**STATEMENT OF PURPOSE**

Since childhood, I have demonstrated talents for mathematics and thus studied Olympic mathematics for 12 years. After high school, I chose mathematics as my major and learned actuarial science by my self. To fulfill my dream of becoming an actuary, I hope to extend my mathematics and actuarial science study to a graduate level.

Since calculus-based mathematics is required to actuarial science, I planned to concentrate on my course work in my freshman year. My hard work was rewarded by the First-Class Outstanding Student Scholarship, which was awarded to top 5% students and I ranked 3rd out of 134. In the following summer vocation, I was confident of my mathematical foundation and decided to study *the Theory of Interest* by self study.

I really enjoy the process of learning this subject. The book was filled up with formulas and mathematical symbols and this writing style just suited my taste. I worked hard to deduct every formula, such as the Tailor Expression of which was not deducted in the book. Financial analysis also fascinated me a great deal. For instance, at first, I couldn’t understand the advantage of using *duration* as an index to measure the timing of future payments. Then I reviewed the book again and again to understand the time value of money more thoroughly.

 A thought suddenly dawned on my mind that *duration* was superior to others because it was the only index that successfully combined time, payments and interest rate as a whole. This experience told me that the purpose of using mathematics in the book was mainly to express the theory in a strict way, and it was much more important to understand the economic meaning of each definition and theorem behind those fancy mathematical formulas. Also, since the book mainly focused on determined models which could not explain the stochastic nature of actual economic phenomenon, I have a strong desire to learn advanced subjects in this field.

During my sophomore year, I passed the first two actuarial exams by 10 and 8 respectively

In the first semester junior year, I strengthened my pure mathematics in preparation for future study. Also, I scored 800 and ranked 88% in the GRE Mathematics Subject Test. In order to develop my applied-math ability, I registered the course “Mathematical Modeling” in the following semester.

It is a great pleasure for me to use mathematical models to solve practical problems. In that class I organized a team of 3 students to complete a report called “Optimal Strategy for Selecting Courses”. In order to build the initial model, I used Linear Regression to analyze the data and referenced my textbooks. After that, one of us wrote a program to put the model into practice, while another drafted the report. However, our program came across lots of difficulties. For example, it did not work for two senior students who successfully got PHD offers. Our model indicated that they should have selected many advanced courses to strengthen themselves, but actually they didn’t. At first, we assumed that they wanted to focus on few courses to raise their GPAs.

It could explain the result but there were no other similar examples to examine our assumptions. Then I sent an e-mail to one of them for help. She told me that they spent so much time on GRE and TOEFL that they could not spare any time for electives. Thus, we realized our error and added GRE and TOEFL as “courses” to our model. Finally, the program worked out correctly. This experience told me that truly mathematical modeling is based on facts rather than textbooks or assumptions without foundation. When I found out the result provided by our program could reflect the fact to some extent, I really admired the power of mathematical modeling. Also, I was really grateful to my team members for their high-quality work.

The Actuarial Science Program in University of Xxx is one of the oldest similar programs in the US. As my undergraduate major is mathematics, it’s easier for me to study in a science department than in a business school. As I know, University of Xxx has many outstanding actuarial science researchers, such as Professor xxx, who has won many SOA prizes. Also, the courses in University of Xxx might be the most challenging and broadest among all the similar programs. For example, I heard that Mr. Shui only taught the hardest 5 chapters of textbook in the course “Mathematics of Finance 2”, which could help me master the subject thoroughly rather than just passing actuarial exams. In addition, stochastic analysis, the typical course of financial engineering, was also taught by Mr. xxx there. Moreover, a great mass of statistics courses is available as well. At last, the location and surrounding of University of Xxx are very suitable to study.

I am taking SAS Language Programming, Non-parametric Statistics and Measure Theory this semester to strengthen my statistics background. However, all of these are basic courses and I am curious about advanced actuarial analytical techniques and eager to learn them systematically. As a result, I genuinely wish to be admitted to your program.