go through.

The rapid development of mobile telecommunication technology places a high demand on professionals working in this field. To a certain extent, it has to be a labor of love. My keen interest in mobile telecommunications emanated from the concept of “personal communication.” During my undergraduate years at the Northwest University of Industry, I spent much of my spare time browsing over professional publications and journals, to keep myself abreast of current developments. The concept of “personal communication” I encountered during this process impressed me immensely. A system of “personal communication” is one that allows the user to communicate at anytime, anyplace, to anyone, and in any way. It painted such a beautiful of picture of a future society that I became fully convinced that it is a subject well worth my lifelong pursuit. This was why I chose Mobile Telecommunications as my area of specialization in the graduate program. As a graduate student, I completed several research projects independently and successfully, including, for instance, “Turbo Code and the Application of Its Coding Concept.” In short frame conditions, the Turbo Code, with its improved application in engineering, seems to have a bright future in real-time voice-data service (Please see the attached article). After completing my graduate degree, I entered Datang Group, a pioneer in China’s software development. Here I did software design for the switch control template used at the RNC equipment for the TD-SCDMA system, and developed a switching computation method for the RRM Strategy. I went through the entire process of software design for the switch control template for the RNC equipment, from topic analysis to the project outline and then to actual program writing.

The present development of telecommunication technology indicates that the smart antenna, software radio, and the transmission technology of subline 下行 high-speed subdivided exchange data (下行高速分组交换数据传输技术) are key technologies for today’s mobile telecommunications. Software radio, in particular, has attracted much public attention. The use of DSP and software to solve the problem of wireless interfaces of diverse standards on a public hardware platform has become a major issue pursued by many professionals in our field. I too hope to make my own contribution to the technological development in this area. In the next few years, the traditional concept of using chips to build wireless equipment for mobile telecommunication will be seriously challenged. In recent years, the technologies and standards of the third generation of mobile telecommunication have been rapidly updated. Software radio, I believe, will be the future of our trade.

My desire to know more about computer engineering prompted me to rise above my present conditions. The United States, as technological superpower, have first-rate teaching faculty and research facilities in the world. Its ideological openness and tolerance make a sharp contrast to Chinese culture, which tends to value tradition rather than innovation. Wireless telecommunication may be said to be one of the newest research areas, and it is new concepts and new vision that give life to the industry. I believe that in the fine research environment in the United States, I will be able to make “shortcuts” in attaining my academic and career goals.

I would like to apply for admission to the Center for Wireless Telecommunications of Virginia Polytechnic Institute and State University. As the most prestigious research institute in Wireless Telecommunications, the Center has a large number of famed scholars and professionals dedicated to the theoretic research of Wireless Telecommunications. Meanwhile, it maintains close contact with the telecommunication industry, and in this way can test the theory in practical experimentation, which in turn promotes theoretic research. It is an ideal place for me to fully develop my research potential.

I look forward to finding a teaching position at college level in China after completing my graduate education, which will allow me to continue my research work in Wireless Telecommunications. I will impart my theoretic and practical knowledge to my students, and hope that this will benefit China’s wireless telecommunication industry, and society at large. I will make every effort to make the idea of “personal communication” a reality.