**Applied Program: Computer Science**

Life is the greatest miracle on the earth. Mathematics is the language employed by the Creator to describe the universe while computer is the most powerful tool that mankind has invented. It is bioinformatics that has effected an organic combination of the three, making it possible for mankind to unravel the mysteries of life. With the full development of mathematical theories, the increasingly maturation of computer technology, and the biological research reaching the molecular level, the researchers in the relevant fields all tend to feel very excited over the historical moment that they are confronted with. I myself feel fortunate for being one of them.

Ever since my middle school life, I have been deeply fascinated by diverse theoretical issues in physical sciences. The mysterious world of mathematics and different life phenomena in nature captured my imagination. When I found that mere coursework could no longer satiate my strong craving for knowledge, I resorted to extensive self-education to look for answers from a wide range of books. As a result, I won quite a few first prizes in mathematics, biology and physics contests of XX Province and of XX City by applying my comprehensive knowledge and skills in those subjects.

By the time I was to start my university education, I was faced with the difficult task of making a choice between biology and mathematics as the area of my specialization. Ultimately I chose neither of them. What I actually chose was computer science because I believed that this specialty could allow me to bring into full play my special aptitudes in mathematics on one hand and fulfill my wish of exploring the mysteries of life. On the merit of my very distinguished performance in a number of provincial- and city-level contests in science and engineering, I entered the Department of Computer Science and Technology of XX University of China, one of the top-ranking universities in the country, exempted from the otherwise requisite entrance examinations. This was itself a special honor for a high school student, considering the fact that there are millions of high school students nationwide compete for limited opportunities of college admission every year by taking the very challenging national entrance examinations.

My undergraduate program at XX University of China exposed me to a brand-new academic world. Mathematics continued to be my favorite subject and all the courses related to mathematics, ranging from AlgorithmDesign and Analysis, Artificial Intelligence, Fundamentals of Compiling to Data Structure gave full vent to my potential in mathematics, reinforcing my foundation in computer science and technology. In the course of the 4-year undergraduate program, I won scholarships every year and was given the Outstanding Student Award. With top-ranking GPA in my class, I won the first-class XX Scholarship.

It is an acknowledged truth that potential computer researchers must attain a parallel development between theoretical knowledge and R & D capability. In view of this, while making conscious efforts to lay a solid theoretical groundwork, I have, from the very outset of my undergraduate program, tried to participate in campus information network projects and software development, featuring the construction of website, database, e-commerce and artificial intelligence. In this process I mastered such computer languages and systems as C/C++, Delphi, JAVA, SQL, XML, HTML, ORACLE, and SQL SERVER. My rapid improvement in programming skills and R & D capability was recognized by both my teachers and my fellow students and my distinguished performance resulted in my acceptance into our Department’s computer lab where I took part in several other R & D projects and was made responsible for delivering a course on C Language.

As is often asserted, chances always favor those prepared minds. My academic efforts and practices paid off when as a senior student I was recruited into a research group by the Institute of Computing Technology, Chinese Academy of Sciences—the most authoritative research institute of computer science in China. What the Institute was doing was to look for some elitist students from colleges and universities throughout the entire country who were both talented in computer science and technology and interested in bioinformatics. Among a multitude of strong competitors, I distinguished myself with my strong mathematics foundation, excellent software development capability and my knowledge in biology. I participated in the research work on Face Recognition and bioinformatics.

This experience of being part of advanced research gave me great excitement and initiative. On the cutting-edge topic of protein recognition through the application of the mass spectrometric data, a subject rather challenging for an undergraduate, I proposed the creative use of statistical tools and recognition approaches and conducted many experiments and modifications in the realization of the software. Based on my research findings, I completed my thesis entitled The Realization of the MS/MS Data-Based Protein Recognition System MS Search—A Statistical Approach to the Problem of Figure Cluster. The thesis achieved unexpected success as the relevant experts from the Institute passed very positive comments on its academic value and on the rigorousness in theorization and exhaustiveness of experimental verification. Ultimately my thesis was rated Excellent Thesis of the Year.

On account of my distinguished undergraduate performance and my important contributions in the bioinformatics research, I enjoyed another privilege by the time I graduated in July 2003 —to undertake a Master’s program at the Institute of Computing Technology, Chinese Academy of Sciences waived of entrance examinations. For nearly six months, my work experience at this prestigious research institute of China has further enabled me to realize, with increasing sobriety, the gap in the level of bioinformatics research between China and more advanced countries. Although the application of statistical tools to bioinformatics research I proposed is a novel concept in China, it is far from perfect and needs to be significantly improved with the help of more advanced theories and technology. I believe that to achieve further academic breakthroughs it is necessary for me to receive more advanced academic input in western countries and to benefit from a wholly different educational system that will significantly broaden my academic vision and tap my academic potential.

Based on my past research experience, I have developed a clear idea about the areas of my future academic concentration. I will focus on the study of the 3-D structural analysis of protein, functional prediction, genome analysis, and sequence matching. My past education and research experience have convince me that academically I am well grounded in computer science, in mathematics, and in biology. I have also developed adequate practical skills. In a word, I am equipped with necessary qualifications for an advanced degree program at your esteemed university.

Young as I am, I am obsessed with a strong sense of urgency. Bioinformatics is developing at an alarming rate in the present-day world and against such a backdrop I fervently wish that I could quickly grow into a successful researcher under the nurturing guidance of the knowledgeable experts of your university. I plan to take many advanced courses in mathematics, molecular biology, bioinformatics and algorithmanalysis so that I can consolidate and enhance my foundation in mathematics and other related subjects. I will seek opportunities to participate in various academic occasions and to exchange extensively with people from diverse academic backgrounds. On the other hand, I will make full use of the library resources to keep track of the latest literature and research findings. If possible, I would like to join a research group on bioinformatics. I expect to make contributions to your program through my dedicated academic efforts and active extracurricular involvements.