

# Personal Statement Format for Masters

I first demonstrated a preference for mathematics above other subjects in elementary school. When the Pythagorean Theorem was taught to me in fifth grade, I spent the remainder of the day examining triangular shadows cast by objects, searching for validation or a material contradiction, fascinated by the idea that I could manipulate objects to alter the shapes of their shadows and yet the theory still held. This interest in and fascination with math and its applications never ceased, and when I began my studies at the University of Somewhere, I declared as an Applied Mathematics major without hesitation.

As an applied math major, I pursued an emphasis in System Theory. The requisite courses in signal processing and communication systems exposed me to a link between the theoretical mathematics I had always enjoyed and the more practical problems that would come to hold the focus of my academic interest. I recall being particularly intrigued when I noticed that the equation for information entropy was indeed identical to the classical entropy I had been exposed to years earlier during a physics course. As my exposure to research and engineering increased during my time at U. Somewhere, I became more drawn to communication theory, culminating in my current application to graduate studies at Rice.

During the summer preceding my last year as an undergraduate, I participated in an NSF-funded Research Experience for Undergraduates (REU) program hosted by the Colorado School of Mines (CSM) at the Chinese University of Hong Kong and directed by Dr. Somebody. I lived in Kowloon Tong for eight weeks, collaborating with two other students on high-resolution image reconstruction using an algorithm derived from wavelet theory, and learning how to formulate research ideas, communicate my ideas to others, and facilitate a working team dynamic. The overall experience was life-changing: participating in research with other students in an international setting demonstrated to me the possibilities that lay ahead of me and the work that it would take to achieve my goals. I learned that knowledge in a variety of disciplines is vital to succeeding with research, and that being able to teach myself new concepts in unfamiliar areas is perhaps even more important.

In addition to our research, the other students and I integrated ourselves into the greater Hong Kong scientific community by attending conferences. Also, I traveled to Beijing, China, to attend a workshop on mathematical methods for multi-channel image processing and pattern recognition. Some of the topics covered were variational approaches for minimization and iterative schemes for image restoration; learning about current research in electrical engineering and computational math while simultaneously engaged in research myself stimulated my interest in theoretical electrical engineering problems, strengthening my desire to continue my education and pursue a doctoral degree in electrical engineering.

I plan to become a professor at a research university after finishing PhD. My ambition to become a professor has largely been driven, in addition to my own academic experiences, by my enthusiasm for facilitating the education of others. Serving as a volunteer note-taker at the Disabled Student's Program allowed me to contribute in a meaningful way to the academic progress of students with learning differences, and I keep their thanks as a reminder of the difference I can make by sharing my knowledge and skills with others. As an undergraduate, I was also an active member of the Mathematics Undergraduate Student Association (MUSA) at U. Somewhere. I served on their academic committee and participated every semester in peer advising sessions hosted by MUSA for students interested in taking math courses or declaring as mathematics majors. Providing academic guidance and encouraging interest in math and science

is important to me and my hope to continue to be able to inspire passion in others for these subjects will be served by entering the greater academic community in a professorial position.

My experience as a peer leader and service to my community extends beyond math and science: from Fall 2005 to the end of Fall 2006, I was a volunteer intern at the Gender Equity Center on campus as a peer educator and advisor. In addition to raising campus awareness, I gained many practical skills while working at the Gender Equity Center, including how to prepare presentations, speak publicly, and lead and engage a group in important discussions. These skills have been valuable when working with peers in the research experiences I have had and outside of the classroom.

In order to further science and engineering, I believe it is essential that researchers and professors pass on not only their knowledge but also their passion for the field. As an aspiring scientist I am energized by the challenge that advanced research presents and eager to share my zeal. I am applying to pursue graduate studies not only because I will be researching novel areas in electrical engineering but also because I aspire to serve as a motivator and positive example for future generations of engineers, scientists, and mathematicians.