

Science and Engineering : After

I have always been fascinated by the elegant charm of statistics. It utilizes scientific principles to create order out of chaos, and transform data elements into information that can be used by policymakers. Its applications are limitless. From biostatistics that can help treat diseases, to econometrics to understand the economy, to reliability engineering to improve product safety, and even demographics to help understand the plight of different segments of society like migrant workers – statistics has the potential to affect every field.

It is my passion for both the logistical and theoretical aspects of statistics that has motivated me to expand my horizons by apply for a graduate degree from the Department of Statistics at ***** University. While it is true that mathematics is the universal language, completing my studies at this elite international institution will help me develop leadership skills that can improve collaborative research between the United States, and my native China.

I am currently a statistics major at ***** University, which was recently selected as the best academic university in China. For the last three years, I have developed my statistical and mathematical problem solving abilities. My undergraduate education has provided me with solid training in both statistics and mathematics, and my passion for this field has allowed me to make steady progress, and earn a score of 90 in all of my classes.

I especially enjoyed courses like *Scientific Computing*, *Real Variable Analysis* and *Partial Differential Equations* because they emphasized skills in analysis and logic. My high overall G.P.A. of 3.93 has steadily improved during my undergraduate studies. By the end of my third year, I ranked among the top three for statistics majors. While my undergraduate study in statistics has provided me with foundational knowledge, I seek graduate study to explore more complex topics including experimental design, survival analysis and machine learning (artificial intelligence).

To gain an understanding of the practical applications of statistics, during my undergraduate studies I have focused on several important research projects. In the *Multivariate Statistical Analysis* course, I was inspired by using ordinal principal component analysis and then expanded this to rank when using sample principal component analysis to sort demographic data from different countries to achieve more valid results. As part of the Student Research Training Program, I led a provincial project, *Quantitative Stock Selection in China's Market Based on Statistical Methods*.

In this project, I learned how to identify large quantities of stock market data from past years and taught myself mathematical models such as Capital Asset Pricing Model and Value-at-Risk Model to analyze risk and optimize investment outcomes. This was a collaborative team process. After dividing the work among group members with different backgrounds, I worked with another statistics major to apply Factor Analysis and Regression Analysis to help select representative variables and create a stock selection model that verified results from China's market from 2006 to 2010. To test our theory, our selection model has already made a profit in China's market for 2011.

I also engaged in internship opportunities to gain a better understanding of how statistical methods were applied in the business community. From July to August

2011, I interned in *****'s Municipal Bureau of Statistics, participating in the ***** Labor Force Survey for the third quarter; this experience was extremely beneficial as it allowed me to learn SPSS and Wincross software. As the assistant to the Bureau's Research Department chief, I helped design several questionnaires and programs. In January 2011, I accepted another internship at the ***** Commercial Bank of ***** in ***** as an assistant sales manager. I was responsible for helping to manage credit card affairs and other financial products. These internship opportunities made me realize the potential for calculating systemic risk in financial markets by developing better statistical models.

While my academic accomplishments may have been the most rewarding, it has been my participation in extracurricular activities that has most enriched my life and helped me nurture my interpersonal communications skills and leadership abilities. I especially treasure my experience working for the ***** University ***** Association as I was the director of the Research Center of *****. To lead a research team studying the living conditions of rural migrant workers in big cities, I visited the construction site to interview migrant workers in ***** to supplement quantitative data with qualitative information. This helped me better analyze, and present findings about the current conditions of migrant workers.

To prepare myself for international studies, I applied to become part of an exchange program at ***** University in ***** , which is one of the best and oldest universities in Europe. I recently returned from this program where I completed probability and regression-related courses that were entirely conducted in English through the Statistics Department. Now I have selected ***** University to continue my graduate study due to its top-ranked statistics program, as well as a program that balances an in-depth understanding of statistics with its application. I am currently working on my thesis involving modeling and statistical inference of self-adaptive design, and wish to continue this topic during my graduate studies.

I am extremely impressed with *****'s faculty members, which are world-class experts in modeling, inference and computational statistics. I look forward to working in a collaborative environment with these esteemed scholars, soliciting their feedback, and contributing to their ongoing research. In addition, *****'s multitude of other outstanding academic departments will give me a multidisciplinary education that I could not achieve at any other university in the world.

I am captivated by the study and application of statistics, and would love to become part of the intellectually stimulating environment at ***** . My rich academic and social experiences have equipped me with the qualifications necessary to succeed in your illustrious program. If admitted, I will strive to make valuable contributions to the academic community and treasure every moment at ***** University.

CRITIQUE SAMPLE

Hello,

Thank you for sharing this intriguing statement of purpose and allowing me to offer revisions and some suggestions for improvement. Oftentimes when looking at an SOP or similar essay for graduate school, I anticipate that the admissions committee will be expecting the candidate to address five primary topics:

1. How did you become interested in this field?
2. What experiences have contributed toward your preparation for further study?
3. What are your future goals?
4. What are your research interests?
5. How are you a "match" for the program to which you are applying?

I can see you have covered points # 1 and 2 quite well, as you've discussed your academic training and internships. You do touch on the other points but I'd suggest they could be just a bit stronger, especially when it comes to your future goals and your reasoning for applying for this particular school.

You could probably free up some space by trimming or summarizing in places where you've got quite a bit of exposition currently. Going on at length about why you love statistics and how it's something you've always dreamed of is not really appropriate for a graduate school essay.

Since you've already majored in this as an undergraduate it should be understood that this is your field of Interest. Now, the question is what do you want to do with it and more importantly why is a master's degree an important step for you to advance in this field? The emphasis should be on what you intend to accomplish.

It's good to highlight why you are well prepared for the program, insofar as you can assure the admissions committee that you were able to handle the tools of their trade and can keep up with your peers. However, I'd suggest not to go into too much extended detail on information that can be easily found on your resume or in your transcript. Offering the highlights is key here

Since you've already had professional exposure in an attractive field you'll probably want to address the unstated question of why don't you just go ahead and find a job in this field rather than going to school. After reading through the whole essay, I get a sense that it might be more attractive for you to gain more exposure to theory and cutting-edge knowledge in this field. If so, I'd recommend you highlight this and explain why XXX University *in particular* will give you that knowledge.

It would also be good to connect this with a tangible goal after graduation. As a statistician, what new ideas or practices do you hope to contribute to your field of work or study? Are there things in the field that you hope to change? Given your ultimate goal of starting your own futures company, what professional path do you envision to get there? And again it would be a good idea to tailor this to the specific university to which you're applying—its geographical location, specific class project and internship opportunities you anticipate, and so on.

I hope these revisions and suggestions are helpful, and I'll be standing by for your next editing round!

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