

Statement of Purpose of Md. Abid Hasan

I will be shifted from my veracity if I say that I ever expected to be interested in fields like bioinformatics and computational biology after being a student of computer science. However, when I had the chance to experience this field close enough I found it so intricate and motivating that I knew I wanted to have a career in this area. That is what persuades me to pursue a PhD in bioinformatics and computational biology. Several years from now, I picture myself as an extensive researcher into places like genome center, cancer research institute and bioinformatics research centers around the world on latest problems in the field.

To be an engineer was the first step towards my dream. And the foundation of that dream was first laid on at the department of Computer Science and Engineering (CSE) at Islamic University of Technology (IUT), one of the leading engineering universities in Bangladesh. Only few students holding highest quality result can get the chance to study in this university after a very competitive admission test. Congenial class environment and highly competitive student mindset has given me a perfect start to my engineering education. Successful completions of my undergraduate courses obtaining highest grades and leading my group in different projects among other vying groups are my big achievements at IUT.

During my undergraduate study, I was interested by the subjects like Algorithms, Data Structures, Pattern Recognition and Artificial Intelligence. A broad range of programming language courses enabled me to apply the rules and algorithms that I learned in theories. I can still feel the excitement of implementing an algorithm on a particular real life problem by coding it in my computer. Amazed by watching how simple rules and ideas translated into few line of computer code could give rise to the ability to solve complex problems. And then, I came across to the course of Bioinformatics and I knew this is what I was waiting for; this is what I want to do.

The first few classes of the bioinformatics course introduced me to a whole new world of science. I came to know about topics like DNA/RNA sequences, protein sequences, gene expression, biological databases, evolutionary computing, microarray data analysis, gene feature selection etc. which I only heard from the scientists in the television or read about them in the scientific journals earlier. Being in a class where I can learn those subjects by myself was one of the fascinating experiences of my life. At the final semester of my undergraduate program, I elected to do my Bachelor's thesis on bioinformatics. More specifically, I developed an algorithm to rank a set of genes in a microarray cancer dataset to find the best considerably reduced set of feature for efficient cancer dataset classification using different statistical approaches. During this time, I involved myself learning software like **R** Bioconductor project and MATLAB.

Research for my thesis required me to spend committed hours on many published papers on the respective field. I would go through the papers over and over again until I realized the core

objective of the authors, the proposed algorithm for the problem and the design of the solution. Involving myself in such devotion helps me find the shortcomings of the solutions and thus come up with new improved ideas towards a particular problem. Finding solution of a real world problem gives me immense pleasure and an experience of satisfaction of achieving something as a person. Overall, my thesis helped me realized how meaningful a career in research could be. At the end of the year, my thesis was well received by the panel of professors and I obtained highest grade for my thesis. Later, my thesis was published in an international journal.

After completing my Bachelor's degree securing the first class first position in a highly competitor class of 38, I joined the Islamic University of Technology (IUT) as a lecturer in December 2010. I have conducted several courses like Data Structure, System Analysis and Design, Mathematical and Statistical Analysis, Statistical Packages, AI and Expert Systems and Computer Programming. I have also worked as an instructor in the lab classes on Data Structure and Computer Programming. Being a teacher gives me the opportunity to be in an environment where I have ample opportunity to conduct research alongside gathering work experience.

After joining as a lecturer, I started part-time Master's degree at IUT. During my Master's thesis on employing machine learning algorithm for feature selection to classify microarray dataset, my supervisor left the country placing me and my thesis into a great uncertainty. Even though there was inadequate experienced advice and support, I continued to search for the solution. My continuous persuasiveness and hard work and some assistance of my professors ultimately results me the completion of my master's thesis. I have also published my thesis work in a reputed international bioinformatics journal and some other related works in international conferences. Now I am confident that I can overcome any adversities that come across my path.

It was in this vein, that I decided to further my career in research and it prompted my interest in the graduate program of XXX University. The up-to-date research projects in the field of bioinformatics and computational biology like XXX and the state-of-the art research facility motivated me to choose this university and carry on my higher study in bioinformatics. I am well aware that admission into this university is highly competitive, but I would like to think of myself as a suitable match for the program because of my enthusiasm, zeal to work hard in the respective research field.

I am very eager to work under and with some of the finest mind in Computer science. Continuing my study and performing research in this university will increase the depth of my knowledge. I wish to earn a Ph.D. and continue my career as a researcher in future. I believe the graduate program of XXX University will help me to achieve that goal. I hope my background and qualification are suitable to enroll into in Ph.D. program in Computer Science at XXX University.