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I cannot say that I have grown up thinking that I would have a career in Computer Science. However, when I took a High School course in Computer Science, I found it so intricate and nuanced that I knew that this is the field in which I wanted to have a career.

My interest in sciences dates back to when I was in school. I was fascinated by how the world worked and questioned everything that caught my attention. I grew up with a heavy interest in biological sciences. I loved learning about life and all the complex, detailed mechanisms which created and sustained life. It was mesmerizing to learn about how so many parts of an organism, from organs to tiny organelles, worked together to keep it alive and functioning. In High School, when I first started working with computers, that same feeling was evoked in me. To me, Computer Science was almost exactly like studying life - how everything worked seamlessly to run a machine and perform operations was just incredible to behold.

During my undergraduate studies I was most interested in subjects like Algorithms, Data Structures, Machine Learning and Networking. It was most fascinating to see how simple rules and ideas could give rise to the ability to solve complex problems and allow computers to “learn” things. I remember how exciting it would be to learn a new algorithm and then test it out by coding it on my computer. I was awed by how these algorithms could be applied to ideas in AI and Machine Learning and give rise to the impression that a machine could be intelligent and think and logically respond to inputs.

I have also had many courses in Programming and in Database Systems. These courses afforded me the opportunity to get a more hands-on look at the applications of computers and ameliorate my skills as a programmer. For these courses, I have completed several projects which illustrated my abilities in the courses. In my sophomore year, for my project in object-oriented programming, I had designed and coded a simple brick game using the OpenGL code library. My teacher was thoroughly impressed as I had learned a language that was taught in a course reserved for more experienced students and my project received the highest grade. In my junior year, my project was to create a hotel/ticket reservation management software that could be implemented in a small-scale travel agency. This project greatly improved my working knowledge of database concepts and, it too, received the highest grade.

I elected to do my Bachelor's Thesis on Wireless Networking. More specifically, I performed my research on Vehicular Ad-hoc Networks (VANETs). I was inspired to dive into the depths of this field when I saw how fresh and new it was compared to other fields in Networking. I was amazed by the applications of using wireless communications between cars, more specifically, the use of safety applications. Living in a developing country has embedded in me a great sense of how vehicular traffic can have a great influence on one's daily life. I noticed that most safety applications were developed for situations arising mainly in first-world countries. However, certain situations do not exist there that usually occur in developing countries, like vehicular accidents caused by fog on undeveloped highways. In effect, I based my thesis on the use of safety applications for low-visibility conditions on highways - for instance, during fog or torrential rain - which has many adverse effects in underdeveloped countries, such as Bangladesh. I observed differences in the working of safety applications in low-visibility scenarios and claimed certain constraints which safety applications must follow to work as intended. Afterwards, I proposed a mechanism by which we can improve the effectiveness of these applications, especially in situations like torrential rain, which can drastically decrease the reception rates of wireless signals.

Research for my thesis in this area, required me to devote hours to reading many published papers on

safety applications in VANETs. I would peruse the papers repeatedly until I thoroughly understood them. I'd analyze the solutions proposed to solve the problems and learn the algorithms designed in the solutions. I would brood over the shortcomings of the papers and try to come up with solutions or improvements of my own. Overall, my thesis helped me to understand how meaningful a career in research could be. The more palpable benefits include a further grasp of networking and insight into conducting research properly. At the end of the final year, my thesis was well received by the panel of professors to whom I defended it.

Alongside my research work, I was also one of the executive members of the IUT Computer Society which organizes the National ICT Fest hosted by IUT every year. As Treasurer of the committee, I was in charge of managing the finances and distributing the funds that we were given to set up the fest in 2012. As an executive committee member I was also in charge of overseeing some of the activities of the fest. In the end, the National ICT Fest was a grand success. It afforded me the chance to develop my abilities in fiscal management, organization and my interpersonal relationship skills.

Recently, I have joined the Islamic University of Technology (IUT) as a lecturer. I was highly encouraged by my professors and the Head of the Department of Computer Science and Engineering to become a part of the faculty. Currently, I am teaching a course on Data Structures and instructing the corresponding lab class. I am also a secondary instructor for the lab classes on Database Concepts and Programming. I joined IUT so as to gain working experience in teaching and to have ample opportunity to conduct more research before I enroll in a graduate program.

It was in this vein, that I decided to further my career in research and it prompted my interest in the graduate program at Stony Brook University. I am aware that the Stony Brook University is a top university and that it is one of the best research centers. The main areas in which I am interested in studying may seem very dissimilar but I hold a special fondness for each of them. Artificial Intelligence, is the field in which I am interested the most. I am also interested in Wireless Networks, as this is the field in which I have conducted my Bachelor's thesis and in which I have the most experience in research. Lastly, I am interested in Bioinformatics, which brings together my love of both Biological Sciences and Computer Science.

I am very eager to work under and with some of the finest minds in Computer Science so that I may be able to perform valuable research work and increase the depth of my knowledge. I wish to earn a Ph.D. and then follow this with a career in research and teaching. I feel that this graduate program will allow me to achieve my goals. I hope that my background and qualifications are found suitable to enroll into the Ph.D. program in Computer Science at Stony Brook University.